Institutional Program Review—2018-2019
Program Efficacy Phase: Instruction
DUE: Monday, March 18, 2019 by NOON

Purpose of Institutional Program Review: Welcome to the Program Efficacy phase of the San Bernardino Valley College Program Review process. Program Review is a systematic process for evaluating programs and services annually. The major goal of the Program Review Committee is to evaluate the effectiveness of programs and to make informed decisions about budget and other campus priorities.

For regular programmatic assessment on campus, the Program Review Committee examines and evaluates the resource needs and effectiveness of all instructional and service areas. These review processes occur on one-, two-, and four-year cycles as determined by the District, College, and other regulatory agencies. Program review is conducted by authorization of the SBVC Academic Senate.

The purpose of Program Review is to:

- Provide a full examination of how effectively programs and services are meeting departmental, divisional, and institutional goals
- Aid in short-range planning and decision-making
- Improve performance, services, and programs
- Contribute to long-range planning
- Contribute information and recommendations to other college processes, as appropriate
- Serve as the campus' conduit for decision-making by forwarding information to appropriate committees

Our Program Review process includes an annual campus-wide needs assessment each fall and an in-depth efficacy review of each program on a four-year cycle. All programs are now required to update their Educational Master Plan (EMP) narrative each fall. In addition, CTE programs have a mid-cycle update (2 years after full efficacy) in order to comply with Title 5 regulations.

Committee members are available to meet with you to carefully review and discuss your Program Efficacy document. You will receive detailed feedback regarding the degree to which your program is perceived to meet institutional goals. The rubric that the team will use to evaluate your program is embedded in the form. As you are writing your program evaluation, feel free to contact the efficacy team assigned to review your document or your division representatives for feedback and input.

Draft forms should be written early so that your review team can work with you at the **small-group workshops:**

Friday, February 22 from 9:30 to 11:00 a.m. in NH-222
Friday, March 1 from 9:30 to 11:00 a.m. in B-204

Final documents are due to the Committee co-chairs (Paula Ferri-Milligan at pferri@sbccd.cc.ca.us and Wallace Johnson at wjohnson@sbccd.cc.ca.us) by **NOON on Monday, March 18, 2019**.

SUBMISSION FORMAT: **1) Use this current efficacy form and attach as a MICROSOFT WORD DOCUMENT (do NOT convert to PDF)**
2) Do NOT change the file name

It is the writer's responsibility to be sure the Committee receives the forms on time.

The efficacy process now incorporates the EMP sheet and SLO/SAO documentation, which you will need to insert. We have inserted the dialogue from the committee where your last efficacy document did not meet the rubric, the curriculum report (if applicable), and the SBVC demographic data. **If you have questions regarding the SBVC demographic data, contact Christie Gabriel, Research Analyst, at cgabriel@sbccd.cc.ca.us by February 25. If you have additional data requests, those requests must be submitted to Christie Gabriel by February 8.** Following is the link to Program Review Efficacy Resources, which will be useful as you complete your efficacy report:

https://www.valleycollege.edu/about-sbvc/campus-committees/academic-senate/program-review/17-efficacy.php

Program Efficacy

2018 – 2019

Program Being Evaluated

Geography/GIS

Name of Division

Science

Name of Person Preparing this Report **Extension**

Todd Heibel, x8638

Names of Department Members Consulted

Jennifer Bjerke

Names of Reviewers

Krista Ornelas-Mora, David Smith, Melissa King

Work Flow	**Date Submitted**
Initial meeting with department	Monday, 28th January 2019
Meeting with Program Review Team	Electronically
Report submitted to Program Review co-chair(s) & Dean	**by NOON on March 18**

Staffing

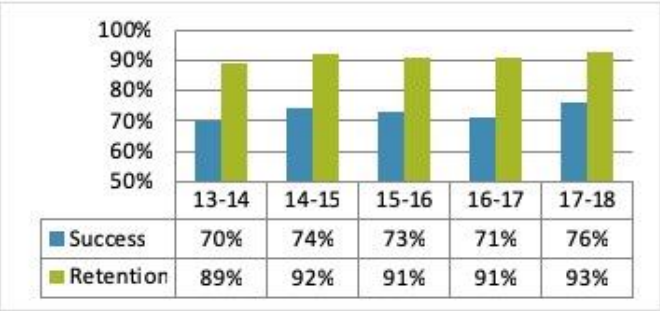
List the number of full and part-time employees in your area.

Classification	Number Full-Time	Number Part-time, Contract	Number adjunct, short-term, hourly
Managers	0	0	0
Faculty	2	0	7
Classified Staff	0	0	0
Total	2	0	7

GEOGRAPHY — 2017-2018

Description: (Provide an updated overview of your program/area. 225 Words Max)
The Geography Department provides students with natural/physical science and social science transfer opportunities. Students can choose from two degrees, an AS or an AA-T. Geography courses are offered in traditional face-to-face and online formats. Schedules range from full- to compressed-calendar format, and courses are offered from the morning through evening to facilitate student access. Student success is accommodated through various mechanisms, including tutorial/SI support, office hour support, and online course management systems. Geography Degrees prepare students for transfer, as well as careers within planning, environmental, marketing, logistical, climatological, governmental, political, legal, and educational sectors.

	13-14	14-15	15-16	16-17	17-18
Duplicated Enrollment	1,179	1,157	1,015	903	955
FTEF	6.60	7.90	6.55	8.01	7.32
WSCH per FTEF	551	455	484	348	410



	13-14	14-15	15-16	16-17	17-18
Sections	40	49	52	52	51
% of online enrollment	0%	2%	13%	17%	21%
Degrees awarded	2	4	3	5	3
Certificates awarded	N/A	N/A	N/A	N/A	N/A

Assessment: (Provide an analysis based on the data provided. As you do so, address each of the tables/charts. 225 Words Max)
The FTES data indicate a decline from 2013-14 through 2016-17, with a slight increase in 2017-18. The duplicated student enrollment duplicates this trend. The decline may be partially explained by a steadily improving economy where potential students are choosing employment rather than college. It may also be partially attributed to course sections being offered in a schedule that is not responsive to student needs. The department is analyzing historical enrollment data and scheduling future courses, including online sections, to be more accommodating. In addition, the department is coordinating with counseling faculty and marketing staff to better advertise the program. These strategies were employed during the 2017-18 academic year and appear to have achieved a modicum of success.

In light of declining enrollment and increasing FTEF and total number of course sections from 2013-14 through 2016-17, Geography Department efficiency also declined. The intent of offering a larger variety of courses and sections is to increase options and access for students. Past enrollment data are more fully incorporated to better guide the course scheduling process. This resulted in sections offered during times and within formats better suited to student schedules. Closer coordination with counselors and marketing experts also appears to have played a role in improving overall enrollment and efficiency.

In general, success and retention have increased somewhat since 2013-14. The department endeavors to improve both measures through faculty and SI/tutorial support. The number of degrees awarded have increased, but the department aims to increase the number of geography majors.

Progress from Last Year's Action Plan: (Provide an update on the progress made from last year's Action Plan. 225 Words Max)
The department is utilizing social media (e.g. Facebook and Twitter) and will expand coordination with counseling faculty and marketing personnel to more effectively advertise the program and recruit additional students and geography majors. As a further means to increase student success and retention, there is a college-funded Geography SI/tutor. Partnerships with universities, internship sites, educational grants, and employers are in the nascent stages of development. The department has begun dialogue and participated in meetings with MESA and S-STEM programs on campus. An SBVC geography scholarship will

SAOs/SLOs/PLOs: (Summarize how the assessment of SAOs, PLOs and/or any SLOs that shows significant effect has influenced your goals. 200 Words Max)
The most recent (ending in 2017-18) three-year, program-level SLO summary for both Geography AS and AA-T Degrees indicates that 78 to 79 percent of students have met the three identified SLOs. This is general agreement with success rates that have fluctuated between 70 and 76 percent during the past five academic years. Essentially, the SLOs chosen to represent the AS and AA-T degrees reflect basic cartographic and geographic literacy, as well as knowledge of the breadth of geography and its contributions to a better understanding of human-environment interactions. These program-level SLOs and longitudinal student achievement integrate and support selected program goals. Specifically, geographic and cartographic aptitude may serve as a basis to increase the number of geography majors and earned degrees, as well as the number of students who successfully transfer to four-year universities. The interdisciplinary nature of the SLOs and related student performance supports ongoing, regular curriculum development, as well as development of Global Studies, Environmental Studies, and Environmental Sciences degree programs. In addition, the data suggest that geography students should be involved with interdisciplinary learning communities.

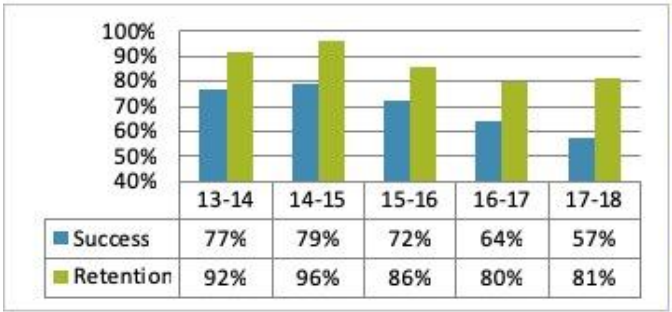
Departmental/Program Goals: (Goals should be specific, measurable, linked to your data analysis, and reflected in the Action Plan section). Tie goals to the college.
The Geography Department goals align with college strategic directions and goals, including 1) increasing student access, 2) promoting student success, 3) improving communication, culture, and climate, and 6) providing exceptional facilities. The first department goal is to increase the overall student enrollment in all geography sections, as well as the number of geography majors and AS and AA-T degrees awarded. This includes increased marketing and outreach, closer coordination with counselors, and new and existing curricular development, including honors-level, non-credit, service-learning, and regional field studies courses. The second department goal is to offer all geography courses in a schedule and delivery method that accommodates student needs. This includes traditional, full-term, short-term, and distributed education formats. The third department goal is to permanently fund tutorial and SI support for all geography students. This includes institutional funding such as basic skills, MESA, and S-STEM programs, as well as external grant funding. The fourth department goal is to increase and maintain funding for exemplary field trips, as well as classroom and laboratory equipment and supplies. This incorporates the Program Review process. The fifth department goal is to expand and strengthen relationships with four-year transfer institutions, as well as internship sites and employers. The sixth department goal is to hire an additional full-time faculty.

Challenges & Opportunities: (Challenges and opportunities should be reflected in the Action Plan. 200 words maximum).
The primary challenge for the Geography Department is to steadily increase student enrollment, efficiency, and degree attainment. Existing opportunities that could ameliorate this challenge include social media and counseling outreach, revised curriculum, adaptive course scheduling, AS and AA-T degree options, and tutorial/SI student support. A secondary challenge, related to the primary challenge, is the relatively small number of geography majors. Some of the same existing opportunities could address this challenge. A tertiary challenge is relatively stagnant funding for field trips and supplies for classrooms and laboratories. Opportunities exist within the institutional Program Review process, as well as grant funding. A quaternary challenge is the imperfect linkage between the Geography Department and other resources, including interdisciplinary programs, MESA and S-STEM program, four-year universities, research opportunities, and employers.

Action Steps	Department Goal	Necessary Resources to Complete	Target Completion Date
Increasing outreach and marketing, revising and creating new course and degree curriculum, analyzing current and past student enrollment data to better inform fall, spring, and summer semester scheduling, and participating in Program Review and grant funding processes.	Increasing student enrollment, majors, and earned degrees.	Counseling, marketing, curriculum, scheduling, Program Review, grant funding, and SI/tutorial support.	Ongoing, but data from 2018-19 should serve as a benchmark.

GEOGRAPHIC INFORMATION SYSTEMS — 2017-2018

Description: (Provide an updated overview of your program/area. 225 Words Max)
The Geographic Information Systems (GIS) Certificate is designed to provide the skills and knowledge necessary for immediate entry-level employment for persons interested in GIS and automated mapping technology. The GIS Certificate provides a foundation for transfer to four-year and graduate education within the fields of GIS, geography, remote sensing, environmental and Earth sciences. GIS is an important skill utilized within the following employment sectors: planning, architecture, criminal justice, marketing, logistics, environmental research and remediation, utilities, military, search and rescue, fire fighting, and more.



	13-14	14-15	15-16	16-17	17-18
Success	77%	79%	72%	64%	57%
Retention	92%	96%	86%	80%	81%

	13-14	14-15	15-16	16-17	17-18
Duplicated Enrollment	134	101	81	89	74
FTEF	2.22	1.66	2.35	2.07	2.63
WSCH per FTEF	241	278	154	201	132

	13-14	14-15	15-16	16-17	17-18
Sections	17	20	20	18	18
% of online enrollment	0%	0%	20%	22%	50%
Degrees awarded	N/A	N/A	N/A	N/A	N/A
Certificates awarded	17	5	2	3	3

Assessment: (Provide an analysis based on the data provided. As you do so, address each of the tables/charts. 225 Words Max)
After a three-year decline, FTES, student enrollment, and efficiency increased in 2016-17, but declined, once again, in 2017-18. Significant improvement must occur to ensure the viability of the GIS Certificate program. On- and off-campus outreach, marketing, and partnerships with counselors must expand in order to increase FTES and overall student enrollment. Courses necessary to complete the 19-unit certificate are approved for online delivery, and the State Chancellor's Office has reaffirmed its support for the GIS Certificate. These valuable resources must be leveraged to increase student enrollment. At present, evidence suggests that most GIS students do not pursue GIS courses beyond the introductory level (e.g. GIS 100 and 130).

Student success and retention have generally declined since 2014-15. This may be partially attributed to faculty not dropping students if they are no longer attending class meetings. It may also be the result of course scheduling that does not meet student needs. As an increasing number of GIS courses are offered online, steps must be taken to ensure student success and retention.

There is a miniscule institutional budget to support the GIS program, but additional funding is necessary. In particular, there is a strong, ongoing need for tutorial/SI support for students. This has the potential to address FTES, enrollment, success, and retention concerns. It may also address the relatively low number of awarded GIS Certificates, as will the recent State Chancellor's Office reaffirmation.

Progress from Last Year's Action Plan: (Provide an update on the progress made from last year's Action Plan. 225 Words Max)
Although annual Industry Advisory Committee meetings maintain partnerships with area employers and transfer institutions, more progress must occur. Specifically, more student work experience (internship), employment, and transfer opportunities must be available. While nascent outreach and marketing have occurred on and off campus, these efforts must increase. A colloquium series, workshops, and classroom presentations would assist more traditional marketing efforts. Online curricular development is a positive step. Additional steps should include creation of non-credit GIS courses (offered on and off campus), as well as more thoroughly incorporating GIS courses into other degree and certificate programs on campus. A full-time GIS faculty

SAOs/SLOs/PLOs: (Summarize how the assessment of SAOs, PLOs and/or any SLOs that shows significant effect has influenced your goals. 200 Words Max)
Many of the course- and program-level SLOs need to be updated to reflect ongoing curricular modifications. Future curricular and SLO modifications endeavor to be tailored to changing industry and academic trends. At present, three out of five program-level SLOs have been assessed. Between 80 to 93 percent of students met the three program-level SLOs. Essentially, the SLOs assess basic, technician-level GIS skills that most employers and four-year transfer institutions demand. While the SLO assessment data are laudable, student enrollment, retention, success, and certificate completion must improve. In the future, SLOs, course objectives, and course content will be aligned with ESRI GIS Certification, as well as industry and four-year transfer demands.

Departmental/Program Goals: (Goals should be specific, measurable, linked to your data analysis, and reflected in the Action Plan section). Tie goals to the college.
The GIS Department goals align with college strategic directions and goals, including 1) increasing student access, 2) promoting student success, 3) improving communication, culture, and climate, and 6) providing exceptional facilities. The first department goal is to increase the overall student enrollment in all GIS sections, as well as the number of GIS certificates awarded. This includes expanded marketing and outreach, closer coordination with counselors, OER textbook adoption, and new and existing curricular development, including honors-level, non-credit, service-learning, and industry-specific courses. The second department goal is to offer all GIS courses in a schedule and delivery method that accommodates student needs. This incorporates flexible scheduling so that students can earn the GIS Certificate in two to three semesters, including online. This has occurred during the 2018-19 academic year. The third department goal is to permanently fund tutorial and SI support for all GIS students. This includes institutional funding such as basic skills, MESA, and S-STEM programs, as well as external grant funding. Perkins Grant funding is presently in place. The fourth department goal is to increase and maintain funding for exemplary site visits, as well as classroom and laboratory equipment and supplies. This incorporates the Program Review and grant funding processes. The fifth department goal is to expand and strengthen relationships with work experience (internship) sites and employers, as well as four-year transfer institutions. The sixth department goal is to hire an additional full-time faculty.

Challenges & Opportunities: (Challenges and opportunities should be reflected in the Action Plan. 200 words maximum).
The primary challenge for the GIS Department is declining student enrollment, success, and retention. Existing opportunities that could ameliorate this challenge include social media and counseling outreach, revised curriculum, adaptive course scheduling, recently reapproved certificate, and tutorial/SI student support. A secondary challenge, related to the primary challenge, is the relatively small number of earned certificates. Some of the same existing opportunities could address this challenge. A tertiary challenge is relatively stagnant funding for site visits and supplies for classrooms and laboratories. Opportunities exist within the institutional Program Review process, as well as grant funding. A quaternary challenge is the imperfect linkage between the GIS Department and other resources, including interdisciplinary programs, four-year universities, research opportunities, and employers. A promising prospect is partnering with the ESRI GIS Certification program. By preparing students to successfully pass the entry-level GIS certification exam, a greater number of GIS students may qualify for employment. Tangential benefits include increased student enrollment and successful GIS Certificate completion. At present, students can complete the certificate within one year entirely online. Perkins Grant funding has been procured.

Action Steps	Department Goal	Necessary Resources to Complete	Target Completion Date
Increased outreach and marketing on and off campus, adaptive curricular and program revision, aligning curriculum with the ESRI GIS Certification program, offering a fully online GIS Certificate, and participating in Program Review and grant funding processes.	Increased student enrollment, success, retention, and certificate completion.	Counseling, marketing, curriculum, partnerships, scheduling, Program Review, and grant processes.	Ongoing, but data from the 2018-19 academic year will serve as a benchmark. Beginning in the 2018-19 academic year, all courses necessary to complete the certificate are offered online, and students can complete within one year. Perkins Grant funding has been procured to assist with marketing and SI/tutorial support.

PROGRAM: PLEASE INSERT YOUR RECENT EMP FROM FALL 2018

Part I: Questions Related to Strategic Initiative: Increase Access

Goal: SBVC will improve the application, registration, and enrollment procedures for all students.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Demographics	The program **does not provide** an appropriate analysis regarding identified differences in the program's population compared to that of the general population.	The program **provides an analysis** of the demographic data and provides an interpretation in response to any identified variance. The program **discusses the plans or activities** that are in place to recruit and retain underserved populations as appropriate.	In addition to the meets criteria, the program's analysis and plan **demonstrates a need** for increased resources.
Pattern of Service	The program's pattern of service is **not related to the needs of students**.	The **program provides** evidence that the pattern of service or instruction meets student needs. The program **discusses the plans or activities** that are in place to meet a broad range of needs.	In addition to the meets criteria, the program **demonstrates that the pattern of service needs to be extended**.

Use the demographic data provided to describe how well you are providing access to your program by answering the questions below.

Demographics – 2015-16 to 2017-18 Academic Years		
Demographic Measure	**Program: Geography / GIS**	**Campus-wide**
Asian	3.9%	4.8%
African-American	18.1%	12.4%
Hispanic	61.7%	65.3%
Native American	0.8%	0.2%
Pacific Islander	0.7%	0.2%
White	13.8%	13.2%
Unknown	1.0%	3.9%
Female	53.2%	57.5%

Male	46.8%	42.5%
Disability	1.8%	5.4%
Age 19 or Less	22.2%	22.5%
Age 20 to 24	48.2%	34.7%
Age 25 to 29	22.2%	17.7%
Age 30 to 34	9.9%	9.3%
Age 35 to 39	5.4%	5.5%
Age 40 to 49	5.7%	6.2%
Age 50+	4.7%	4.1%

Demographics:

Provide an **analysis** of how internal demographic data compare to the campus population. Alternatively, provide demographics relative to the program that are collected. If internal data is not collected, describe plans to implement collection of data.

Please note that GIS represents the acronym for Geographic Information Systems, a computer-based mapping program that allows the user to integrate tabular data, as well as layers of visual data, to create unique maps for a variety of applications.

Within Geography-GIS, the following demographic groups are **underrepresented**:

- Asian,
- Hispanic,
- Female,
- Students with Disabilities,
- Age 19 or less
- Age 35 to 39, and
- Age 40 to 49.

Within Geography-GIS, the following demographic groups are **overrepresented**:

- African-American,
- Native American,
- Pacific Islander,
- White,
- Male,
- Age 20 to 24,
- Age 25 to 29, and
- Age 50 and above.

With some exceptions, the Geography-GIS Department's population mirrors that of the college. The following populations vary by more than one percent: African-American, Hispanic, Female, Male, Students with Disabilities, Age 20 to 24, and Age 25 to 29. The following could provide reasons for variance with the campus-wide population:

- Physical geography lecture (GEOG 110) and laboratory (GEOG 111) comprise the greatest number of Geography sections offered during the fall, spring, and summer semesters. This reflects a longtime and continued demand for transfer-level, physical science (natural science) courses. Because GEOG 110 and 111 comprise the requisite four-unit, physical science transfer credit into CSU, UC, and other

common transfer destinations, it remains a popular choice for transfer-minded SBVC students. For better or worse, many students perceive these courses as more approachable and less daunting than other physical science courses (e.g. astronomy, biology, chemistry, geology, and physics). Students may also satisfy physical science transfer requirements by taking GEOG 114: Weather and Climate, although this course is offered only once per academic year.

- In addition to satisfying physical science transfer requirements, selected geography courses can also satisfy social science transfer requirements. These courses include: GEOG 100: Map Interpretation and Geospatial Analysis (cross-listed as GIS 100), GEOG 102: Cultural Geography, GEOG 106: Geographic Perspectives on the Environment, GEOG 118: California Geography, and GEOG 120: World Regional Geography. However, students have a greater number of social science transfer choices across the SBVC curriculum.
- Historically, students who comprise the preceding cohorts (overrepresented) enter college with a lack of basic skills. Of course, this is a gross generalization. Nonetheless, when students lack basic skills (regardless of ethnicity or gender) they tend to select courses according to perceived ease and opportunities for success. Rightly or wrongly, many geography courses are perceived to be more accessible to students than many of their Science Division counterparts. This may be partially a result of a lack of basic skills prerequisites – including reading, English, and mathematics – for SBVC geography courses. In spite of basic skills advisories, some students enroll in geography courses with the impression that they will be "easy." Unfortunately, students who lack basic skills are not successful within physically- and socially-oriented geography courses. During the most recent curriculum revision, all geography courses include English 015 as an advisory, and GEOG 110 and 114 also include Math 942 as an advisory. Faculty are in process of updating the advisories to English 101 and Math 096 for all GEOG and GIS courses, in order to align with forthcoming AB 705 regulations.

The SBVC Geography Department would also like to capture students who successfully complete one or more geography courses as geography majors. In other words, the Geography Department endeavors to increase the number of Geography degrees awarded, as well as number of students who transfer into four-year geography degree programs. As evidenced by the low number of Geography AS degrees awarded at SBVC, while large numbers of students enroll in geography courses, few become geography majors. Recruitment of additional geography majors, especially from our over- and underrepresented cohorts, would greatly benefit our students with additional transfer and career options. To this end, the Geography Department has regularly revised its curriculum and offers an AA-T degree.

The larger discrepancy in African-American, Hispanic, Female, Male, Students with Disabilities, Age 20 to 24, and Age 25 to 29 cohorts may reflect the relative invisibility of geography as a subject within feeder high schools. For traditional high school to college populations, the invisibility of geography as a viable major, degree option, and career choice may limit enrollment in SBVC geography courses. In addition:

- Some cohorts may enter college better prepared than other groups. If this is the case, then they may choose physical and social science courses that are perceived as more rigorous. In other words, if these cohorts are better prepared in terms of basic skills development, then they may assess at a higher level within English and mathematics. They may also feel that their career prospects are better within other fields (e.g. astronomy, biology, chemistry, geology, physics, as well as social science and humanities fields).
- The Geography Department may need to better target recruitment and advertising efforts toward these cohorts. At the same time, the department must balance continued service to overrepresented cohorts.

As with the Geography program, the GIS program could increase representation by Hispanic, Female, and Students with Disability cohorts. Exposing students to geospatial technologies while enrolled in other geography courses (where these demographic groups are overrepresented), is one way to increase participation. Each semester, we offer an average of 10 sections (face-to-face and online) of Physical Geography Lecture and 6-7 sections of Physical Geography Lab. By integrating geospatial exercises into these existing courses, we can increase awareness of the GIS program. Other opportunities include scheduling a panel discussion on jobs in GIS, hosting the local Inland Empire GIS User group meeting, increasing Geography Awareness week activities, and marketing the Geography Club.

GIS can benefit from participating in STEM (Science, Engineering, Technology and Mathematics) related events geared at attracting underrepresented minorities and females. One example is the annual SBVC

Women in Mathematics and Science event. By increasing exposure to geospatial technologies and educating our students on the growing geospatial job market, we may see more participation by underrepresented groups.

Developing stronger partnership with local high schools may also increase participation. Colton High School has a GIS course that articulates to our GIS 130 course. Talking with students about GIS related job opportunities and the required educational pathways should garner interest. In addition, GIS faculty have begun to attend local high school career fairs as a way to inform the community about our GIS program.

The GIS program is currently receiving Perkins Grant funding and will receive Strong Workforce Grant funding (beginning in the 2019-20 academic year). Some of this funding is directed towards marketing to the resident SBVC population, as well as feeder high school and other (traditionally underrepresented) populations.

Pattern of Service:

Describe how the pattern of service and/or instruction provided by your department serve the needs of the community. Include, as appropriate, hours of operation/pattern of scheduling, alternate delivery methods, weekend instruction/service.

Both Geography and GIS programs offer a variety of schedules to meet the needs of traditional and working students:

Geography:

- Monday and Wednesday:
  - 8:00 to 9:15 am,
  - 9:30 to 10:45 am,
  - 11:00 am to 12:15 pm,
  - 4:00 to 5:50 pm (late-start), and
  - 6:00 to 8:50.
- Tuesday and Thursday:
  - 8:00 to 9:15 am,
  - 9:30 to 10:45 am,
  - 11:00 am to 12:15 pm,
  - 4:00 to 5:50 pm (late-start), and
  - 6:00 to 8:50.
- Friday:
  - 9:00 to 12:50 pm (late-start), and
  - 1:00 to 4:50 pm (late-start).
- Online:
  - Full-term, and
  - Late-start.

Geography:

In addition to providing traditional face-to-face lecture and laboratory courses, the Geography Department has provided interactive television (ITV) GEOG 110 sections within the past three years, most recently during the spring 2019 semester. Beginning with the fall 2018 semester, GEOG and GIS 100 and 130 have been offered in an online, eight-week format. Students have the option to complete 100 and 130 sections during the first or second half of both fall and spring semesters. Because many other geography courses are approved for distributed education (DE), additional sections are offered in a hybrid or fully online format. For example, GEOG 102, 106, 110, and 120 have been offered online (typically late-start) during the fall and spring semesters. This provides the opportunity to increase access for working students, single parents, students living outside of our traditional service area, and those with limited mobility.

GIS:

Beginning in the fall 2018 semester, all GIS courses, with the exception of the GIS 039: Global Positioning Systems (GPS) Field Techniques, GIS 098: GIS Work Experience, and GIS 222: Independent Study in GIS, have been offered in an eight-week, fully online format. This appears to have increased participation in the entry level courses – GIS 100 and 130 (cross-listed as GEOG 100 and 130) – and consequently appears to have increased enrollment in advanced-level GIS sections. This is because GIS (and GEOG) 130 is a prerequisite for many subsequent GIS courses within the GIS Certificate (e.g. GIS 133, 134, and 135). Currently, GIS students have the opportunity to complete the 19-unit certificate within two semesters, if they begin in the summer or fall semester (e.g. students begin in the summer or fall semester and complete the GIS Certificate in the following spring semester). Furthermore, the Geography-GIS Department believes this short-term, online format will provide flexibility for working individuals, single parents, and other underrepresented (and under-employed) populations. Instead of coming to campus once per week or more, they will complete the majority of the work when and where it best fits into their schedule. This will reduce the travel time to and from campus, which may be an attractive option for those who travel by public transportation.

We are using some of the current Perkins Grant (and future Strong Workforce Grant) funds to create geospatial vignettes which can then be used to educate students previously unaware of geospatial technology. In addition, Perkins funds were used to purchase IPADs and notebook computers for the GIS program. This technology provides access to work place technology and helps to better prepare our students.

Plans and activities to recruit and retain over- and underrepresented cohorts within Geography and GIS include:

- Continue to develop grant and other non-credit-type programs – especially within the science, technology, engineering, and mathematics (STEM) areas – in order to attract underrepresented populations (both GEOG and GIS, for example grants targeted to Hispanic Serving Institutions (HSIs)).
- Utilize the Geography Club (and perhaps create a GIS Club) to attract students in an extracurricular framework.
- Participate more fully within “Women in Science” and “Science Day” events.
- Better incorporate over- and underrepresented populations within “Geography Awareness Week” and “GIS Day” events.
- Invite speakers from off campus who will better appeal to over- and underrepresented groups. Specifically, these speakers can present on topics of geography undergraduate and graduate degree programs, as well as careers within the geographical sciences.
- Cultivate partnerships with the District Applied Technology and Training Center (ATTC) and Professional Development Center (PDC) to develop workforce preparedness and college preparedness programs. This will be especially helpful for students interested in the GIS program and careers.
- Expand focus and recruitment for geography and GIS majors and related careers within elementary, middle school, and high school outreach events.
- Emphasize the broad applicability of geography and GIS to myriad social and natural science majors and careers – including law, marketing, environment, real estate, computing, transportation, and planning – within the following venues: part of the classroom curriculum, on- campus outreach events, off-campus outreach events, credit and non-credit courses and summer grant programs, workshops, and other means.
- Utilize current (and future) information technologies and platforms, including: school and department websites, *Canvas*, *iTunes U*, *Facebook*, podcasts, *YouTube*, *Google Earth* and other means.
- Invite students to participate in local and regional professional geography conferences (e.g. California Geographical Society (CGS), Association of Pacific Coast Geographers (APCG), Associated of American Geographers (AAG), Inland Empire GIS User Group, and ESRI International User Conference.

Part II: Questions Related to Strategic Initiative: <u>Promote Student Success</u>

Goal: SBVC will increase course success, program success, access to employment, and transfer rates by enhancing student learning.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Data/Analysis demonstrating achievement of instructional or service success	Program **does not provide an adequate analysis** of the data provided with respect to relevant program data.	Program **provides an analysis** of the data which indicates progress on departmental goals.	In addition to the meets criteria, the program **uses the achievement data** in concrete planning and **demonstrates** that it is prepared for growth.
Service Area Outcomes and/or Student Learning Outcomes and/or Program Level Outcomes	Program **has not demonstrated** that it is continuously assessing Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs) based on the plans of the program since their last program efficacy. Evidence of data collection, evaluation, and reflection/feedback, and/or connection to area services is **missing or incomplete**.	Program **has demonstrated** that it has fully evaluated within a four-year cycle and is continuously assessing all Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs).	In addition to the meets criteria, the program **demonstrates that it has fully incorporated Service Area Outcomes (SAOs) and/or Student Learning Outcomes (SLOs) and/or Program Level Outcomes (PLOs) into its planning, made appropriate adjustments, and is prepared for growth**.

Student Success:

Provide an analysis of the data and narrative from the program's EMP Summary and discuss what it reveals about your program. (Use data from the Charts that address Success & Retention and Degrees and Certificates Awarded")

Geography:

During the past five academic years, overall success and retention rates have improved. The number of Geography AS degrees has remained low (ranging from two to five per academic year). Overall enrollment and efficiency decreased from 2013-14 through 2016-17. Enrollment and efficiency increased from 2016-17 to 2017-18. While one academic year (and associated increase) does not represent a trend, the increase in online enrollment (17 to 21 percent) may be a contributing factor. Preliminary, unofficial EIS data from the fall 2018 and spring 2019 semesters indicate increased duplicated student enrollment within the Geography program (1,016 students, versus 955 students for the 2017-18 academic year).

From the attached Geography EMP document, the following goals are meant to increase student success, retention, and degree completion:

- Continue to advocate and support funding for a Geography SI/tutor, including the capacity to host online tutoring for the increased number of online sections.
- Increase the number of degrees awarded under the new AA-T degree and revised AS degree:

    - Beginning with academic year 2014-15, students have had the option to complete a geography transfer degree, an AA-T.
    - In addition to offering the Geography AA-T, the existing AS degree has been revised.
    - These new and revised options have the potential to increase AA-T and AS degree attainment.
- Collaborate with other departments to offer service-based learning opportunities:
    - Because the Geography and GIS Departments have been diligently working on multiple goals, progress on this important goal has been limited.
    - During future semesters, the departments will work with other departments within Science and other divisions that have successfully created service based learning opportunities.
    - Service based learning opportunities not only have the potential to increase student success and retention, but also better prepare students for transfer and future careers.
- Develop learning communities with other disciplines, as well as support for tutors and SI leaders:
    - The Geography Department has been fortunate to include a tutor for the past five academic years. The tutor is presently funded through SBVC institutional funding. Although anecdotal, the tutor seems to have increased student enrollment, retention, and success, especially for those students who regularly seek tutorial support.
    - The department has been in intermittent dialogue with English faculty and the First Year Experience (FYE) Program in order to create a learning community. This community may be in place by the spring 2020 semester.
- Increase the number of funded field trips and maintain laboratories with equipment and supplies needed for quality education:
    - The Geography and GIS programs regularly participate in the annual Program Review Needs Assessment process. Through this vehicle, both programs have increased field trip, instructional, non-instructional, and equipment budgets. However, much more progress must be made for these important line items.
    - Additional funding has been made available through special, intermittent one-time funding vehicles. However, these programs are ephemeral by nature and both programs seek more stable funding platforms.
- Identify study abroad opportunities:
    - The Geography Department will continue to coordinate with the SBVC Study Abroad Program to resurrect the SBVC study abroad program in Costa Rica.
    - Continue to participate in the Citrus-College-based (Foothill Consortium) Study Abroad program dialogue (e.g. fall semester in London and spring semester in Salamanca).
- Cultivate relationships with four-year institutions and area employers as a means to increase transfer and career opportunities:
    - The Geography Department participates in Cal State-San Bernardino “open house” and “bridge” programs. These programs exist in order to facilitate transfer from SBVC to CSU-SB. The student Geography Club organizations from both institutions have also been collaborating as a means to increase the number of Geography majors, degrees awarded, and overall success and retention.
- Outreach beyond CSU-SB must occur, and the Geography Department is cultivating contacts at other CSU, UC, and private four-year institutions.
- Greater contact between ESRI (a major area employer of geography and GIS graduates) and SBVC is occurring. However, additional inroads must be made with other area and regional employers.

GIS:

In general, the GIS success, retention, enrollment, and efficiency rates have decreased during the past five years. Nonetheless, we can help more students succeed by providing open lab hours (access to computers and tutors, including online tutoring) and short instructional videos for completing common tasks. Preliminary, unofficial EIS data from the fall 2018 and spring 2019 semesters indicate increased duplicated student enrollment within the GIS program (194 students, versus 74 students for the 2017-18 academic year).

As a department, we have identified the following educational goals:

- Departmental Goal: Build on existing faculty, curricular, institutional, and industry relationships to increase student success, retention, enrollment, transfer, and career placement.
    - We have a solid Advisory board made up of local employers, some of whom host interns. A more focused effort is needed to recruit employers as potential internship sites. In addition, inviting these companies to speak in panel discussions will help students secure intern and job placements, when and if something becomes available. In addition, students are more likely to finish the certificate, if we increase career placement opportunities.
    - Largely based on advisory board input, the GIS Certificate can now be completed online and within two semesters (provided that students begin in the summer or fall semester and successfully complete all courses in the GIS sequence by the following spring semester). Anecdotal evidence suggests that enrollment for the current 2018-19 academic year will greatly exceed the 2017-18 enrollment.
- Departmental Goal: Raise funds for GIS tutors and SI leaders to extend lab hours via grants, including online-mediated tutoring (to accommodate the majority of online GIS courses and students).
    - Current and future Perkins and Strong Workforce Grants will provide funding for a GIS tutor.
    - GIS as a technology must be practice. While the software is available on library computers, the lack of a knowledgeable tutor or student employee makes completing the labs difficult.
    - Extend the open lab hours will provide more access to students and in return help students succeed.
    - Offer tutoring in an online capacity and environment, in order to accommodate the majority of online GIS sections and students.
    - Notebook computers that have been purchased with prior grant and one-time institutional funding will allow GIS students to work on projects in a variety of campus locations.
- Departmental Goal: Hire a full-time GIS faculty member:
    - An additional component that has the potential to increase student success and retention is to continue lobbying Program Review and related official processes in an effort to hire a full-time GIS faculty member. Alternatively, a full-time faculty member split between Geography and GIS programs would be beneficial. At present, with the exception of one section, there is no full-time faculty support for the GIS program. Although our adjunct GIS faculty represent industry experts, they cannot guarantee long term stability and support for the GIS program. Equally, it is difficult (and unfair) to ask adjunct faculty to develop long term strategies to ensure student success and retention, including advertising and recruitment. A full-time faculty member would be able to devote considerable time, thought, and action toward these endeavors.
- Departmental Goal: Continue collaboration with other community college and four-year geography and GIS departments:
    - Continue the dialog established with faculty chairs and faculty members within geography and GIS departments at area community colleges and four-year institutions in order to ensure appropriate curriculum development, improve transfer rates, and improve employability.
- Departmental Goal: Continue grant exploration and development to supplement declining budgets:
    - Using Perkins funding, we have been able to compensate adjunct faculty for developing teaching vignettes, participating in career fairs and panel discussions. We believe that these activities will increase student retention and success. Future Strong Workforce funding should achieve a similar goal.
    - Exploring STEM related grants especially as they pertain to women in science, will also provide additional support for success and retention.
- Departmental Goal: Collaborate with other departments in order to develop interdisciplinary courses:
    - Learning communities (e.g. based on models including First Year Experience, Tumaini, Puente, and Valley Bound), supplemental learning (e.g. tutoring and workshops), and

interdisciplinary – including team-taught – courses could also be included in a multifaceted effort to improve student success and retention.

Supplemental Data:

Provide any additional information, such as job market indicators, standards in the field or licensure rates that would help the committee to better understand how your program contributes to the success of your students.

Available career paths for those with AS, BS, and BA Degrees within Geography and GIS may include (source: Association of American Geographers: Association of American Geographers, Jobs & Careers Website, Salary Data and Trends, http://www.aag.org/cs/salary_data_and_trends/salary_data_and_trends_overview (accessed 03/17/2019).

- Educator (secondary education and higher education),
- City/Urban Planner,
- Soil and Plant/Water Resources Specialist,
- Climatologist/ Atmospheric Scientist,
- Environmental Analyst/Director/Planner/Specialist/ Technician,
- Geospatial Analyst/Coordinator/Manager/Programmer/ Technician,
- GIS Analyst/Coordinator/Manager/Programmer/ Technician,
- Emergency Management Specialist,
- Forest Fire Inspector,
- Marketing Manager,
- Physical Scientist,
- Policy Analyst,
- Regional Director,
- Transportation Planner,
- Epidemiologist/Medical Geographer, and
- Demographer/Census Data Analyst.

Our Geography and GIS programs prepare students for these careers primarily by preparing them for transfer into four-year degree programs. However, our GIS certificate program also prepares students for entry-level GIS technician positions. While students are encouraged to complete a four-year (or even graduate-level) GIS degree, they learn skill sets that prepare them for employment as technicians within private consulting firms (e.g. environmental consulting firms) and public sector (e.g. San Bernardino County, US Forest Service, and San Bernardino City Unified School District). In addition, students are encouraged to enroll in the GIS 098: GIS Work Experience course. Within this course, students work in an internship environment that better prepares them for future careers within the broad fields of geography and GIS.

Standards in the Field:

Students majoring and pursuing careers within the fields of Geography and GIS should remain aware of:

- Geographic terminology (within Human and Physical Geography),
- Geospatial software and technology (GIS, GPS, Remote Sensing and Google Earth),
- Social, political, and economic changes, as they impact the environment, and
- Geopolitics

Licensure Rates:

Geographers and GIS technicians and analysts are not required to possess licenses, per se, within the State of California. However, related fields, including: real estate, surveying and civil engineering, landscape architecture, and law practice require licensure and registration. In addition, ESRI (Environmental Systems Research Institute), supplier of world-class GIS software (including the ArcGIS desktop and online software used within the SBVC GIS Certificate program), has begun GIS certification. We are collaborating closely with ESRI to ensure that our GIS Certificate graduates are equipped with the skills necessary to successfully pass the entry-level certification. In addition, we hope to utilize grant funding to defray the costs associated with the entry-level certification.

GIS professionals can obtain GISP recognition. According to the GISCI website(www.gisci.org):

"The **GIS Certification** Institute (GISCI) is a tax-exempt, not-for-profit organization that provides the geographic information systems (GIS) community with a complete certification program, leading to GISP®

(Certified GIS Professional) recognition. GISCI offers participants around the world, from the first early years on the job, until retirement, a positive method of developing value for professionals and employers in the GIS profession. We offer the only industry-wide, internationally-recognized, software-agnostic Certification available to geospatial professionals around the world. "

Students completing the GIS Certificate program may find attending a panel discussion on this topic beneficial. Another opportunity to assist our students would be to help them find a GISP mentor. Eventually, the GIS department may consider offering courses as part of the educational component of this certification.

Advisory Committee Recommendations:

The GIS Advisory Committee consists of the following members: ESRI in Redlands, CSU-San Bernardino Geography (and GIS and Environmental Studies) Department, US Forest Service (field office in San Bernardino), County of San Bernardino Geographic Information Management Services (GIMS), Colton-Redlands-Yucaipa ROP (Regional Occupational Program), San Bernardino City Municipal Water District, SBVC Water Supply Technology (WST) Department, SBVC Architecture and Environmental Design Department, SBVC Office of Research, Planning, Development, and Grants, and Air Quality Management District (AQMD), Riverside County Flood Control, Cal Fire, Foundation for Sustainable Communities, San Bernardino City GIS, Western Municipal Water District, City of Rancho Cucamonga, and Rancho California Water District . The next advisory committee meeting will be held during the spring 2019 semester.

Current recommendations include continued curriculum revisions in order to capture the latest employment trends, expansion of distributed education (DE) opportunities so that students can complete the entire 19-unit certificate online and in a timely (two semester) manner, student participation in professional organizations, creation of a GIS AA/AS degree, and expansion of the work experience/internship program to include paid and unpaid positions.

(INSERT SLO and/or SAO and PLO DATA as appropriate FROM CURRENT REPORT. INSERT COURSE MAP IF AVAILABLE. Refer to prior reports as needed for the analysis.) (Contact Dr. Celia Huston, Co-Chair, Accreditation Committee, at chuston@valley.edu if you need assistance.) **NOTE: Do NOT include the summaries of the outcomes in this document.**

Student Learning Outcomes:

Course SLOs/SAOs. Demonstrate that your program is continuously assessing Course Student Learning Outcomes (SLOs) and/or Service Area Outcomes (SAOs). Include evidence of data collection, evaluation, and reflection/feedback, and describe how the SLOs/SAOs are being used to improve student learning (e.g., faculty discussions, SLO revisions, assessments, etc.). Generate reports from the Cloud as necessary. Include analysis of SLO/SAO Cloud reports and data from summary reports. This section is required for all programs.

GEOG-GIS Course SLO Assessment Table:

Course:	SLO Regularly Assessed:	Notes:	3-Year Data of % Students Meeting SLOs:
GEOG 100: Map Interpretation and Intro to Geospatial Technologies	Yes	Cross-listed as GIS 100.	56-60%
GEOG 102: Cultural Geography	Yes		82-87%
GEOG 106: Geographic Perspectives on the Environment	Yes		100% (small sample size, as course has only recently been taught).
GEOG 110: Physical Geography Lecture	Yes		75-82%
GEOG 111: Physical Geography Laboratory (including Honors)	Yes		80-83%
GEOG 114: Weather and Climate	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	SLOs will be assessed in the SP ’19 semester.
GEOG 118: California Geography	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	Typically offered once per year. Course has only recently been taught, after an absence of several years.
GEOG 120: World Regional Geography	Yes		87-89%
GEOG 130: Introduction to GIS	Yes	Cross-listed as GIS 130.	43-88%
GEOG 222: Independent Study in Geography	No	Typically offered by demand only (not every semester).	This is an on-demand course that is infrequently offered.
GEOG AS Degree	Yes		79-80%
GEOG AA-T Degree	Yes		79%

GIS 039: GPS Field Techniques	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	SLOs will be assessed in the SP '19 semester.
GIS 098: GIS Work Experience	Yes	Typically offered by demand only (not every semester).	100% (small sample size).
GIS 100: Map Interpretation and Intro to Geospatial Technologies	Yes	Cross-listed as GEOG 100.	70-72%
GIS 130: Introduction to GIS	Yes	Cross-listed as GEOG 130.	69-81%
GIS 133: GIS Cartography and Base Map Development	Yes		90-93%
GIS 134: Data Acquisition and Management	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	SLOs will be assessed in the SP '19 semester.
GIS 135: Spatial Analysis with GIS	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	SLOs will be assessed in the SP '19 semester.
GIS 136: GIS for Science, Government, and Business	No	This course is infrequently offered, but may be offered once per year, as demand increases.	SLOs will be assessed when this course is next offered.
GIS 137: GIS Advanced Applications	No	Typically offered once per year. Course has only recently been taught, after an absence of several years.	SLOs will be assessed in the SP '19 semester.
GIS 222: Independent Study in GIS	Yes	Typically offered by demand only (not every semester).	100% (small sample size).
GIS Certificate Program	Yes		72-91%

The three-year data (right-hand column) includes the most recent three academic years. Please note that the range in percentages includes multiple SLOs for each course and program. The missing data may be

explained by courses that are infrequently offered, including courses that are currently offered after a long absence (e.g. GEOG 114, GEOG 118, GEOG 222, GIS 039, GIS 134, GIS 135, GIS 136, and GIS 137). Some of these courses have been repeatedly canceled as a result of low enrollment during recent semesters. In addition, faculty occasionally fail to report SLO data to the online *SLO Cloud* system. Efforts will be redoubled this semester to counsel faculty to regularly report SLO data for each section during every semester, including summer.

During pre- and post-semester department meetings, GEOG and GIS faculty regularly discuss SLO and PLO data. There are ongoing discussions aimed at improving (editing, adding, and subtracting) individual course SLOs. For courses with multiple sections (e.g. GEOG/GIS 100, GEOG 110, GEOG 111, and GEOG/GIS 130), a common assessment instrument has been discussed as a means to improve SLO assessment consistency across multiple instructors and semesters.

As a result of SLO assessment, lecture and laboratory exercises, assignments, quizzes, and exams have been reevaluated and retooled. This has also informed discussions about greater student access and success, including offering face-to-face, hybrid, and online formats, as well as greater participation in the Zero Textbook Cost (ZTC) program.

Program Level Outcomes:

If your program offers a degree or certificate, describe how the program level outcomes are being used to improve student learning at the program level (e.g., faculty discussions, SLO revisions, assessments, etc.). **Describe** how this set of data is being evaluated or is planned to be evaluated. Generate reports from the SLO Cloud as necessary. Include analysis of SLO Cloud reports and data from 4-year summary reports. If your program does not offer a degree or certificate, this section is optional (but encouraged).

Geography AS and AA-T Degree Course Map:

	Geography AS/ AA-T Degree	Demonstrate expertise in basic cartographic principles, including map location, scale, and distortion.	Integrate fundamentals of sociology, biology, chemistry, physics, geology, and other social and natural sciences within a spatial network of human-environment interactions.	Interpret spatial patterns, as indicated on maps, and utilize tabular and textual information as a means to produce basic maps
CLASSES				
GEOG 102			SLO #2	SLO #2
GEOG 110		SLO #2	SLO #3	SLO #3
GEOG 111/111H		SLO #2		
Select 6 - 7 Units				
GEOG 100 / GIS 100		SLO #2 and SLO #3		SLO #2 and SLO #3
GEOG 114			SLO #3	SLO #3
GEOG 118		SLO #1	SLO #2	SLO #1
GEOG 120			SLO #1 and SLO #2	SLO #1 and SLO #2
GIS 130		SLO #3		SLO #1, SLO #2, SLO #3

Select 6 Unit				
ANTHRO 102				
ENG 102/102H				
GEOL 101				
GIS 133		SLO #1, SLO #2, SLO #3		SLO #1, SLO #2, SLO #3
OCEAN 101				
OCEAN 111				
POLIT 141				

GEOG AS and AA-T Degree Three-Year Program Summary Report:

Program Summary Report

Year 2018 - 2019 **Period** Last 3 Years

Program Geography AS Degree

Tools

Program SLOs

Note: Program SLO Summary Evaluation Form is available..

Note: These contain duplicated head count. A student can be counted once for each statement in a SLO, and for each class they took.

#	SLO Statement	# of Students Assessed	# of Students who Met SLO	% of Students who Met SLO
1	Demonstrate expertise in basic cartographic principles, including map location, scale, and distortion.	6511	5192	79.74%
2	Integrate fundamentals of sociology, biology, chemistry, physics, geology, and other social and natural sciences within a spatial network of human-environment interactions.	4853	3846	79.25%
3	Interpret spatial patterns, as indicated on maps, and utilize tabular and textual information as a means to produce basic maps.	4853	3846	79.25%
4	N/A			

For the Geography AS and AA-T Degrees, a variety of methods are utilized to evaluate the individual course-level and program-level SLOs. These include assignment, laboratory exercise, quiz, and examination questions, as well as related standardized testing modalities. Faculty are given wide latitude (no pun intended) to evaluate, assess, and report SLOs. Pre- and post-semester faculty meetings (including full- and part-time faculty) include productive SLO discussions.

Although the three-year program-level SLO assessment for the Geography AS and AA-T Degrees demonstrates that an average of 79 percent of students meet the three mapped SLOs, improvement can always occur. This can occur through redesign of the SLOs themselves, as well as the means by which SLOs are taught and assessed. Standardized SLO assessment tools may be implemented during future semesters for courses where multiple sections are taught each semester (e.g. GEOG/GIS 100, GEOG 110, GEOG 111, and GEOG/GIS 130).

As previously noted, SLO and PLO discussions among faculty have resulted in the use of new teaching methods and modalities, including online and hybrid formats, the flipped classroom model, and creation of new exams, quizzes, assignments, and laboratory exercises. SLO and PLO discussions also dovetail nicely with discussions of the Zero Textbook Cost (ZTC) Program, AB 705, and Guided Pathways.

GIS Certificate Course Map:

	Geographic Information Systems Certificate	Entry-level technician in the field of GIS, automated cartography (geoinformatics/geo-visualization), and remote sensing for science, government, and business applications.	Scanning, hand-digitizing, and collecting global positioning systems (GPS) cartographic data as a means to create a base map,	Entering textual and numerical information as a means to create a tabular database,	Integration of raster data layers, including remotely sensed imagery, and vector data layers, including points, lines, and polygons, and	Basic GIS map analysis, including descriptive spatial statistics, inferential spatial statistics, and spatial autocorrelation
CLASSES						
GIS 039		C or better in Entry Level Courses		SLO #1	C or better	
GIS 098		C or better in Entry Level Courses		SLO #1		
GEOG/GIS 100		C or better in Entry Level Courses	SLO #1		SLO #3	
GIS 130		C or better in Entry Level Courses		SLO #1	C or better	
GIS 133		C or better in Entry Level Courses	SLO #2		C or better	
GIS 134			SLO #1	SLO #2		
GIS 135					C or better	SLO #1
GIS 136						
GIS 137		C or better in Entry Level Courses				SLO #2
GIS222						

GIS Certificate Program Summary Report:

Program Summary Report

Year 2018 - 2019 **Period** Last 3 Years

Program Geographic Information Systems Certificate

Tools

Program SLOs

Note: Program SLO Summary Evaluation Form is available..

Note: These contain duplicated head count. A student can be counted once for each statement in a SLO, and for each class they took.

#	SLO Statement	# of Students Assessed	# of Students who Met SLO	% of Students who Met SLO
1	Entry-level technician in the field of GIS, automated cartography (geoinformatics/geo-visualization), and remote sensing for science, government, and business applications.	367	266	72.48%
2	Scanning, hand-digitizing, and collecting global positioning systems (GPS) cartographic data as a means to create a base map,	91	83	91.21%
3	Entering textual and numerical information as a means to create a tabular database,			
4	Integration of raster data layers, including remotely sensed imagery, and vector data layers, including points, lines, and polygons, and	298	235	78.86%
5	Basic GIS map analysis, including descriptive spatial statistics, inferential spatial statistics, and spatial autocorrelation.			

For the GIS Certificate, a variety of methods are utilized to evaluate the individual course-level and program-level SLOs. These include assignment, laboratory exercise, quiz, and examination questions, as well as related standardized testing modalities. Faculty are given wide latitude (no pun intended) to evaluate, assess, and report SLOs. Pre- and post-semester faculty meetings (including full- and part-time faculty) include productive SLO discussions.

Although the three-year program-level SLO assessment for the GIS Certificate demonstrates that a range of 72 to 91 percent of students meet the three mapped SLOs, improvement can always occur. This can occur through redesign of the SLOs themselves, as well as the means by which SLOs are taught and assessed. Standardized SLO assessment tools may be implemented during future semesters for courses where multiple sections are taught each semester (e.g. GEOG/GIS 100, GEOG 110, GEOG 111, and GEOG/GIS 130).

It must be noted, and is glaring in its absence, that SLO 3 and 5 have neither been appropriately mapped nor assessed. This will necessitate a radical change and update during future semesters and academic years. Either these SLOs will need to be appropriately mapped (linked) and assessed, or they will need to be eliminated from the PLO assessment.

As previously noted, SLO and PLO discussions among faculty have resulted in the use of new teaching methods and modalities, including online and hybrid formats, the flipped classroom model, and creation of new exams, quizzes, assignments, and laboratory exercises. SLO and PLO discussions also dovetail nicely with discussions of the Zero Textbook Cost (ZTC) Program, AB 705, and Guided Pathways.

Part III: Questions Related to Strategic Initiative: Improve Communication, Culture & Climate

Goal: SBVC will promote a collegial campus culture with open line of communication between all stakeholder groups on and off-campus.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Communication	The program **does not identify** data that demonstrates communication with college and community.	The program **identifies** data that demonstrates communication with college and community.	In addition to the meets criteria, the program **demonstrates** the ability to communicate more widely and effectively, **describes** plans for extending communication, and provides data or research that **demonstrates** the need for additional resources.
Culture & Climate	The program **does not identify** its impact on culture and climate or the plans are not supported by the data and information provided.	The program **identifies and describes** its impact on culture and climate. Program **addresses** how this impacts planning.	In addition to the meets criteria, the program provides data or research that **demonstrates** the need for additional resources.

Communication, Culture & Climate:

Describe how your program communicates its services, goals, and achievements to the campus and to the Community (outreach, events, website, campus emails, flyers, etc.).

Communication:

- Both programs advertise within the face-to-face and online classroom environments (e.g. faculty create hands-on projects that incorporate basic GIS concepts as a means to increase awareness and enthusiasm for individual GIS courses, as well as GIS Certificate program).
- Both programs have web pages within the SBVC website.
- Both programs have a Facebook page administered by one or more faculty within each discipline.
- Both programs respond to student inquiries through the “Request Information” link via SBVC website.
- Both programs participate regularly in campus-wide events, including “Science and Technology Day,” high school counselor events, and related STEM activities.
- Both programs participate in off-campus high school outreach events.
- The GIS program hosts occasional grant-funded workshops.
- The GIS program has a flyer that is currently being edited.
- The GIS program is completing a marketing video in concert with the Empire Network, a regional NPR affiliate.

Describe how your program seeks to enhance the culture and climate of the college.

Campus Culture and Climate:

- Both programs can contribute to campus safety and planning through collection and publication of global positioning system (GPS) and GIS data. For example, students from both programs can provide input and cartographic products for planning for future walkways, bicycle racks, parking lots, lighting, trashcan placement, smoking areas, and other campus features. Indeed, students and faculty have already shared some of these products with appropriate campus administrators and committees.
- The Geography Club and future GIS Club will coordinate with other SBVC student organizations in support of a variety of endeavors, including Red Ribbon Week, Health Fair, Science Day, Women in Science Day, Geography Awareness Week, GIS Day, and hosting on- and off-campus elementary, middle, and high school outreach events.
- The Geography and GIS Departments will continue outreach to other programs on campus. This will not only strengthen Geography and GIS but also partner programs. For example, basic geographic literacy and GIS skills are integral to any number of biology, environmental

science/studies, marketing, police science, public health, political science, and social science programs.
- Both programs regularly participate in annual on-campus “Horror Film Fest” and “International Film Fest” events.
- Faculty serve on the Program Review and Professional Development Committees.
- Faculty serve on the Zero Textbook Cost (ZTC) Committee, including leadership roles.
- Selected part- and full-time faculty utilize ZTC resources within their classes.

Describe one or more external/internal partnerships.

GEOG and GIS Partnerships:

- Partnerships with professional organizations, including Association of American Geographers (AAG), Association of Pacific Coast Geographers (APCG), California Geographical Society (CGS), Inland Empire GIS User Group, and ESRI (Environmental Systems Research Institute, a leading producer of industry-standard GIS software) will continue to benefit the programs, students, and faculty. Relationships with these organizations serve to maintain curricular currency and provide students with career and transfer opportunities.
- Partnerships with the San Bernardino County Geographical Information Management Services (GIMS) and US Forest Service allow for input into curricular development, as well as continued provision of internship opportunities for students.
- Partnerships with SBVC and District entities, such as Science Division and departments within the division, Student Success Center, Research and Planning Office, Geography Club, and Economic Development and Corporate Training (EDCT) Division (formerly known as the ATTC), will continue to foster program growth through academic and career development.
- Partnerships with the South Coast Air Quality Management District (AQMD), specifically on the topics of GIS/GPS air quality monitoring on and off campus, as well as socially and politically salient environmental justice issues.

What plans does your program have to further implement any of these initiatives?

Geography Planning:

One-year plan:

- Continue and strengthen partnerships with ESRI and four-year transfer institutions.
- Continued participation in “Science and Math Day,” “Women in Science and Math,” “Men in Science and Math,” and “Super Saturday” on-campus activities.
- Continue and increase participation in regional high school recruitment off campus.
- Regularly offer (at least once per academic year) an expanded lineup of courses, including: GEOG 100, 102, 106, 110, 111, 114, 118, and 120.
- Offer online, hybrid, and ITV versions of the following courses: GEOG 100, 102, 106, 110, 114,118, and 120.
- Inclusion of the Geography Department within future STEM, MESA, HSI, and Title V grants.
- Partnership with the American Meteorological Service (AMS) within the “Minority Scholarship” and online “Weather Studies” programs.

Three-year plan:

- Continue to lobby for hiring an additional full-time, tenure-track faculty member (perhaps 50% Geography and 50% GIS).
- Regularly offer the GEOG 111H honors Physical Geography laboratory course.
- Write curriculum to include honors sections for the GEOG 102 and 110 lecture courses.

- Expand outreach to include regional high school and adult education students.
- Continued expansion of Distributed Education (DE) offerings for the following courses: GEOG 102, 106, 110, 114, 118, and 120.
- Collaboration with the Science Division to submit a grant providing leadership and mentor training for our students, outreach efforts to local middle schools for "Science Saturday" workshops, and a summer bridge program for science and math success.

Five-year plan:

- Research and development of a grant to fund minority/underrepresented (and other) students to transfer into four-year Geography and Environmental Studies/Sciences programs.
- Creation of new topical courses, including Economic, Political, Urban, and Hazards/Natural Disasters courses.
- Development of one or more "study abroad" programs, beginning with the SBVC Costa Rica program.
- Continued collaboration – via professional conference, workshops, and bridge program – with community college and four-year institutions in terms of the development, articulation, and career development of courses.

GIS Planning:

One-year plan:

- Continue and strengthen partnerships with ESRI and four-year transfer institutions.
- Continued participation in "Science and Math Day," "Women in Science and Math," "Men in Science and Math," and "Super Saturday" on-campus activities.
- Continue and increase participation in regional high school recruitment off campus.
- Regularly offer (at least once per academic year) an expanded lineup of fully online courses, including: GIS 039, 098, 100, 130, 133, 134, 135, 137, and 222.
- Continue to grow the one-year accelerated GIS Certificate program, such that GIS students are able to complete the entire 19-unit certificate within two semesters.
- Leverage existing Perkins and Strong Workforce grants within future STEM, HSI, and Title V grants.
- Further integrate the GIS program into SBVC Emerging Technology and Green Technology plans.
- Begin student involvement within the ESRI entry-level GIS certification program.

Three-year plan:

- Continue lobbying for hiring an additional full-time, tenure-track faculty member (perhaps 50% Geography and 50% GIS).
- Expand outreach to include regional high school and adult education students.
- Collaboration with the Science Division to submit a grant providing leadership and mentor training for our students, outreach efforts to local middle schools for "Science Saturday" workshops, and a summer bridge program for science and math success.
- Build upon the success of the MOU (Memorandum of Understanding) with the San Bernardino County Geographic Information Management System (GIMS) and expanding paid and unpaid internship programs with other public and private agencies.
- Strengthen the SBVC-ESRI relationship so that GIS students can participate in internship and "job shadowing" programs.
- Coordinate with the Career and Transfer Center to assist student placement into internship (paid and unpaid) programs and four-year degree programs.
- Expand the one-year accelerated certificate program to include students who begin in the spring semester. At present, only students who begin in the fall semester are able to complete the GIS Certificate program within one year (two semesters).

Five-year plan:

- Continued expansion of Distributed Education (DE) offerings for GIS courses, possibly including the ITV format for Big Bear and other mountain community students.
- Research and develop a grant to fund minority/underrepresented (and other) students to transfer into four-year GIS and Geography programs and transition into related careers.
- Create a "field camp" and/or "study aboard" GIS immersion program. Expansion of combination and specialized GIS certificate programs, including Water Supply Technology, Architecture and Environmental Planning, and Real Estate programs.
- Incorporation of Computer Science (CS) and Computer Information Technology (CIT) courses into the GIS certificate program.
- Development of a fully transferable GIS Associate Degree (AS) program.

IV: Questions Related to Strategic Initiative: Maintain Leadership & Promote Professional Development

Goal: SBVC will maintain capable leadership and provide professional development to a staff that will need skills to function effectively in an evolving educational environment.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Professional Development	The program **does not identify** currency in professional development activities.	Program **identifies current avenues** for professional development.	In addition to the meets criteria, the program shows that professional development has **impacted/expanded** the program and **demonstrates** that the program is positioning itself for growth.

Professional Development:

1. Discuss the ways that members of your department maintain currency in their field (conferences, workshops, technical trainings, etc.).

Geography and GIS faculty regularly attend and participate in California Geographical Society (CGS), American Association of Geographers (AAG), Association of Pacific Coast Geographers (APCG), ESRI GIS User Conference, and Inland Empire GIS User Group conferences and workshops. In addition, faculty and students participate annually in the ESRI GIS Education Open House colloquia.

2. Identify the professional organizations that your department and/or department members belong to and how those organizations meet professional development parameters.

As noted above, selected Geography and GIS full- and part-time faculty belong to CGS, AAG, APCG, and Inland Empire GIS User Group professional organizations. Skills gleaned at these workshops and

conferences directly improve student learning and success, as well as contribute to dialogue among faculty within similar disciplines.

3. Discuss specific ways faculty and staff engage in professional growth (i.e. attend or present at conferences, establish training opportunities with other community colleges). Include future opportunities that are planned by faculty and staff. Discuss how professional development has impacted/expanded the program.

Faculty (and occasionally students) attend and present at a variety of local, regional, national, and international conferences and workshops. In addition, faculty dialogue with academic colleagues at a variety of California community colleges, Cal State campuses, and UC campuses. Faculty also contribute to advisory boards on and off campus, including Air Quality Management District (AQMD) and Safe Spaces programs.

Discipline-specific skills are oftentimes expanded by participation in these events. In addition, new teaching modalities and pedagogies are obtained and utilized.

V: Questions Related to Strategic Initiative: Effective Evaluation & Accountability

Goal: SBVC will improve institutional effectiveness through a process of evaluation and continuous improvement.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Mission/ Statement of Purpose	The program **does not have** a mission/ statement of purpose, or it **does not clearly link** with the institutional mission.	The program **has** a mission/statement of purpose, and it **links** clearly with the institutional mission.	
Productivity	The data **does not show** an acceptable level of productivity for the program, or the issue of productivity is not adequately addressed.	The data **shows** the program is productive at an acceptable level.	The program functions at a highly productive level and has planned for growth as appropriate.
Relevance, Currency, Articulation	The program **does not provide** evidence that it is relevant, current, and that courses articulate with CSU/UC, if appropriate. Out of date course(s) that were not launched into Curricunet by Oct. 1, 2017 may result in an overall recommendation no higher than Conditional.	The program **provides** evidence that the curriculum review process is up to date. Courses are relevant and current to the mission of the program. Appropriate courses **have been articulated** or transfer with UC/CSU, or **plans**	In addition to the meets criteria, the program **discusses plans** to enhance current course offerings that link to student/community needs and positions the program for improved student outcomes.

		are in place to articulate appropriate courses.	
Challenges	The program **does not incorporate** weaknesses and challenges into planning.	The program **incorporates** weaknesses and challenges into planning.	The program **incorporates** weaknesses and challenges into planning that demonstrate the need for expansion.

Mission and Purpose:

San Bernardino Valley College maintains a culture of continuous improvement and a commitment to provide high-quality education, innovative instruction, and services to a diverse community of learners. Its mission is to prepare students for transfer to four-year universities, to enter the workforce by earning applied degrees and certificates, to foster economic growth and global competitiveness through workforce development, and to improve the quality of life in the Inland Empire and beyond.

What is the mission statement or purpose of the program?

Geography:

The Geography program provides a path to students who wish to transfer to a CSU, UC, or private campus in Geography and serves the diverse needs of students who wish to obtain a broad and an in-depth understanding of the field. Additionally, this program allows students to examine the environmental and spatial science of geography including both physical and cultural landscapes across the Earth. Courses in Geography also prepare students interested in careers in environmental studies, education, engineering, urban planning, public health, sociology, political science, and architecture.

GIS:

The GIS Certificate is designed to provide the skills and knowledge necessary for immediate entry-level employment for persons interested in Geographic Information Systems (GIS) and automated mapping technology, utilizing earth resources data satellites, aerial photography, and computerized data banks of spatial data. Students working for certificates must have a basic knowledge of arithmetic, reading, and writing in order to learn and work in the occupations they select.

The GIS Certificate also provides a foundation for transfer to four year and graduate education within the fields of GIS, Geography, Remote Sensing, Environmental and Earth Sciences. Specifically, the GIS Program prepares students for careers in the fields of geography, geographic information systems (GIS), education, cartography, demography, surveying, transportation and logistics, real estate, marketing, law, epidemiology, environmental studies, and other positions that demand knowledge and interpretation of spatial patterns. In addition, GIS courses allow students to more fully comprehend real-world, everyday cultural and environmental phenomena and news events. Students are therefore better equipped to make informed life decisions.

How does this mission or purpose relate to the college mission?

Geography:

The mission of the College is to provide quality education to a diverse community of learners and is consistent with the purpose and mission of the Geography Department. The Department serves a diverse community of learners, as evidenced in its demographic data (please refer to the Demographic Information table in Part I). In addition, the Department adheres to the college vision statement by creating “informed, responsible, and active

members of society" and value statement where "students become self-sufficient learners and contributing members of society."

GIS:

The mission of the College is to provide quality education to a diverse community of learners and is consistent with the purpose and mission of the GIS Program. The Program serves a diverse community of learners, as evidenced in its demographic data (please refer to the Demographic Information table in Part I). In addition, the Department adheres to the college vision statement by creating "informed, responsible, and active members of society" and value statement where "students become self-sufficient learners and contributing members of society."

GIS students contribute to access, student success, technology, institutional effectiveness, and partnerships by working on real-world campus projects. For example, GIS students will continue to work with the Office of Institutional Research, Planning, and Grants and Facilities Management on projects that will benefit the entire Campus and District.

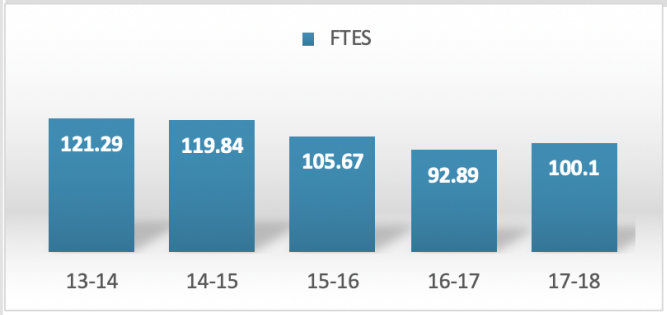
GIS also relates to broader community, regional, national, and global environmental (green) initiatives. According to Esri's *GIS Best Practices* : *GIS is a Green Technology* pamphlet –"GIS solutions are currently being implemented around the world that provide the technological and scientific support necessary to create programs and processes designed to return our planet to a more sustainable and balanced level of use."

Our program is educating tomorrow's worker who will help provide solutions for reducing communities' environmental impact, whether it is working for an environmental firm, helping a logistic company reduce mileage, or developing innovative applications.

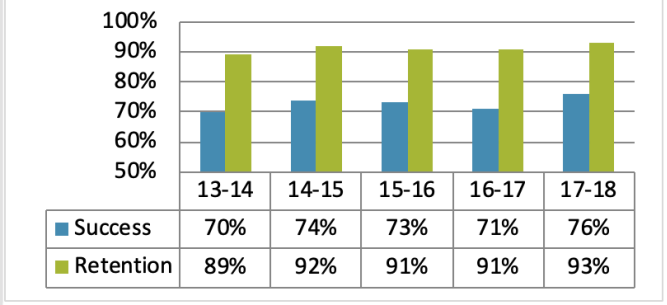
Productivity:

Provide additional **analysis and explanation** of the productivity data and narrative in the EMP summary if needed. Use data from charts (FTEs; Enrollment; FTFE and WSCH per FTFE). Explain any unique aspects of the program that impact productivity data, for example, Federal Guidelines, Perkins, number of workstations, licenses, etc.

Productivity within Geography:



	13-14	14-15	15-16	16-17	17-18
Duplicated Enrollment	1,179	1,157	1,015	903	955
FTEF	6.60	7.90	6.55	8.01	7.32
WSCH per FTEF	551	455	484	348	410



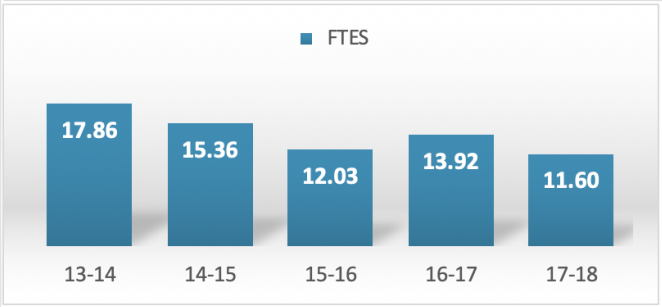
	13-14	14-15	15-16	16-17	17-18
Success	70%	74%	73%	71%	76%
Retention	89%	92%	91%	91%	93%

	13-14	14-15	15-16	16-17	17-18
Sections	40	49	52	52	51
% of online enrollment	0%	2%	13%	17%	21%
Degrees awarded	2	4	3	5	3
Certificates awarded	N/A	N/A	N/A	N/A	N/A

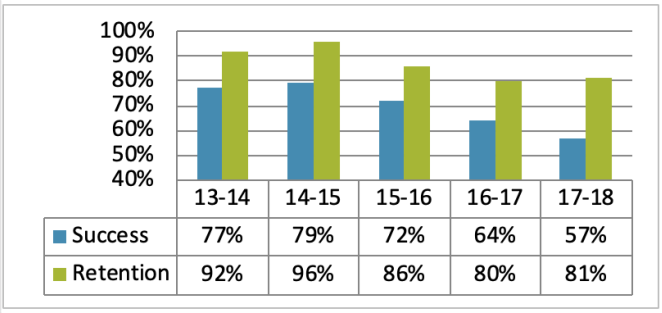
As previously noted, productivity within the Geography Department declined from 2013-14 through 2016-17. The FTES and duplicated enrollment decreased, possibly as a result of a steadily improving economy and associated lower community college enrollment (e.g. students leaving college and/or directly entering the burgeoning job market and skipping college altogether), allowance of low-enrolled sections to continue without being canceled, and less proactive marketing of the program. Simultaneously, FTEF increased, and this negatively impacted efficiency (WSCH/FTEF). Although smaller laboratory class sizes always negatively impact efficiency, the aforementioned reasons for declining enrollment also negatively impact efficiency. In addition, the number of sections increased from 40 to 52 (from 2013-14 through 2016-17) in an effort to provide additional face-to-face and online options for all Geography students.

Productivity, as measured through increased enrollment and efficiency, increased from 2016-17 to 2017-18. Preliminary, unofficial EIS data from the fall 2018 and spring 2019 semesters indicate increased duplicated student enrollment within the Geography program (1,016 students, versus 955 students for the 2017-18 academic year). While it is too early to discern any positive trends in Geography productivity, the improved numbers are promising.

Productivity within GIS:



	13-14	14-15	15-16	16-17	17-18
Duplicated Enrollment	134	101	81	89	74
FTEF	2.22	1.66	2.35	2.07	2.63
WSCH per FTEF	241	278	154	201	132



	13-14	14-15	15-16	16-17	17-18
Sections	17	20	20	18	18
% of online enrollment	0%	0%	20%	22%	50%
Degrees awarded	N/A	N/A	N/A	N/A	N/A
Certificates awarded	17	5	2	3	3

In general, GIS productivity has declined from 2013-14 through 2017-18. In addition to some of the same factors that negatively impacted Geography productivity (e.g. smaller lab-class sizes, a steadily improving economy competing with community college enrollment, allowance of low-enrolled courses to continue without cancelation, and lack of effective marketing), the GIS Certificate was not approved at the State Chancellor's Office from 2014-15 through 2016-17. This understandably discouraged many GIS students from pursuing the 19-unit certificate. This issue has been resolved and the GIS Certificate is currently approved at the State level, once again. Furthermore, the inability of students to complete the certificate online hampered student enrollment (and overall interest in the program). Cancelation of key upper-level GIS courses, as a result of low enrollment, created a bottleneck through which students could not progress (e.g. some students were languishing within the program for five and six semesters prior to successfully completing the 19-unit certificate). All of this, in addition to other unidentified factors, negatively impacted the GIS Certificate Program growth.

During the current (2018-19) academic year, however, students finally have the ability to complete the 19-unit certificate completely online and within only two semesters (provided that they begin in the fall or summer semester). This has been made possible through online courses scheduled within eight-week sequences.

Anecdotal evidence suggests that this strategy is bearing fruit, as the enrollment within both entry- and advanced-level GIS courses appears to have greatly increased. Preliminary, unofficial EIS data from the fall 2018 and spring 2019 semesters indicate increased duplicated student enrollment within the GIS program (194 students, versus 74 students for the 2017-18 academic year). In future semesters and academic years, GIS students will have the option to complete the certificate regardless of when they begin the program (e.g. summer, fall, or spring).

Relevance and Currency, Articulation of Curriculum:

The Content Review Summary from Curricunet indicates the program's current curriculum status. If curriculum is out of date, explain the circumstances and plans to remedy the discrepancy. (NOTE: If the report is inaccurate, contact Mary Copeland, Co-Chair, Curriculum Committee, (mcopel@valleycollege.edu) or Kay Dee Yarbrough, Administrative Curriculum Coordinator, (kyarbrough@sbccd.cc.ca.us) for updated information.

Science

Geography

Course	Status	Last Content Review	Next Review Date
GEOG 100 Map Interpretation and Geospatial Analysis	Active	11/03/2014	11/03/2020
GEOG 102 Cultural Geography	Active	10/09/2017	10/09/2023
GEOG 106 Geographic Perspectives on the Environment	Active	10/09/2017	10/09/2023
GEOG 110 Physical Geography	Active	10/09/2017	10/09/2023
GEOG 111 Physical Geography Laboratory	Active	10/09/2017	10/09/2023
GEOG 111H Physical Geography Laboratory - Honors	Active	10/09/2017	10/09/2023
GEOG 114 Weather and Climate	Active	10/09/2017	10/09/2023
GEOG 118 California Geography	Active	10/09/2017	10/09/2023
GEOG 120 World Regional Geography	Active	10/09/2017	10/09/2023
GEOG 130 Introduction to Geographic Information Systems (GIS)	Active	12/08/2014	12/08/2020
GEOG 222 Independent Study in Geography	Active	11/25/2013	11/25/2019
GEOG 100 Map Interpretation and Geospatial Analysis	Historical		
GEOG 102 Cultural Geography	Historical		
GEOG 102 Cultural Geography	Historical		
GEOG 106 Geographic Perspectives on the Environment	Historical		

	GEOG 106 The Environment, Natural Resources, and Conservation	Historical		
	GEOG 110 Physical Geography	Historical		
	GEOG 110 Physical Geography	Historical		
	GEOG 111 Physical Geography Laboratory	Historical		
	GEOG 111 Physical Geography Laboratory	Historical		
	GEOG 111H Physical Geography Laboratory - Honors	Historical		
	GEOG 114 Weather and Climate	Historical		
	GEOG 114 Weather and Climate	Historical		
	GEOG 118 California Geography	Historical		
	GEOG 120 World Regional Geography,	Historical		
	GEOG 120 World Regional Geography	Historical		
	GEOG 222 Independent Study in Geography	Historical		
	GEOG 285 Honors in Physical Geography	Historical		

Science

Geographic Information Systems

	Course	Status	Last Content Review	Next Review Date
	GIS 039 Global Positioning Systems (GPS) Field Techniques	Active	11/08/2016	11/08/2022
	GIS 098 GIS Work Experience	Active	12/10/2018	12/10/2024
	GIS 100 Map Interpretation and Geospatial Analysis	Active	11/03/2014	11/03/2020
	GIS 130 Introduction to Geographic Information Systems (GIS)	Active	02/02/2015	02/02/2021

	GIS 133 GIS Cartography and Base Map Development	Active	11/08/2016	11/08/2022
	GIS 134 Data Acquisition and Management	Active	11/08/2016	11/08/2022
	GIS 135 Spatial Analysis with GIS	Active	11/08/2016	11/08/2022
	GIS 136 GIS for Science, Government, and Business	Active	11/08/2016	11/08/2022
	GIS 137 GIS Advanced Applications	Active	11/08/2016	11/08/2022
	GIS 222 Independent Study in Geographic Information Systems	Active	11/08/2016	11/08/2022
	GIS 039 Global Positioning Systems (GPS) Field Techniques	Historical		
	GIS 098 GIS Work Experience	Historical		
	GIS 098 GIS Work Experience	Historical		
	GIS 100 Map Interpretation and Geospatial Analysis	Historical		

	ENVT 101 Management of Hazardous Materials	Historical		
	ENVT 103 Hazardous Substances and Environmental Consequences	Historical		
	ENVT 105 Hazardous Waste Management	Historical		
	ENVT 107 Toxicology	Historical		
	ENVT 109 Transportation of Hazardous Materials	Historical		
	GIS 130 Introduction to Geographic Information Systems (GIS)	Historical		
	GIS 130 Introduction to Geographic Information Systems (GIS)	Historical		
	GIS 130 Introduction to Geographic Information Systems	Historical		
	GIS 130 Introduction to Geographic Information Systems (GIS)	Historical		
	GIS 131 GIS Applications	Historical		

	GIS 131 GIS Applications	Historical		
	GIS 133 GIS Cartography and Base Map Development	Historical		
	GIS 133 GIS Cartography and Base Map Development	Historical		
	GIS 134 Data Acquisition and Management	Historical		
	GIS 135 Spatial Analysis with GIS	Historical		
	GIS 135 Spatial Analysis with GIS	Historical		
	GIS 136 GIS for Science, Government, and Business	Historical		
	GIS 137 GIS Advanced Applications	Historical		
	GIS 150 GIS Internship	Historical		
	GIS 222 Independent Study in Geographic Information Systems	Historical		
	GIS z098 GIS Work Experience	Historical		

Articulation and Transfer

List Courses above 100 where articulation or transfer is **not** occurring	With CSU	With UC
GEOG 100/ GIS 100 : Map Interpretation and Geospatial Analysis		Not yet articulated within the UC system.
GEOG 118: California Geography		Not yet articulated within the UC system.
GEOG 222: Independent Study in Geography		Limited transfer to UC. Credit determined after transfer to UC.
GIS 134: Data Acquisition and Management		Not yet articulated within the UC system.
GIS 135: Spatial Analysis with GIS	Transfers as elective credit only.	Not yet articulated within the UC system.
GIS 136: GIS for Science, Government and Business		Not yet articulated within the UC system.
GIS 137: Advanced GIS Applications	Transfers as elective credit only.	Not yet articulated within the UC system.
GIS 222: Independent Study in GIS		Limited transfer to UC. Credit determined after transfer to UC.

Describe your plans to make these course(s) qualify for articulation or transfer. Describe any exceptions to courses above 100.

At this time, GEOG 100 and 118 do not articulate with the UC system and GEOG 222 has limited UC articulation. While most 100-level GIS courses fully articulate and transfer to the CSU system, GIS 135 and 137 transfer as elective credit only. At this time, comparable courses are found within the upper division. Aside from GIS 100, 130 and 133, all other 100-level GIS courses do not yet articulate and transfer to the UC system. As with the CSU system, many GIS (and related geospatial) courses are found within the upper division.

The Geography and GIS faculty will continue to work with the SBVC articulation officer, as well as articulation officers at selected CSU, UC, and private transfer institutions. In addition, faculty will meet with community college and four-year faculty at professional meetings and regular telecommunication. Area industry and employer input will benefit these programs through industry advisory meetings.

Currency

Review all mentions of your area in the catalog. Is the information given accurate? If not, briefly identify the areas that will be revised.

To the best of our knowledge, all Geography and GIS programmatic information is current and up to date within the catalog and website publications. Nonetheless, the Geography-GIS Department is in dialogue with catalog representative, Kay Dee Yarbrough, Administrative Curriculum Coordinator, in an effort to ensure that the most current information is published in print and online environments.

If any courses are no longer offered, list them here. (Include Course # and Title of the Course). If the information is inaccurate and/or there are listed courses not offered, how does the program plan to remedy the discrepancy?

Follow the link below and review the last college catalog data.
http://www.valleycollege.edu/academic-career-programs/college-catalog.aspx

If your information needs updating, contact Kay Dee Yarbrough, Administrative Curriculum Coordinator, (kyarbrough@sbccd.cc.ca.us).

All active Geography and GIS courses are offered, although some are offered infrequently and/or on a case-by-case basis.

Challenges:

Referencing the narratives in the EMP summary, provide any additional data or new information regarding planning for the program. In what way does your planning address trends and weaknesses in the program?

Geography Program:

There are presently several barriers to student success for students taking Geography courses, including lack of math, reading, and English skills. The Department will continue to address this through departmental advisories and possibly prerequisites for math, reading, and English proficiency. This includes updating departmental advisories to include English 101 and Math 096, as part of the larger AB 705 initiative. In addition, the Guided Pathways initiative holds both promise and peril for the Geography Department. If the department proceeds proactively within institution-wide discussions, then it has the capacity to increase student enrollment, number of degrees earned, and overall student success and retention. The Department has procured one SI leader/tutor. There is anecdotal evidence to suggest that this has increased student success and retention.

There is limited instructional supply money for necessary classroom items, including up-to-date maps, globes, demonstration models, and laboratory supplies. While the transportation supply funding has been enhanced, it is likely that it will once again need to be supplemented, in light of increased fuel costs. Budgeting for technology for a variety of Geography courses is an ongoing issue.

Major trends may include:

- AB 705 and Guided Pathways challenges and opportunities for student enrollment, success, and retention within Geography and GIS programs,
- Greater participation in the Zero Textbook Cost (ZTC) program,
- Environmental aspects related to global climate change and resource scarcity, specifically as it pertains to urbanization, air quality, and water use within the Inland Empire,
- Related mapping technologies, including GIS, GPS, and remote sensing, specifically job growth within the mapping sciences within the Inland Empire,
- Inclusion of greater numbers of previously underrepresented populations, specifically through outreach, workshop, guest speaker, and job fair events,
- Land and resource management programs, specifically through partnerships with ESRI, US Forest Service, City and County of San Bernardino, and other public and private entities within the Inland Empire, and

- Depending on state and federal mandates, the demand for Geography school teachers (K-12) may increase.

The Department will continue to participate in discipline-specific and SBVC Professional Development conferences and workshops. In addition to these events, Department faculty will continue to collaborate with faculty at other California Community Colleges and four-year institutions to share ideas about pedagogy, curriculum, technology, and other current events. This dialogue will occur within professional meetings, workshops, and conferences, as well as through industry advisory committee recommendations.

The following external factors impact Geography and GIS student enrollment and service utilization:

- AB 705 and Guided Pathways initiatives and regulations could positively impact the Geography and GIS programs, but only if the programs proactively embrace and adapt to the inherent challenges and opportunities,
- Textbook costs and greater participation in the ZTC program,
- Student life demands,
- State of the economy, including specific job availability and marketplace demands,
- Demographic trends, including high school graduation trends,
- Federal and State funding trends,
- Transportation and related mobility issues, and
- Programs offered at competing area colleges and four-year institutions.

GIS Program:

- There are no full-time instructors within the GIS program (with the exception of one full-time Geography instructor who teaches selected introductory GEOG/GIS 100 and 130 sections). Although the current GIS instructors are professional and capable (and drawn from within the GIS industry), it is difficult to guarantee the permanence of adjunct instructors. However, with the introduction of a full-time geography faculty, the stability of the GIS program would be better maintained.
- Related to the previous point, there are only two full-time faculty advocates for GIS program, the faculty chair and a full-time geography faculty member. This faculty chair must also develop and maintain growth within the Geography and Geology-Oceanography Departments, as well as contribute to the newly revised Environmental Sciences/Studies program. These multiple roles make it difficult to focus energy and resources on the GIS program. This has proven costly for SLO development and evaluation, as well as the Curriculum Content Review cycle.
- Because many entry-level GIS positions are found within the public sector (e.g. city, county, state, and federal governments), cyclical economic downturns have resulted in fewer GIS positions being made available to SBVC GIS students.
- Although GIS tutors have served GIS students during past semesters, no long-term, institutionalized funding has been procured for this important service. Instead, ephemeral grant-funded sources, including Perkins and Strong Workforce Grants have been utilized. It will, therefore, be necessary to coordinate with the Student Success Center, Cal Works, Hi-Tech Center, and other on-campus student support services to provide more stable, long-term, institutionally-supported tutorial services. This will begin with the Program Review Needs Assessment process.

VI: Questions Related to Strategic Initiative: Provide Exceptional Facilities

Goal: SBVC will support the construction and maintenance of safe, efficient, and functional facilities and infrastructure to meet the needs of students, employees, and the community.

SBVC Strategic Initiatives: Strategic Directions + Goals

	Does Not Meet	Meets	Exceeds
Facilities	The program **does not provide an evaluation** that addresses the sustainability of the physical environment for its programs.	Program **provides an evaluation** of the physical environment for its programs and **presents evidence** to support the evaluation.	In addition to the meets criteria, the program has **developed a plan** for obtaining or utilizing additional facilities for program growth.

Facilities:

Provide an evaluation of the facilities in your area and their impact on the educational environment for your students (classroom facilities, technology, space needs, maintenance issues, etc.). Address sustainability of the facility (including technology needs).

Geography-GIS Program Facilities:

The vast majority of face-to-face Geography courses meet within a single designated classroom, PS 221. This classroom is generally well stocked with a variety of maps, globes, and basic geographic and physical science equipment. There is a shared storage room (with the Geology-Oceanography Program) within PS 220, as well as on the first floor of the Physical Sciences Building. In general, the physical classroom, instructional (and non-instructional) supplies, and technology serves the purpose for most physically- and socially-oriented geography courses.

The vast majority of GIS courses meet online and, therefore, do not require a classroom. The Canvas and associated Zoom technologies seem to accommodate most student needs. The ESRI ArcGIS software (desktop and online platforms) appears to work well for most students. However, the desktop software functions online within a Windows Operating System (OS) environment and does not function within a Mac OS environment. The few GIS courses that meet on campus generally do so within the HLS 231 computer lab. This lab contains the latest ArcGIS desktop software and allows students to successfully complete and submit a variety of class projects.

Geography Program: Technology:

In addition to traditional lecture methods, including class discussion and whiteboard, the Geography Department is using the following technologies:

- Classroom computer and LCD projector for *PowerPoin*t, *Google Earth*, *World Wind*, ESRI *ArcGIS* (including online), and other computer animation software,
- Dell notebook computers running a variety of geographically-oriented software,
- DVD and streaming educational videos,
- *Canvas* course management system (including *Zoom* video conference software),
- *YouTube* video archiving and playback system,
- Student e-mail,
- Interactive television (ITV) courses linked to the Big Bear High School site, and
- Official SBVC website: http://www.valleycollege.edu/academic-career-programs/degrees-certificates/geography.

The Geography Department will expand the number of courses offered in a distributed education (DE) environment. The Department will continue to work closely with the College, Science Division, Audiovisual Department, Curriculum Committee, Program Review Committee, Technology Committee, and Professional Development Committee.

GIS Program: Technology:

In addition to traditional lecture methods, including class discussion and whiteboard, the GIS Certificate Program is using the following technologies:

- Classroom computer and LCD projector for *PowerPoint*, *Google Earth*, *World Wind*, ESRI *ArcGIS* (including online), and other computer animation software,
- Dell notebook computers running a variety of geographically-oriented software,
- DVD and streaming educational videos,
- *Canvas* course management system (including *Zoom* video conference software),
- *YouTube* video archiving and playback system,
- Student e-mail,
- ESRI Open Campus (on-line) courses,
- Official SBVC website: http://www.valleycollege.edu/academic-career-programs/degrees-certificates/geographic-information-systems.

The GIS Department will continue to expand the number of courses offered in a distributed education (DE) environment. This will eventually culminate in a sequenced program that will allow GIS students to complete the 19-unit certificate regardless of when they begin the program (e.g. fall, spring, or summer semester). The Department will continue to work closely with the College, Science Division, Audiovisual Department, Curriculum Committee, Program Review Committee, Technology Committee, and Professional Development Committee.

An integral aspect of the GIS software – industry-standard ESRI (Environmental Systems Research Institute, a world leader in GIS software, based in Redlands, California) software – is close communication with the Foundation for California Community Colleges. For an affordable price, the District has purchased a District-wide site license for the ESRI GIS software. This allows faculty, staff, and students to use the latest versions of ArcGIS (including online), and related GIS software. This is the same software that GIS analysts use on a daily basis. Because our students use and interact with this software within their GIS courses, they will be well prepared for entry-level careers and transfer to four- year institutions. For more information about the Foundation for California Community Colleges GIS software program, please view the following website: http://www.foundationccc.org/CollegeBuys/OurPartners/tabid/489/Default.aspx#esri

The SBVC GIS Program will also coordinate with the California Community Colleges Geographic Information Systems Collaborative (CCCGIS Collaborative). This clearinghouse for CCC geographic data is available to all community colleges throughout the state. Not only may data be accessed from but also contributed to this clearinghouse. Please view the following website for additional information: http://www.cccgis.org.

VII: Previous Does Not Meets Categories

Listed below, from your most recent Program Efficacy document, are those areas which previously received "Does Not Meet."

Address, in **DETAIL AND WITH SPECIFIC EXAMPLES**, how each deficiency was resolved. If these areas have been discussed elsewhere in this current document, provide the section where these discussions can be located.

Does Not Meet areas from spring 2017 CTE review:

Cost of Program: The report states that the program is "highly inefficient and endeavors to increase FTES, duplicated enrollment, and WSCH/FTES" by increasing DE courses, adjusting the sequence of courses to shorten certificate completion time, increase recruitment, making links with employers and colleges/universities, improving student success through support services, maintaining program resources.

Portions of this "Does Not Meet" category are addressed within the following sections: EMP document, Pattern of Service section, Student Success section, GIS Planning section, and Productivity section.

To summarize, the GIS Certificate Program has significantly modified its course delivery modality and sequencing. Beginning in the fall 2018 semester, students are able to complete all necessary GIS courses within the 19-unit sequence online. In addition, these online GIS courses are in an eight-week format so that students can complete the 19-unit certificate in only two semesters (provided that they begin in the summer or fall semester and successfully conclude during the following spring semester). Preliminary, unofficial EIS data from the fall 2018 and spring 2019 semesters indicate increased duplicated student enrollment within the GIS program (194 students, versus 74 students for the 2017-18 academic year). Plans are in place to offer GIS courses such that students can complete in only two semesters regardless of when they begin (e.g. summer, fall, or spring). The GIS Certificate regained State Chancellor's Office approval in 2016-17, and this has the capacity to further improve student enrollment, efficiency, and certificate completion.