

## 2024 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

**CURRENT YEAR: 2024**                      **PROGRAM(S): EARTH AND OCEAN SCIENCES**  
**CLUSTER: STEM**                        **LAST YEAR CPPR COMPLETED: 2022**  
**NEXT SCHEDULED CPPR: 2027**      **CURRENT DATE: 2/22/2024**

The Annual Program Planning Worksheet (APPW) is the process for:

- reviewing, analyzing and assessing programs on an annual basis
- documenting relevant program changes, trends, and plans for the upcoming year
- identifying program needs, if any, that will become part of the program's **Resource Plan**, which can be downloaded from this **SharePoint folder**. Please review the **Resource Allocation Rubric** when preparing the resource plan.
- highlighting specific program accomplishments and updates since last year's APPW
- tracking progress on a Program Sustainability Plan if established previously

**Note:** Degrees and/or certificates for the *same* program **may be consolidated** into one APPW.

This APPW encompasses the following programs of study (degrees and/or certificates):

Earth and Ocean Sciences (EOS) including:

- AST Geology;
- AS Geology;
- Certificate in GIS;
- AST Environmental Science

### General Program Update

Describe changes and improvements to the program, such as changes to the mission, purpose, or direction. In particular, indicate any changes that have been made to address equity gaps.

With COVID-19 restrictions lifted, the EOS department is adjusting to enrollment numbers post COVID-19 pandemic. With all COVID-19 restrictions lifted we have worked in the past 2-3 years to determine the best course offerings to balance student need and faculty availability.

We have ceased offering GEOL212 environmental geology as it had significant overlap with GEOL210 and ENVS200. Students with an interest in environmental components are able to take environmental science, ENVS200, which we now offer as an in-person course. Enrollment has increased in oceanography, lectures and labs.

This year we began a dual enrollment program with Templeton high school, and we are

running one section of environmental science on that campus as a collaboration between Dr. Kane and Kristina Evanko (of Templeton high school). This has been a successful course according to both faculty, and both faculty are looking forward to continuing to offer this dual enrollment Course to students in future school years.

We ran our first field course since before the pandemic in the spring of 2023 with 12 students attending our trip to death valley and the western Sierras (GEOL 229B). We could not run a field course in fall 2023 due to lack of faculty. We are running GEOL 229B, field course to death valley again this spring 2024 with 11 students enrolled and are planning to run GEOL 229A, field trip to Yosemite and the Eastern Sierras in fall of 2024.

All graphs shown in this document show data for environmental science, geology, and oceanography together.

### **Program Sustainability Plan Update**

Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

- Yes  If yes, please complete the Program Sustainability Plan Progress Report below.  
No  If no, you do not need to complete a Progress Report.

If you selected yes, please complete the Program Sustainability Plan Progress Report below after you complete the Data Analysis section. That data collection and analysis will help you to update, if necessary, your Program Sustainability Plan.

### **Data Analysis and Program-Specific Measurements**

Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates, then you MAY want to comment on each degree and/or certificate or discuss them holistically for the entire program being sure to highlight relevant trends for particular degrees and/or certificates if necessary. Responses in this document need only reference the most recent year's available data.

A. General Enrollment (Insert Aggregated Data Chart)

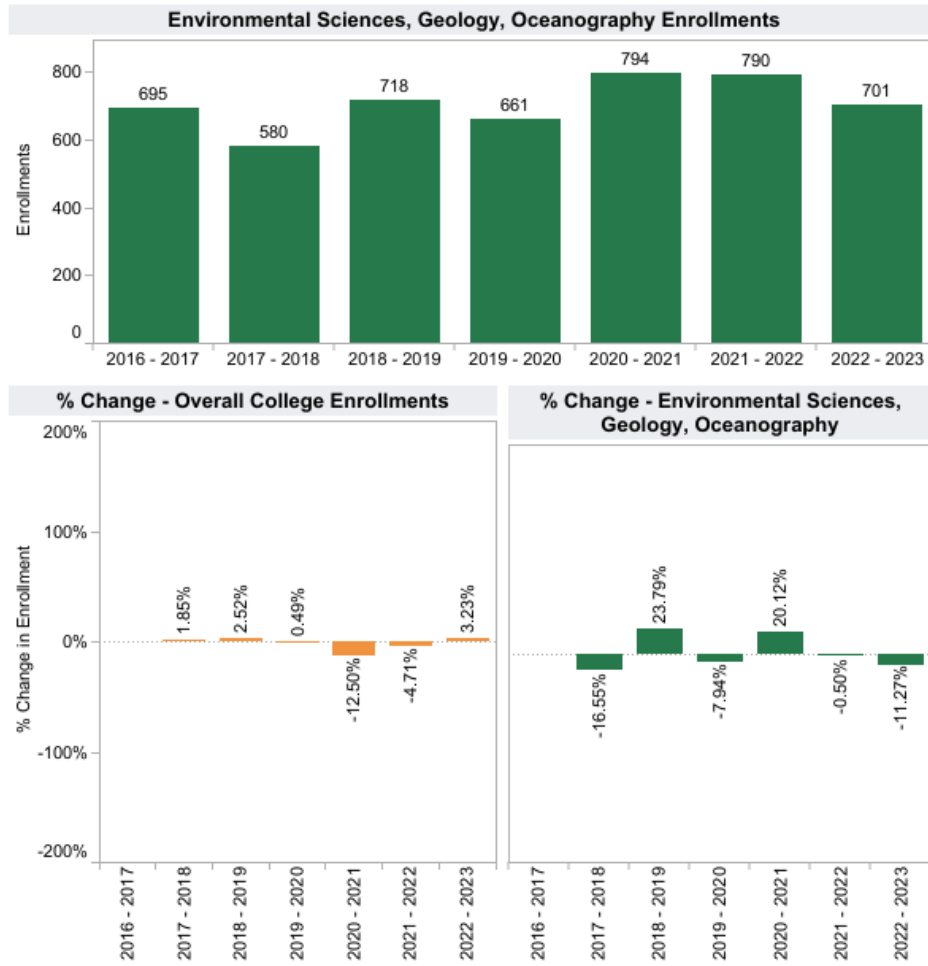


Figure 1A. Enrollment numbers for all students in EOS courses (top) and % change in enrollment numbers of all students in yellow and % change in enrollment numbers of EOS students in green (bottom).

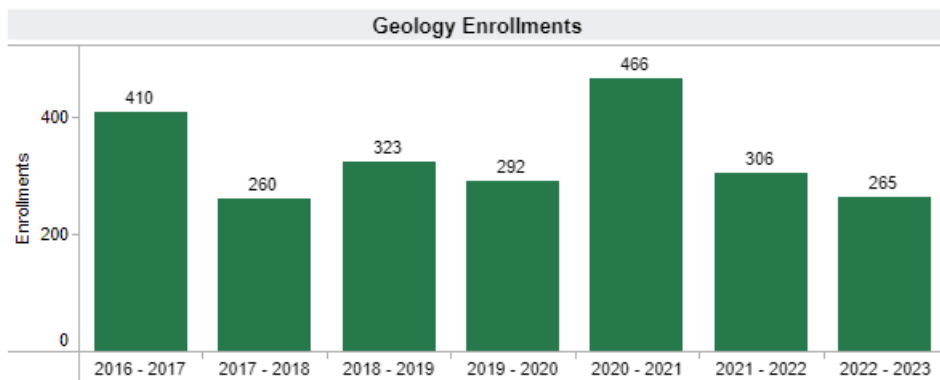


Figure A2: Enrollment numbers for all students in Geology courses.

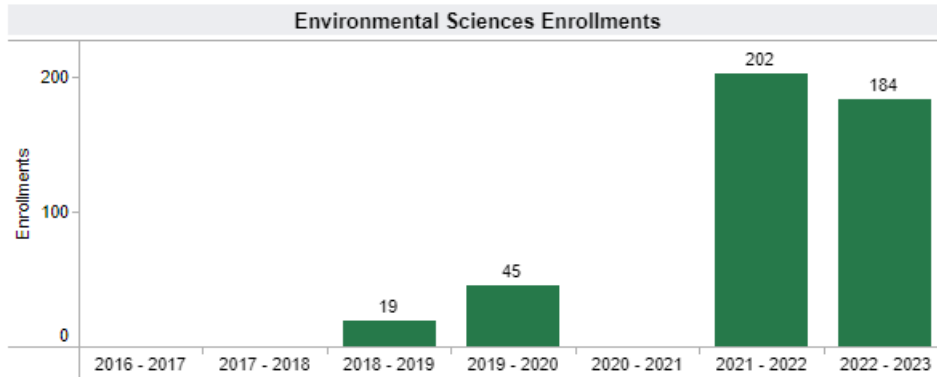


Figure A3: Enrollment numbers for all students in Environmental Science courses.

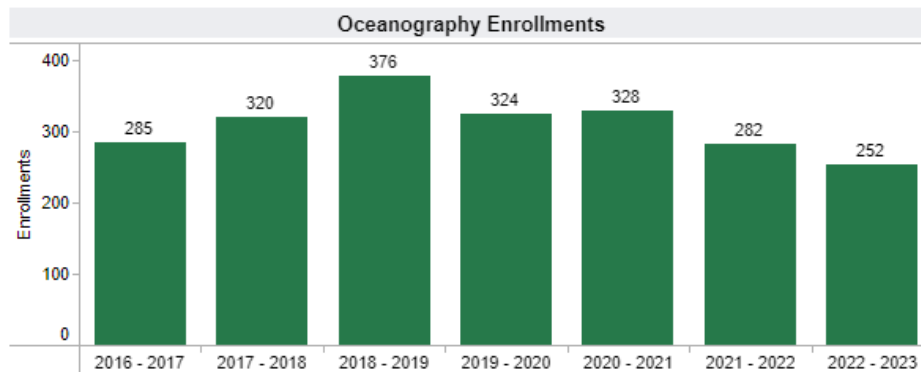


Figure A4: Enrollment numbers for all students in Oceanography courses.

In total, EOS courses are doing well compared to the entire college. There is a slight dip in overall enrollment numbers in the 2020-21 and 2021-22 years that is consistent with overall decrease in enrollment seen across the college due to the COVID-19 pandemic.

The availability of the ENVS 200 course may have contributed to the drop in Oceanography enrollment in the 2021-22 school year. Both of these courses are commonly chosen as a GE course, and may compete with each other for enrollment.

Both lecture and lab courses in oceanography have hit their course cap with multi student waitlist for fall 2023 and spring 2024. We are adding additional sections of both oceanography lecture and lab for fall 2024 with the intention of increasing overall enrollment numbers in our courses. We continue to be limited by faculty load availability as we are a faculty of only one full-time professor. We are trying to increase enrollment numbers but will be limited until we can hire a second full-time professor.

B. General Student Demand (Fill Rate) (Insert Aggregated Data Chart)

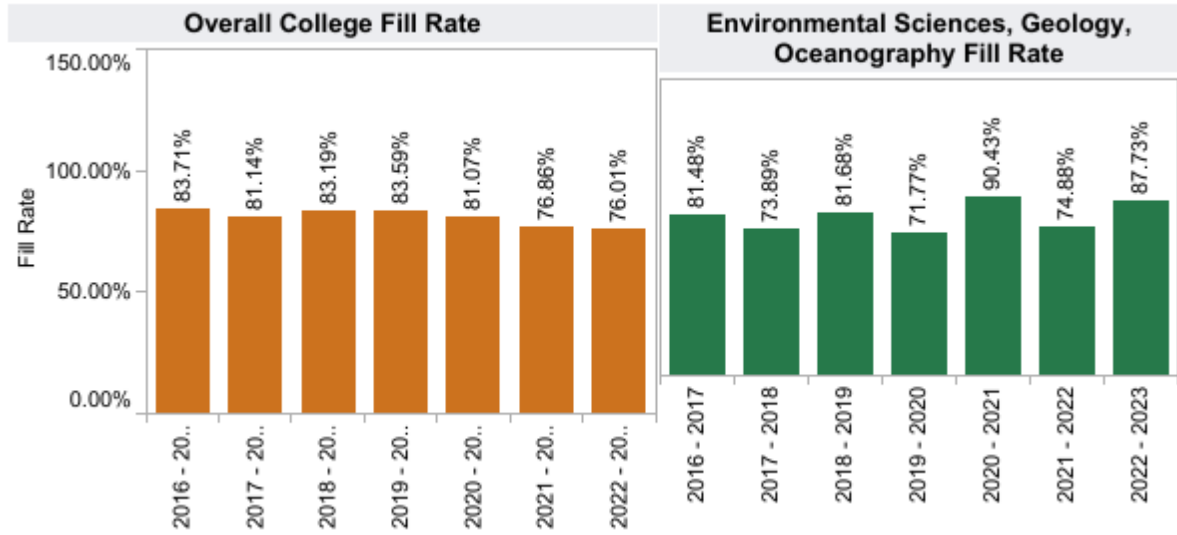


Figure B1: Course fill rate for entire college (orange) and for EOS courses only (green).

EOS courses have seen an increase in their fill rates proportional to the class limits in comparison to overall college fill rates. We suspect this is reflective of the increased demand in environmental science and subsequently physical geology. Additionally, faculty have a better understanding of the overall demand for EOS courses offered each semester in a post-COVID environment.

C. General Efficiency (FTES/FTEF) (Insert Aggregated Data Chart)

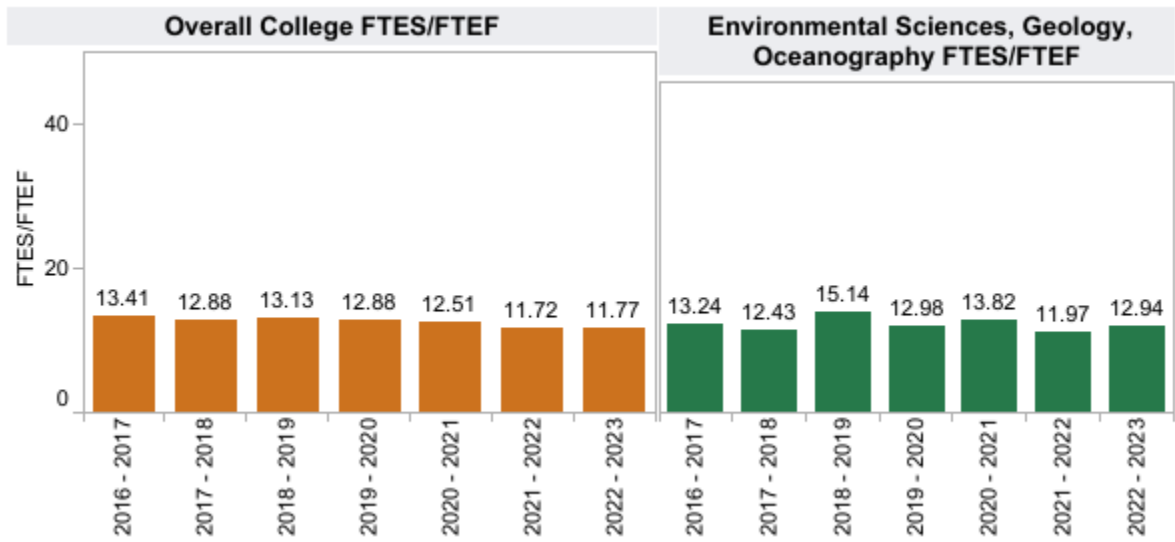


Figure C1: Efficiency of the college (orange) and of EOS courses only (green).

The FTES for EOS courses is slightly higher than the FTES of the entire college. The trends across the last 6 years are similar between EOS and the entire college.

D. Student Success—Course Completion by Modality (Insert Data Chart)

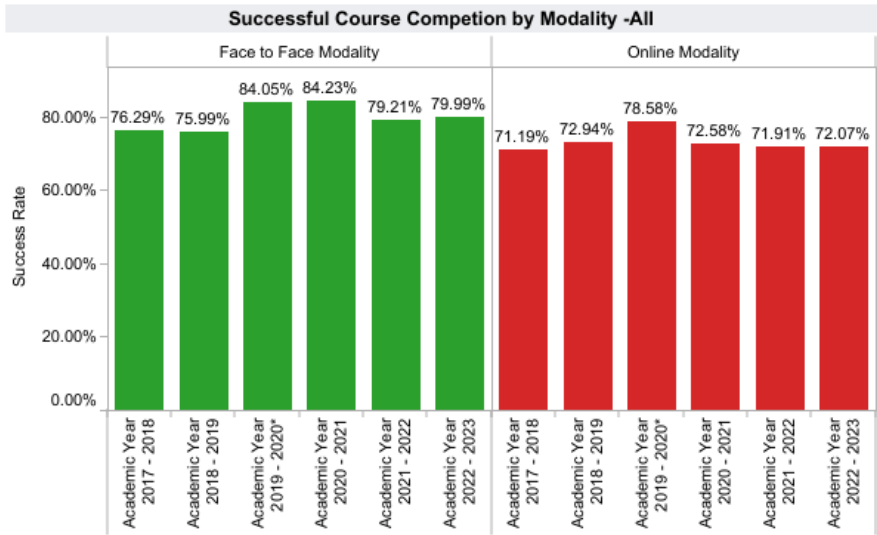
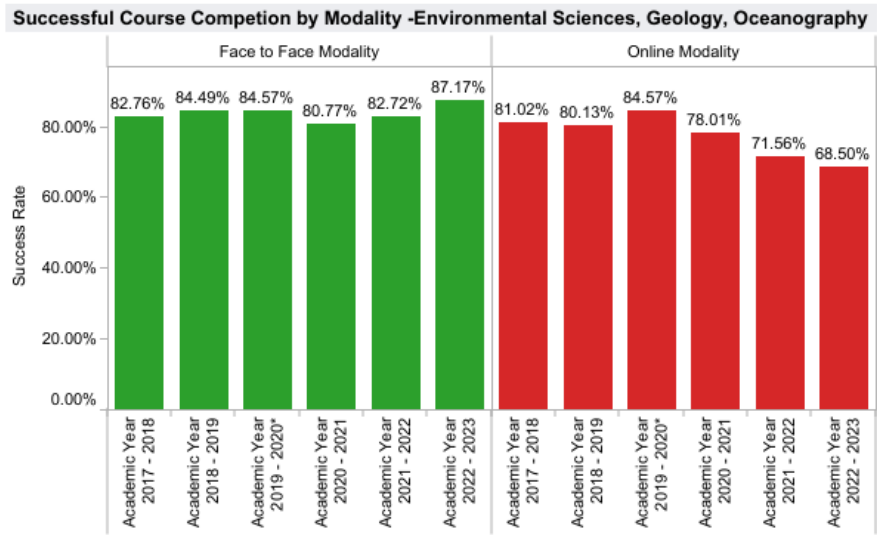


Figure D1: Success rate by modality of the entire college



		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023
Face to Face Modality	Department Success Rate	82.76%	84.49%	84.57%	80.77%	82.72%	87.17%
	Total Department Enrollm..	465.0	607.0	502.0	26.0	243.0	379.0
Online Modality	Department Success Rate	81.02%	80.13%	84.57%	78.01%	71.56%	68.50%
	Total Department Enrollm..	137.0	152.0	164.0	777.0	554.0	329.0

Figure D2: Success rate by modality of EOS courses only

The number of students enrolled in online courses increased dramatically in the 2020-21 and 2021-22 due to the COVID-19 pandemic. In person offerings and enrollments were very low compared to past years. This makes the in-person data difficult to conclude on. With a return to more face-to-face course offerings, EOS success rates have been and are anticipated to continue to meet or exceed the overall college rates moving forward.

Online success in EOS courses reflects the success of all online courses at the college well. Faculty in this department transitioned to the online modality with interactive and engaging curriculum, especially with lab courses, for the 2020-21 and 2021-22 school years. Lab courses in EOS are back to being offered only in-person as of 2022-23 and we are offering only 3 online lecture courses per semester. One DE geology course, one DE oceanography course, and one DE late start 9-week course. These courses are seeing high enrollment numbers. We see a slight dip in course completion for our online courses in the 2022-23 school year while we are still seeing high demand for these online offerings. We see an increase in course completion for our face-to-face courses of that same year.



E. Degrees and Certificates Awarded (Insert Data Chart)

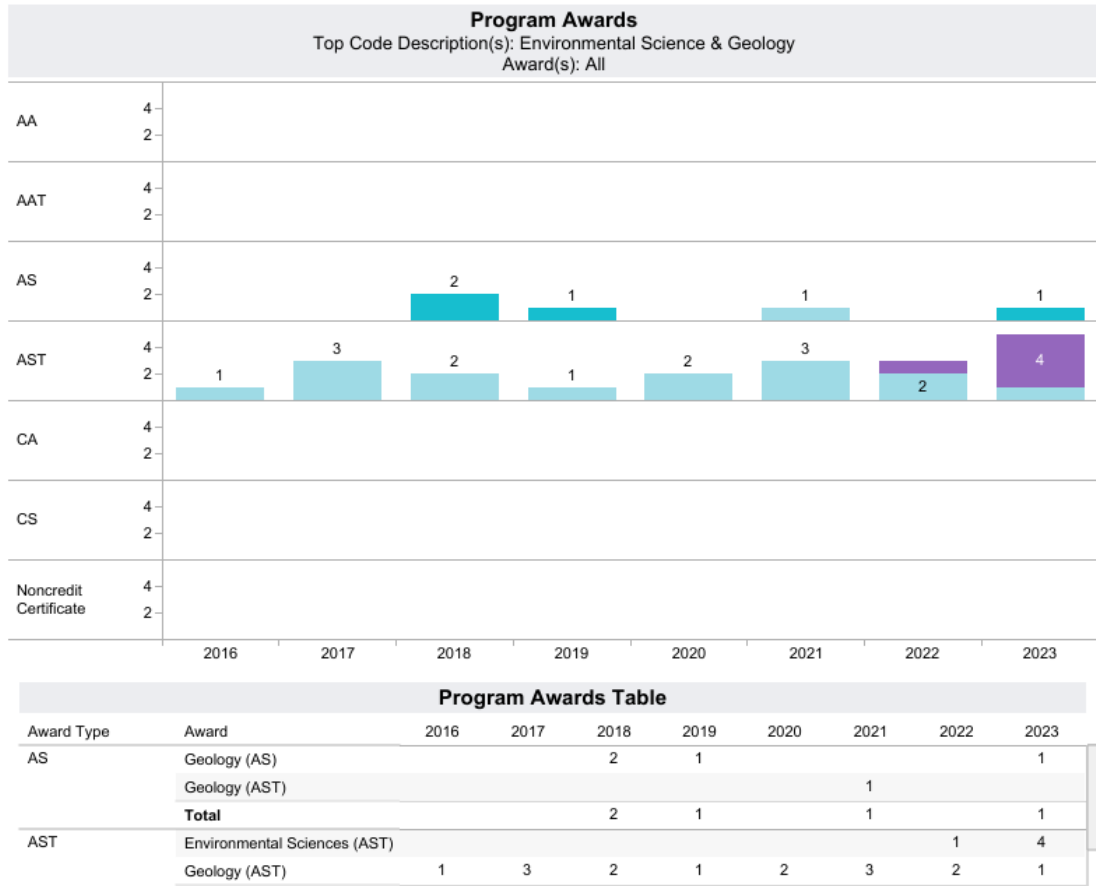


Figure E1: Degrees awarded in Geology (blue) and Environmental Science (purple)

This data shows that five students graduated with an EOS AST, 4 in environmental science and one in geology. While one local geology degree was awarded last year.

The number of students enrolling in both environmental science and physical geology are increasing due to the increase in interest in the environmental science AS-T degree. Based on the number of our current students declaring a major in Environmental Science, we anticipate an increase in students earning the environmental science AS-T in the coming years.

F. General Student Success – Course Completion (Insert Aggregated Data Chart)

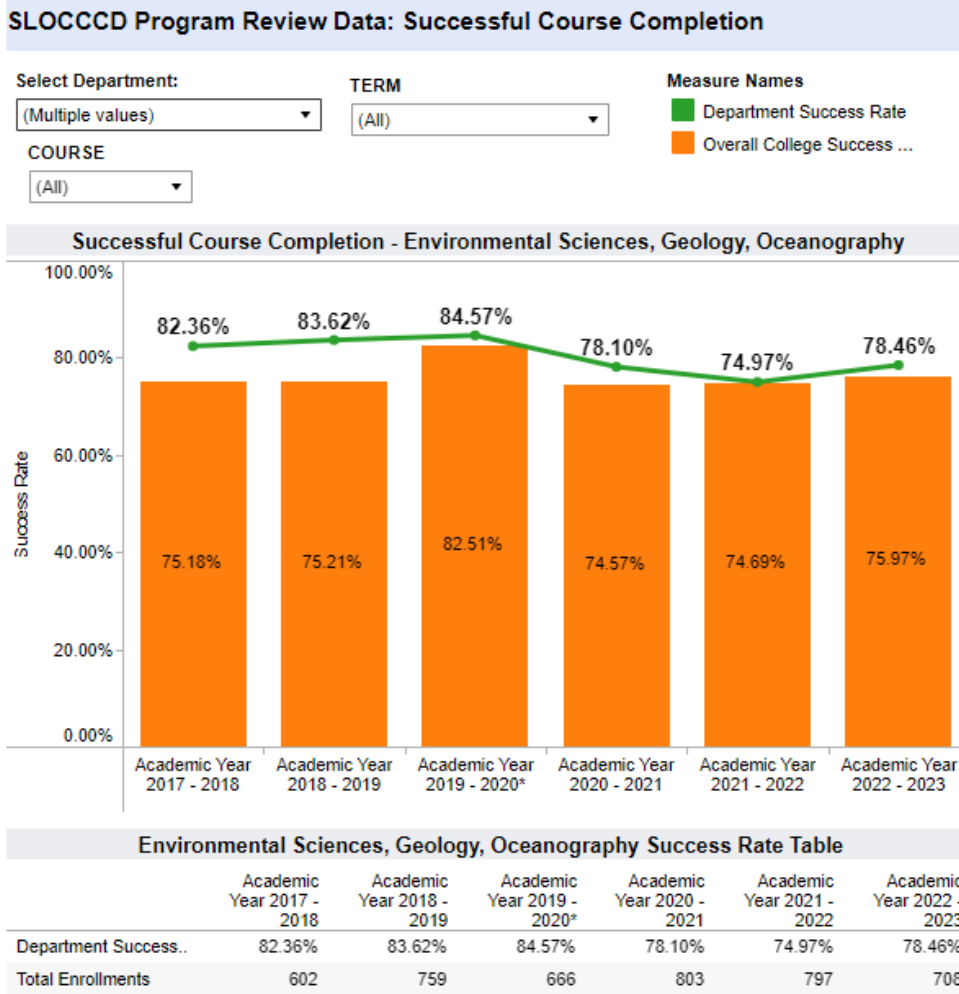
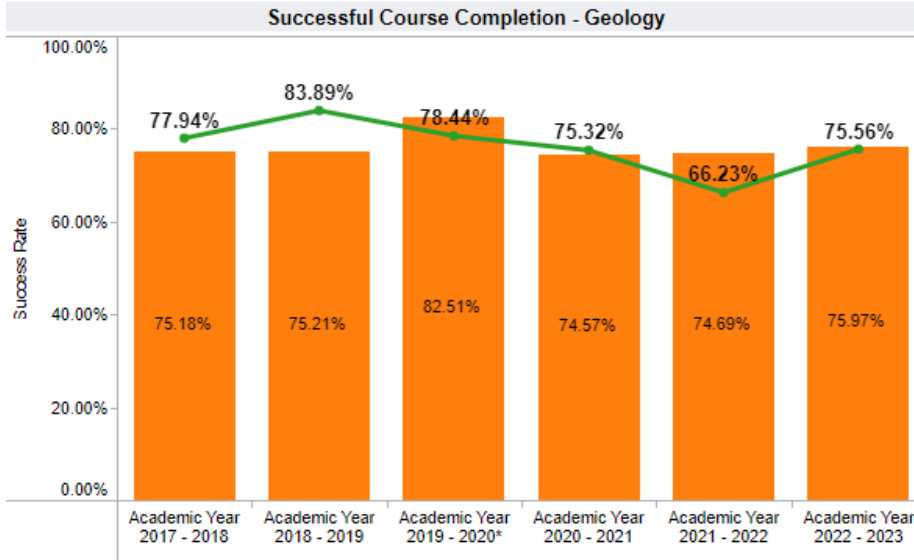


Figure F1: Course completion in Geology, Environmental Sciences, and Oceanography

## SLOCCCD Program Review Data: Successful Course Completion

Select Department:  TERM:  Measure Names:  Department Success Rate,  Overall College Success ...

COURSE:

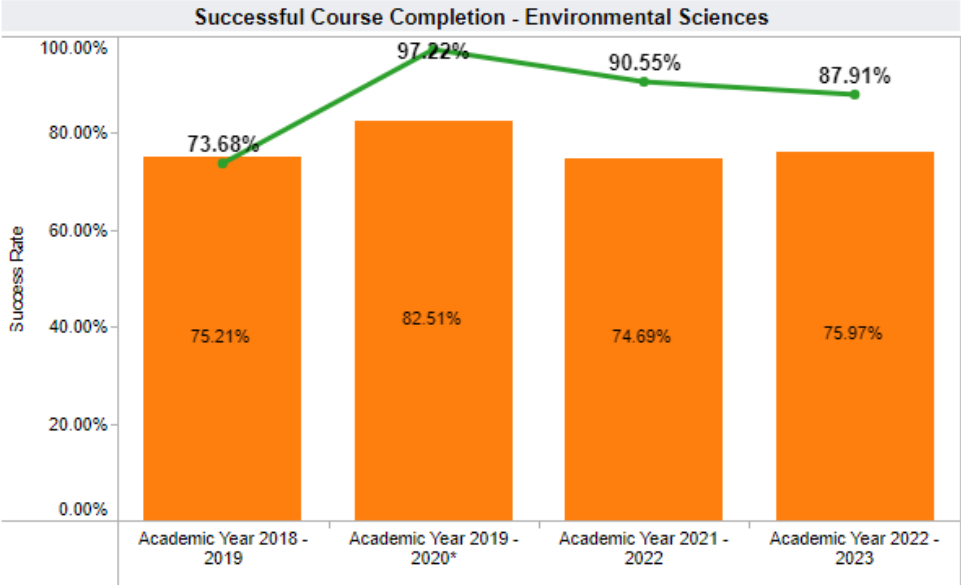


	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023
Department Success..	77.94%	83.89%	78.44%	75.32%	66.23%	75.56%
Total Enrollments	273	361	296	468	308	268

Figure F2: Course completion in Geology

**SLOCCCD Program Review Data: Successful Course Completion**

Select Department: Environmental Sciences TERM: (All) Measure Names: Department Success Rate, Overall College Success ...  
 COURSE: ENV200



**Environmental Sciences Success Rate Table**

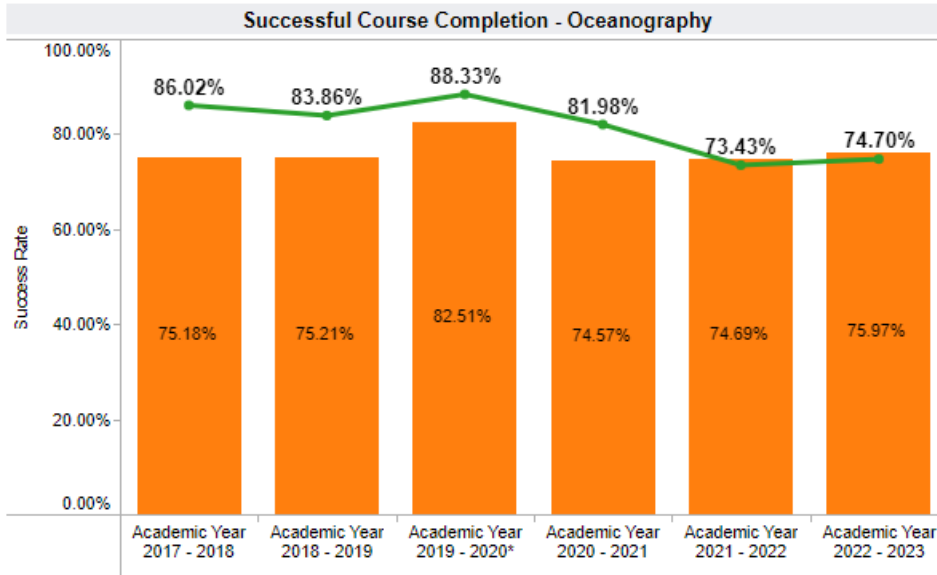
	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2021 - 2022	Academic Year 2022 - 2023
Department Success..	73.68%	97.22%	90.55%	87.91%
Total Enrollments	19	46	202	185

Figure F3: Course completion in Environmental Science

## SLOCCCD Program Review Data: Successful Course Completion

Select Department:  TERM:  Measure Names:  Department Success Rate,  Overall College Success ...

COURSE:



	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022	Academic Year 2022 - 2023
Department Success..	86.02%	83.86%	88.33%	81.98%	73.43%	74.70%
Total Enrollments	329	379	324	335	287	255

Figure F4: Course completion in Oceanography

Completion rates remain high in environmental science – there is only one class included in this program, ENVS200. We are seeing slight increases in course completion in both oceanography and geology upon return to pre-Covid modality offerings. Changes to our completion rates coincide with both the COVID-19 pandemic and a shuffling of the faculty in our department. We had a full-time faculty come on board in the fall of 2021.

G. Review the **Disaggregated Student Success** charts; include any charts that you will reference. Describe any departmental or pedagogical outcomes that have occurred as a result of programmatic discussion regarding the data presented.

The following are some questions you might want to consider:

- What specific groups are experiencing inequities? What patterns do you notice in the data? How have the equity gaps changed since the previous academic year?
- What professional opportunities are your program faculty participating in to address closing equity gaps?
- What strategies, policies and/or practices in your program have you implemented or what could be improved to better support students who experience equity gaps?

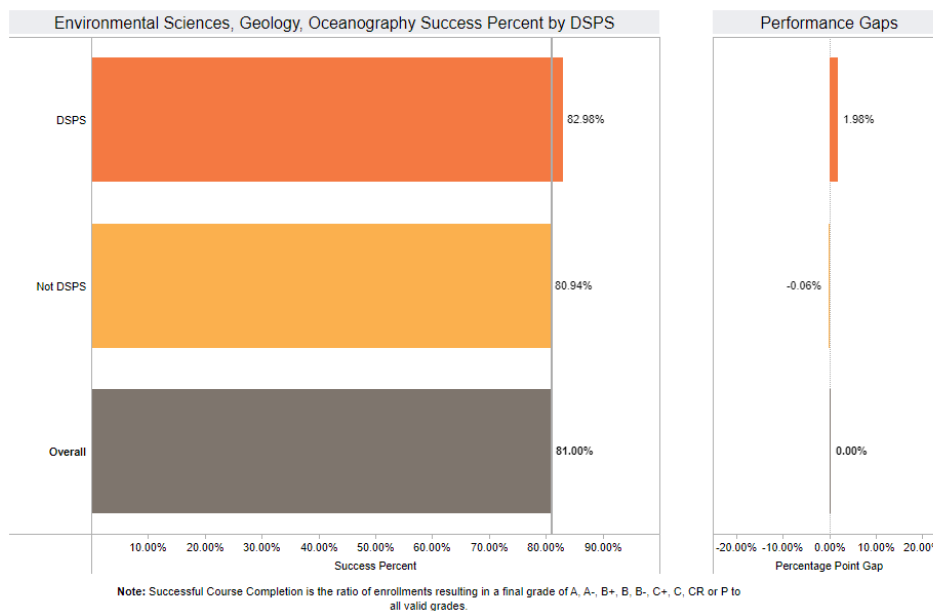


Figure G1: Course completion by DSPS vs. Non-DSPS

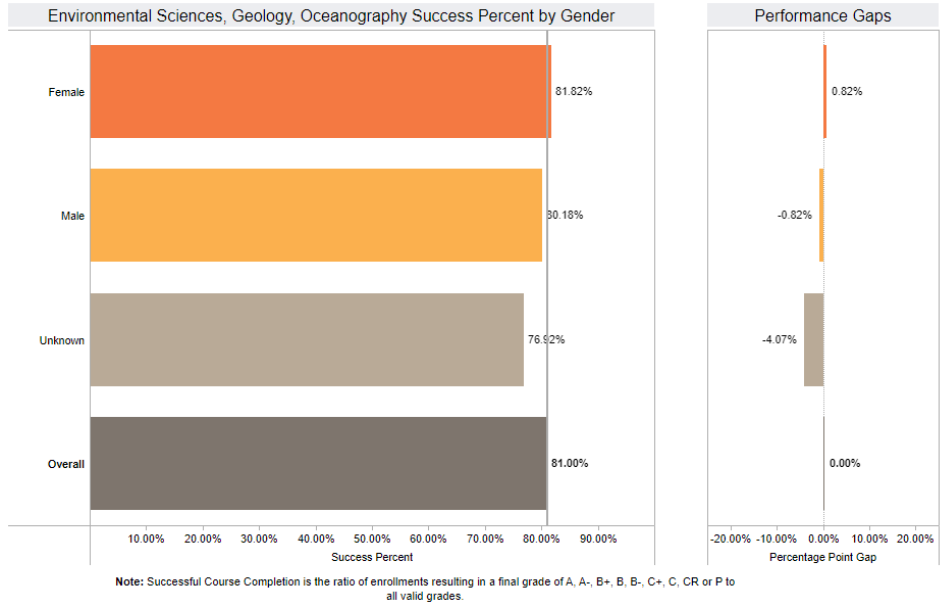


Figure G2: Course completion by gender

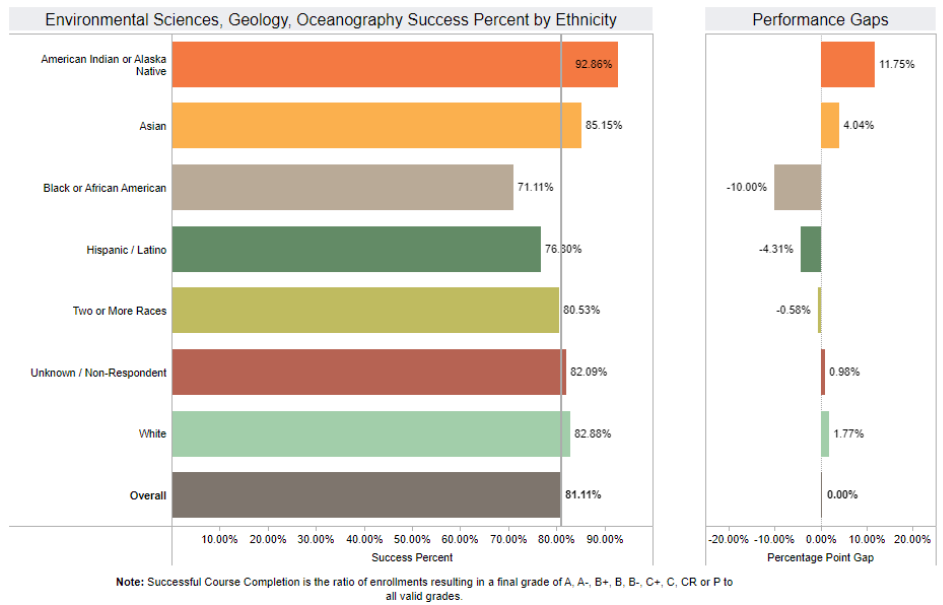


Figure G3: Course completion by ethnicity.

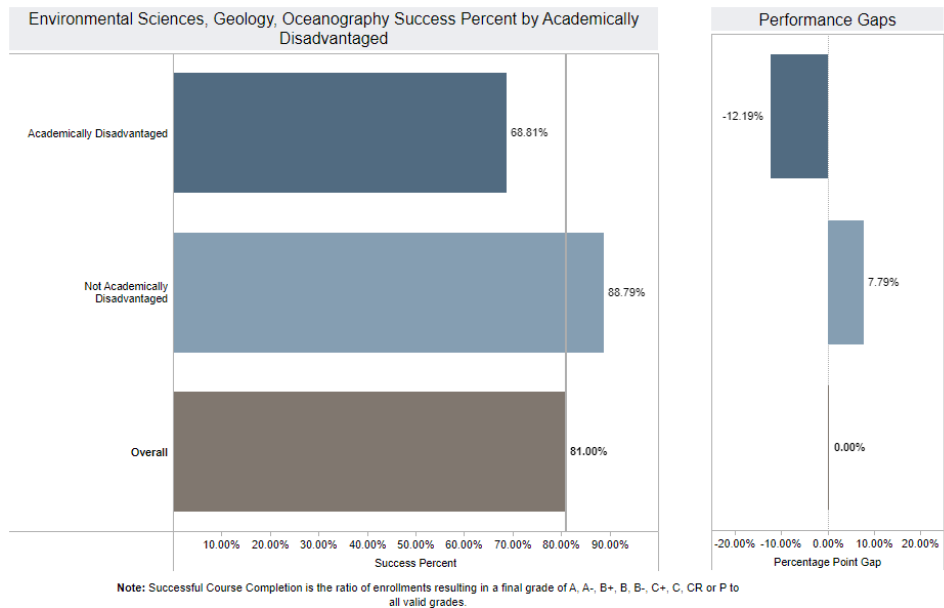


Figure G4: Course completion by academically disadvantaged vs not academically disadvantaged.

Figures G3 and G4 show the largest inequalities by subpopulation are in the categories of race and academically disadvantaged vs non-disadvantaged students.

Both full-time faculty member Emily Kane and part-time faculty member Jennifer Shellhorn completed the JEDI Academy offered by the college in Summer 2022. We are pleased that the faculty teaching the most of EOS available load have chosen to complete this equity-focused professional development academy. We encourage all faculty (in EOS and outside) to take advantage of this opportunity. Both Kane and Shellhorn are actively working to decrease equity gaps in their through implementation of learning from the JEDI academy and beyond. We are hopefully that these efforts will show in the data in the future.

The equity gaps in academically disadvantaged students vs not academically disadvantaged students have been larger for the 2020-21 and 2021-22 school years. This is not unexpected given the switch to fully remote courses for most offerings due to the COVID-19 pandemic.

As a small department we are limited in the number of students we can reach and limited in number of course offerings available. We hope that future hiring of a second full-time faculty member will increase the number of students moving through our courses and therefore increase the data to be analyzed.



### Programs and Curriculum Review PROGRESS

For the following questions, please refer to the 5-year update calendar in the [Curriculum Review Worksheet](#) (or classic template if your last CPPR was conducted before 2023) from your most recent CPPR.

List those programs of study (degrees and/or certificates) and courses that were scheduled for major or minor modification during the \_\_\_\_ year in the 5-year calendar of the Curriculum Review Worksheet.

GEOL 220 and OCEN10 are scheduled to have a curriculum review this year. Both have been completed.

The other courses listed within the 5-year curriculum review document are no longer active.

From the list generated in #1, identify those programs of study and courses that underwent the scheduled modifications during the \_\_\_\_ year. Complete the table below for those items only.

Program of Study OR Prefix and Course #	Major/Minor Modification (select one)	Date completed (semester and year)
GEOL220	Major	Spring 2023
OCEN210	Major	Fall 2023

From the list generated in #1, identify those programs of study and courses that did **not** undergo the modifications for which they were scheduled during the \_\_\_\_ year. Complete the table below for those items only.

Program of Study OR Prefix and Course #	Past Due Date for Modification	Briefly state why modification was not completed on schedule	Re-scheduled date for modification (must be within 1 year)

For the following questions, please refer to Part A, #3 of the previous year’s APPW (please also refer to any APPW completed since your most recent CPPR which have incomplete curriculum updates that aren’t already referenced in the previous year’s APPW).

List those programs of study and courses that are listed in previous APPW that were listed under #3. Complete the table below for those items only. If there were no courses included under #3 of previous APPW, please type "N/A" in the first row of the table.

Program of Study OR Prefix and Course #	Past Due Date for Modification	Re-scheduled date for modification	Completed (yes or no)
N/A			

From the list generated in #1, identify those programs of study and courses that did **not** undergo the modifications for which they were scheduled during the \_\_\_\_ year. Complete the table below for those items only. You may leave this table blank if you wrote "N/A" for the previous table.

Program of Study OR Prefix and Course #	Past Re-scheduled Due Date for Modification	Briefly state why modification was not completed as rescheduled	Second re-scheduled date for modification (must be within 6 months)
N/A			

### Other Relevant Program Data (optional)

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

### Program Outcomes Assessment Checklist and Narrative

#### Checklist

- SLO assessment cycle calendar is up to date.
- All courses scheduled for assessment have been assessed in eLumen.
- Program Sustainability Plan progress report completed (if applicable).

#### Narrative

Briefly describe program changes, if any, which have been implemented in the previous year as a direct result of the Program or Student Services Learning Outcomes Assessment. *If no program changes have been made as results of Program or Student Services Learning Outcomes Assessment, indicate: NONE.*

### Program Planning / Forecasting for the Next Academic Year

Briefly describe any program plans for the upcoming academic year. These may include but are not limited to the following: *(Note: you do not need to respond to each of the items below).* *If there are no forecasted plans for the program, for the upcoming year, indicate: NONE.*

- A. New or modified plans for achieving program-learning outcomes and addressing equity gaps
- B. Anticipated changes in curriculum, scheduling or delivery modality  
Curriculum for EOS courses has been under review for the past two years (since the hiring of a new full time faculty member). Jennifer Shellhorn and Emily Kane had complete curriculum review and updates to each of the following courses as of Spring 2024: GEOL 210, GEOL 211, GEOL 212 (no longer offering), GEOL 229A, GEOL 229B, OCEN 210, and PSCI 211. Both GEOL229C and GEOL229D are new courses as of 2023 school year.
- C. Levels, delivery or types of services  
The 2023-24 school year brought the start of a Dual Enrollment ENVS 200 course taught at Templeton High School. This successful dual enrollment partnership is encouraging and interest in expanding this program with Templeton High School and into other local schools remains. Our ability to expand this dual enrollment program will be limited by faculty load availability. As dual enrollment increases, the need for a second full-time faculty member in EOS will continue to grow.
- D. Facilities changes - none
- E. Staffing projections  
Need increases for a second faculty member within the EOS department, particularly if the dual enrollment of ENVS200 expands at Templeton HS and in other local schools.
- F. Other  
The EOS courses would benefit from more interactive equipment for student engagement and hands-on experiences. EOS purchased a 36-inch plotter printer in Spring 2023 that has been put to great use for materials in GEOL, OCEN, and PSCI labs. EOS is currently looking into purchasing additional camping equipment to ensure all students can attend field courses (GEOL 229A/B).

### Program Sustainability Plan Progress Report

This section only needs to be completed if a program has an existing Program Sustainability Plan. Indicate whether objectives established in your Program Sustainability Plan have been addressed or not, and if improvement targets have been met.

Area of Decline or Challenge	Identified Objective (Paste from PSP)	Planning Steps (Check all that apply)	Has the Improvement Target Been Met?
Enrollment		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Demand (Fill Rate)		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Efficiency (FTES/FTEF)		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Success – Course Completion		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Success — Course Modality		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Degrees and Certificates Awarded		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one

If Program Sustainability Plan is still necessary, provide a brief description of how you plan to continue your PSP and update your PSP to remove any objectives that have been addressed and include any new objectives that are needed.