Status: **Reviewed**

**Entry #:** 267

**Date Submitted:** 9/14/2020 1:30 PM

# OVERVIEW OF PROGRAM REVIEW AND PLANNING FOR INSTRUCTIONAL PROGRAMS

Program Review is about documenting the plans you have for improving student success in your program and sharing that information with the community. Through the review of and reflection on key program elements, program review and planning identifies program strengths as well as strategies necessary to improve the academic discipline, program, or service to support student success. With our new Guided Pathways plan, this review becomes even more crucial for the success of our students and college.

We are using the Strengths, Opportunities, Aspirations, Results (SOAR) strategic planning technique to help us focus on our current strengths and opportunities, create a vision of future aspirations, and consider the results of this approach.

## BASIC PROGRAM INFORMATION

**Academic Year**
2020-2021

**Are you completing a comprehensive or annual PRP?**
Annual

**Department Name**
Trade and Industry

**Discipline Name**
Water Technology Education (WTE)

**Department Chair Name**
Anthony Fedon

**Division Name**
Career, Technical and Extended Education

**Website address for your discipline**
https://www2.palomar.edu/pages/watertech/

**Discipline Mission statement**
Our mission is to educate and prepare students for careers and advancement in the water industry.

Proposed New Mission Statement: Our mission is to educate and prepare students of diverse backgrounds, experiences, and abilities for careers and advancement in the water industry. Our committed, highly trained faculty and partnerships with Local, State and National entities ensure that our graduates will have successful careers that improve their lives, their communities, and the economy.

**(click here for information on how to create a mission statement)**

**Does your discipline have at least one degree or certificate associated with it?**
Yes

**Are any of your programs TOP coded as vocational (CTE/CE)?**
Yes

**List all degrees and certificates offered within this discipline.**
AS Degree
Certificate of Achievement

**Please list the names and positions of everyone who helped to complete this document.**
Jacob Shiba, Assistant Professor, Water/Wastewater Technology Program Coordinator

Use the link to provided to help answer the staffing questions below. This form requires a login and password to access. Please use your Palomar email and password to log in.

Link: Permanent Employees Staff Count

**Full-time Faculty (total number of FT faculty in your discipline)**
1

**Full-time Faculty (FTEF)**
1

**Part-time faculty (FTEF)**
1.5

**Classified and other permanent staff positions that support this discipline**
Shared Academic department Assistant

**Additional hourly staff that support this discipline and/or department**
None

# PROGRAM INFORMATION

In this section you are asked to consider your programs, their learning outcomes, the annual number of completions, goals for completions and enrollment and efficiency trends.

## PROGRAM LEARNING OUTCOMES

Begin this section by reviewing the Program Review reports for programs and courses in Nuventive Improve (TracDat). All active course and program learning outcomes should be systematically assessed over a 3-year cycle. First, look at program learning outcomes.

- **Program** = Leads to a degree or certificate
- **Discipline** = A group of courses within a discipline

*Programs will be able to complete program completion and outcome questions.

**How well do your program's learning outcomes communicate the scope and depth of the degree/certificate offered?**
Program learning outcomes are well defined and show the student expected outcomes after completing the program. Expectations in the categories of Calculations, Equipment and Nomenclature, Problem Solving, Regulations, Oral Communications, and Written Communications provide detail on scope and depth of the awards offered. However, technology needs to be emphasized in the equipment-related Program Learning Outcome (PLO) to better align with ever-evolving technological advancements.

**How do they align with employer and transfer expectations?**
Program learning outcomes appropriately articulate industry expectations. Expectations in the categories of Calculations, Equipment and Nomenclature, Problem Solving, Regulations, Oral Communications, and Written Communications align with employer expectations. Courses are currently at the 50-99 level and need to be brought to the 100-199 level to transfer credit.

**Describe your program's plan for assessing program learning outcomes.**
The adequacy and accuracy of current PLOs are discussed with faculty, the Department Chair, and occasionally with the Division Dean. If any changes to PLOs are considered, the agenda for the next Advisory Board meeting will include recommendations for changes to PLOs. The Advisory Board will consider if the recommendations align with industry expectations and form a consensus to the final wording for editing. The program coordinator will make agreed-upon changes to PLOs.

**Summarize the major findings of your program outcomes assessments.**
There were no recommended changes to PLOs at the last Advisory Board meeting, or meetings leading up to the Advisory Board meeting. However, it was agreed that courses need to be brought to the 100 level. PLOs accurately reflect the needs of and expectations from of the water industry. However, changes to the equipment-related PLO that address evolving technology may need to be addressed at future faculty and Advisory Board meetings.

## PROGRAM COMPLETIONS

Student success is at the core of what we do in assisting students in achieving their goals.

The Chancellor's Office Vision for Success stresses the importance of Program Completion as a major goal for our students. In addition, transfer and career readiness are key components of Palomar College's mission statement. This year, our funding formula has also changed reflecting this emphasis, providing additional funding as a function of the number of completions.

In this section we will identify a program standard and a stretch goal (what you would like to move toward) for program completions.

The standards represent the lowest number of program completions deemed acceptable by the College. In other words, if you were to notice a drop below the set standard, you would seek further information to examine why this occurred and strategies to increase completions.

In this section we will identify a program standard and a stretch goal (what you would like to move toward) for programs.

**List the number of completions for each degree/certificate for the previous year.**
2019/20
AS = 9
CA = 14
2018/19
AS = 2
CA = 3
2017/18
AS = 5
CA = 9
2016/17
AS = 5
CA = 16

**Have your program completions Increased, decreased, or stayed the same over the last 5 years?**
Decreased

**What factors have influenced your completion trends?**
Declines in enrollment and less classes offered has negatively impacted the program completion. Prior to 2019-2020 the program has not had a full time faculty member to be the advocate and voice needed for the program. Without this voice, classes that did not fill the previous year may not have been rolled over without the program coordinator pushing for them to be available. The lack of available classes lead to less student completions. These are the same trends seen for wastewater courses as well.

## Program Information Summary

Consider your program outcome assessments, completions, and enrollment/efficiency trends, as well as other internal and external factors.

**How have these factors contributed to the success of your program(s)?**
Hiring a full time faculty member has added a much needed voice to the program, allowing for the advocation of grant funding, FTEF, course offerings, hiring of new adjunct faculty, increased outreach,etc.

**How have these factors presented challenges for your program(s)?**
FTEF has been a challenge that limits the number of classes offered, thus limiting the program completions and enrollment.

The Chancellor's Office Vision for Success stresses the importance of reducing equity gaps through faster improvements of underrepresented groups.

ACCJC also requires that colleges establish institutional and program level standards in the area of success rates. These standards represent the lowest success rate deemed acceptable by the College. In other words, if you were to notice a drop below the rate, you would seek further information to examine why the drop occurred and strategies to address the rate.

**Click on this link to review the course success rates (A, B, C, or Credit) for your discipline.**

In this section we will identify a course success rate standards and a stretch goal (what you would like to move toward) for programs.

Course Success Rates by gender, age, ethnicity, special population, location, and modality (You can access the Student Equity Plan on the SSEC website https://www2.palomar.edu/pages/ssec/ )

# COURSE INFORMATION

## COURSE SUCCESS AND RETENTION

**What is your program's standard for Discipline COURSE Success Rate?**
75.0%

**Why did you choose this standard?**
The College's institutional standard is 70% and the water technology program would like to exceed the colleges standard.

**What is your stretch goal for course success rates?**
85.0%

**How did you decide upon the goal?**
The overall success rate for all Water courses has only surpassed 85% once in the previous 5 years, so this goal would be a major improvement and is achievable.

**Age: Why do you think age differences exist? What do you need to help close the gap?**
This program has 3 broad categories of students and each category tends to have specific age groups. These categories are:
1. Students new to college who are looking for a career path and tend to be younger.
2. Students who are switching career paths and attempting to get into the water industry and tend to be middle aged.
3. Students who are already in the industry and are attending to complete CEUs for certifications, advance their current certifications, or completing a degree to move to management positions. These students tend to be middle aged as well.
These age gaps will always exist due to the age progression of the workforce.

## COURSE LEARNING OUTCOMES

**How have you improved course-level assessment methods since the last PRP?**
Course-level assessment methods are currently being remodeled. Specific course SLOs are being upgraded to the standard of transfer level outcomes and will be assessed on a 3 year basis.

**Summarize the major findings of your course outcomes assessments.**
Course SLO's have not been updated in years and need to be updated to reflect the KSAs of learning, brought to a transfer level, and designated with specific assessment methods.
Some outcomes will need to address evolving technology.
SLOs are not included in Course Outlines of Record and need to be updated to be included.

**This section is intentionally blank for annual PRPs. Please click "Next" to continue.**

**This section is intentionally blank for annual PRPs. Please click "Next" to continue.**

## CAREER AND LABOR MARKET DATA

The Chancellor's Office Vision for Success stresses the importance of increasing the percent of exiting students who report being employed in their field of study. It is important for us to consider how ***all*** of our programs connect to future careers.

Go to this website https://www.onetonline.org/ and enter your discipline in the bubble on the top right for ideas about potential occupations. Click on an example to see more detail.

**The following websites are for CTE related data:**

- Centers of Excellence (many other data resources besides supply and demand) Password: GetLMI
- LaunchBoard
- LaunchBoard Resource Library
- Chancellor's Office Data Mart
- Career Coach-San Diego Workforce Partnership
- EDD Labor Market Info
- Career One Stop

**What kinds of careers are available for people who complete your programs (and/or transfer)? (Refer to link above) Are there any new or emerging careers and if so how would the new or emerging careers impact your future planning?**
Water plant operators, Distribution system workers, Plant Technology (mechanical and electrical), Regulatory and compliance monitoring and enforcement, Environmental consulting

**What are the associated knowledge, skills, abilities (KSA's) needed for the occupations listed above? (click examples in the link above to get ideas)**
Complex mathematics, biology, chemistry, mechanical and electrical, plant processes, system operation and performance monitoring, operation and control, active listening, quality control analysis, oral and written comprehension and expression, near vision, deductive reasoning.

**How does your program help students build these KSA's?**
Curriculum is specific to diverse functions of plant operations and distribution.

**Work Based Learning**

Applied and work-based learning (WBL) allows students to apply classroom content in professional settings while gaining real-word experience. WBL exists on a continuum that reflects the progress of experiences from awareness-building to training. Students often cycle back through the continuum many times throughout college and throughout their career. Faculty play a critical role in ensuring these experiences are embedded into curriculum and support learning.

**Have you incorporated work based learning (work experience, internships, and/or service learning) into your program?**
Yes

**What have you done to integrate work-based learning?**
Treatment Plant tours, lab classes, in-class certification

**How does your work-based learning help your students learn how to do some of the tasks associated with the potential occupations?**
The lab is designed to simulate work place conditions and situations (improvements are pending dependent upon grant approval). Regional treatment plant tours provide access to staff, facilities and processes in state-of-the-art treatment plants.
Water Resources Control Board certifies students during class time based on their knowledge and ability to monitor, operate and resolve issues simulated in the lab.

**How do you engage with the community to keep them apprised of opportunities in your program?**
Industry visits with general managers, operations managers and human resources managers; High School job and career fairs, participation in the San Diego Workforce Planning Group, well-developed web site incorporating career paths and plans with course mapping.

**What is the regional three-year projected occupational growth for your program(s)?**
1.435 water/wastewater utility jobs available within the San Diego Region over the next three to four years,

**What is being done at the program level to assist students with job placement and workforce preparedness?**
Working closely with San Diego Regional Water/Wastewater Internship Program
Including career paths and links to regulatory agencies and industry associations providing certifications in curriculum and program web page
Maintaining a partnership with industry and HR managers - announcing and posting job opportunities in all classes and on Canvas

**When was your program's last advisory meeting held? What significant information was learned from that meeting?**
October 18, 2018. Consensus on a new mission statement; move toward a single "water" program rather than water and wastewater programs, but maintain the distinct awards; pursue mini-certificates; send e-mail blast during budget preparations to remind operating managers to include training in their budgets; Minor curriculum changes.

**What are the San Diego County/Imperial County Job Openings?**
1.435 long-term water/wastewater utility jobs available within the San Diego Region over the next three to four years,
No data available for short term projected job openings

# Program Goals

In the previous sections, you identified opportunities for improvement. Using these opportunities, develop 3-year SMART goals for your department. Goals should be Specific, Measurable, Attainable, Relevant, Time-Specific. Ensure your goals align with the mission of your department and/or the College's strategic plan.

Please list all discipline goals for this three-year planning cycle. Click here for previous PRPs and goal information.

## Goals

### Goal 1

**Brief Description**
Purchase supplies and equipment to fully outfit the new water/wastewater lab with the latest technology in water delivery systems

**Is this a new or existing goal?**
Existing

**Goal Status**
Ongoing

**How will you complete this goal?**
Goal was partially completed with improvement to the outdoor wet stations with Perkins funding from year 2019-2020. Goal is also in progress with recent award of the 2020-2021 Perkins grant funding to purchase SCADA stations and equipment (laptops, licensing, PLCs, tank level monitors, etc).

**Outcome(s) expected (qualitative/quantitative)**
State of the art instructional facilities to better prepare students for technology used in practice today
Increased enrollment and expansion of advanced courses.

**How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?**
This goal will help ensure that our students have hands on learning experience with the same technologies being used in the industry. By giving hands on experiences, students will learn about the career path and decide if this is the right path for them (Pillar 1 and 2). Once enrolled and while continuing to progress through classes students become increasingly challenged, learn more in-depth concepts, and obtain industry certifications along the way (Pillars 3 and 4).

**Expected Goal Completion Date**
6/1/2021

### Goal 2

**Brief Description**
Fund a full-time faculty position

**Is this a new or existing goal?**
Existing

**Goal Status**
Completed

**How will you complete this goal?**

**Outcome(s) expected (qualitative/quantitative)**
Having a champion of the program with consistent administration and industry partnering and outreach.
Increase the number of classes offered, including daytime classes, and program enrollment.
Increase program enrollment efficiency - WSCH/FTEF

**How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?**
Strengthen efforts to improve outreach, persistence, and student success.
Ensure the fiscal stability of the college and increase enrollments.
Educate and prepare students for careers and advancement in the water industry.

**Expected Goal Completion Date**
8/19/2019

## Goal 3

**Brief Description**
Revise curriculum to improve program

**Is this a new or existing goal?**
Existing

**Goal Status**
Ongoing

**How will you complete this goal?**
Implementing changes embraced by the Advisory Board (requiring Lab Analysis class for awards, include procedures and practices specific to brewing industry discharge in the Lab Analysis curriculum, etc.).
Converting all courses to transfer level courses through review and improvement of SLO's and COR's.
Re-evaluate textbooks and other resource materials to maintain relevance to changes in technology and regulations.

**Outcome(s) expected (qualitative/quantitative)**
Curriculum that aligns with what industry anticipates from the program.
Classes that transfer for students who wish to pursue advanced degrees.

**How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?**
Improving curricula and raising the course standards will help to educate and prepare students for careers and advancement in the water industry. This will also help bring more students to enter the pathway (pillar 2) and will help keep them on the right path to completion through well defined SLOs (Pillar 3 and 4).

**Expected Goal Completion Date**
10/1/2021

## Goal 4

**Brief Description**
Increase program awareness, enrollment, and completion

**Is this a new or existing goal?**
Existing

**Goal Status**
Ongoing

**How will you complete this goal?**
Increase outreach efforts with local institutions such as high schools, water agencies, industry groups/associations through career fairs, job fairs, presentations, demonstrations, and industry networking.
Some new marketing materials have been created and designed specifically for high school students. These were distributed in Spring and Summer 2020, but presented unique challenges due to a lack on in-person events because of COVID. An Instagram was also created and will be constantly utilized to expand outreach.
A hands on demonstration display was recently purchased with grant funding and will be utilized at future career and job fairs once in-person events resume.

**Outcome(s) expected (qualitative/quantitative)**
Increased enrollment and therefore increase program completions.

**How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?**
In increasing enrollment and completions, Palomar will be providing high quality students to enter the workforce and advance in the industry. This goal really focuses on the first 2 pillars by creating awareness of the pathway and helping students to enter it.

**Expected Goal Completion Date**
6/1/2022

# RESOURCES

Congratulations! You are nearing completion. In this section, you will consider the resources you need to implement your three-year program review plan and/or address any findings from your assessment of your discipline.

The section is organized into the following four parts:

PART 1: Staffing Needs (Faculty and Additional Staff)

PART 2: Budget Review

PART 3: Technology and Facilities Needs

PART 4: One Time Request for Other Needs (NonTechnology Equipment, Supplies, Operating Expenses, Travel)

## PART 1: STAFFING NEEDS

Requests for faculty will follow the prioritization process currently in place in IPC, and the IPC SubCommittee. Requests for new staff positions will be prioritized at the division level and reviewed at Exec.

**Are you requesting additional full-time faculty?**
No

***NOTE: If you are requesting full-time faculty, you must go back to the Labor Market section of the form to complete that section. It is required when requesting additional faculty positions.***

**Are you requesting new Classified, CAST or AA positions?**
No

## PART 2: BUDGET REVIEW

Review your Budget/Expenditure reports for 2018, 2019, 2020. Consider your three-year PRP plan.

Click on the link below to access directions to the *Available Budget Report* to complete this section.

How to Request the Available Budget Report

**Reflecting on your three-year PRP plan, are there any budget considerations you would like your dean/supervisor to be aware of for the upcoming year?**
Yes

**What budget considerations would you like your dean/supervisor to be aware of or to consider? Please be as specific as possible. For example, if you need an increase in the 40000 account and a decrease in the 23000 account, describe what increase your department needs, how much, and a description of why the department needs the adjustment.**
The water technology program currently offers 2 laboratory classes with an estimated total annual cost of $3,350. Details below.
Laboratory Analysis- Unfortunately, lab equipment can be broken or needs to be replaced to keep up with new technology. It is estimated that one of the following will need to be replaced each year: pH probe- $189, Pocket Pro+ Multi 2 Tester for pH/Cond/TDS/Salinity- $230, Traceable Portable Dissolved Oxygen Meter Pens- $499. There are also lab materials that need to be replaced each year including KIM wipes, standard solutions, various sampling bottles, etc. that total an average of $150 each year. This brings the total to approximately $1,200 including tax and shipping.
Backflow- This lab requires constant maintenance and upgrading of equipment utilized every lab period by students. Backflow test kits need to be replaced when broken or as they degrade over time and it is estimated we will need to purchase one per year- $850. Majority of backflow devices currently being used have been donated by local water agencies, but they need to be maintained and eventually replaced. Averaging one per year at a cost of $750 for the backflow device and $250 for connecting pipe and material. The total cost for this is estimated to be $2,150 including tax and shipping.

Water Tech was recently awarded $22,000 from Perkins that will go toward upgrading our outdoor water lab, installing water level monitors that will allow us to measure tank water level, and a control system that will simulate a real life SCADA system. This system (which has yet to be used since its installation) will require ongoing maintenance on the existing pumps, motors, valves, and electrical control panel. Some maintenance can be performed by faculty and some will require a qualified technician. The cost for labor is estimated at $110/hour with approximately 8 hours of work to be done in phases each year. Supplies will equilibrate to approximately $1,000 per year, bringing the total to approximately $1,900.

## *NOTE: PARTS 3 and 4 – TECHNOLOGY, FACILITIES AND OTHER NEEDS*

This year the College is implementing two new processes related to resource needs coming from the PRP process.

1. One-Time Fund Requests. The college is implementing a process for prioritizing and allocating funds for one-time needs/requests tied to Program Review and Planning. Prioritization will take place through participatory governance in planning councils and the Budget Committee. Then, a recommendation will be made to Exec for funding of request utilizing various funding sources.

   For more information about funding sources available, see IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES.

   Consider submitting one-time requests only if you have verified that you cannot fund the request using your general discretionary funds or other funds.

2. Technology and Facilities Review. From now on, ALL requests for technology will go through an institutional review process. If you request technology here, you will see a description of the process below.

### PART 3: TECHNOLOGY AND FACILITIES NEEDS

**Will you be requesting any technology (hardware/software) this upcoming year?**
No

**Do you have resource needs that require physical space or modification to physical space?**
No

## PART 4: OTHER ONE-TIME NEEDS

For more information about funding sources available, see IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES. Please check with your department chair on the availability for this cycle.

**Do you have one-time requests for other items (e.g., Non-Technology Equipment, Supplies, Operating Expenses, Travel) that your budget or other funding sources will NOT cover?**
Yes

### Requests

#### Item 1

**What are you requesting?**
Laptops computers

**Estimated Amount of Request.**
$3,240.00

**Will you accept partial funding?**
Yes

**Budget Category**
Supplies

**What PRP plan goal/objective does this request align with?**
Goal 1 and Goal 3

**What Strategic Plan 2022 Goal/Objective does this request align with?**
2:1 2:2 2:4

**Provide a detailed description of the item requested. What is it, and why do you need it? Please be as descriptive as possible. Include in your description how the requested item aligns with your discipline's PRP goals, analysis of PRP data, SLO/SAOs.**
These laptops will help our recently awarded Perkins funding to be utilized to its fullest. As part of the laboratory improvements in Goal 1, these laptops would ensure that all students have full access to the new SCADA software when in class, rather than encouraging students to bring their own laptops. The addition of these laptops will allow for increased access and efficiency in the water lab, limiting student rotations around limited computers. This increased access to technology will improve many of our courses and the program as a whole, helping to ensure its relevance to the ever changing technology that we see in the industry. This will help with goal 4, to increase program awareness, enrollment, and completion.

**Please upload a copy of the quote, if available.**


HP Laptops under $300.PNG
*60.29 KB*

**I confirm that the Program Review is complete and ready to be submitted.**
Yes

**Enter your email address to receive a copy of the PRP to keep for your records.**
jshiba@palomar.edu

# Review

## Chair Review

**Chair Comments**
NECCESSARY BUDGET INCLUDED.
Thanks for updating the program information and the new mission statement.

**Chair Name**
Anthony Fedon

**Chair Sign Date**
10/30/2020

## Dean Review

**Strengths and successes of the discipline as evidenced by the data and analysis:**
Excellent review. Goals are appropriate and attainable. Budget needs have been noted.

**Areas of Concern, if any:**

**Recommendations for improvement:**

**Dean Name**
Margie Fritch

**Dean Sign Date**
11/6/2020

## IPC Review

**Strengths and successes of the discipline as evidenced by the data and analysis:**

**Areas of Concern, if any:**

**Recommendations for improvement:**

**IPC Reviewer(s)**

**IPC Review Date**

## Vice President Review

**Strengths and successes of the discipline as evidenced by the data and analysis:**
strong connection of PLOs to industry expectations; good thought re: improvement of transferrable offerings -- there has been discussion at CURR -- it's complex; new FT faculty; excellent work this past year to strengthen online offerings; good goals

**Areas of Concern, if any:**
1. decreased completions
2. need for updated SLOs
3. need for measurable outcomes for goals

**Recommendations for improvement:**
1. to maximize completions, be sure to have base (1 section for each course needed) 1-year rotation of courses laid out for scheduling. If demand exists to add more sections, discuss with dean.
2. rewrite outcomes for goals to identify baseline and measurable difference to aim for
3. work with dean to connect you to institutional support for outreach and marketing
4. work with chair/dean to identify funding for ongoing resources in time for budget development

**Vice President Name**
Shayla Sivert

**Vice President Sign Date**
1/2/2021