**INSTITUTIONAL PROGRAM REVIEW 2011-12**

**Program Efficacy**

**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, (comma not needed here) and to make informed decisions about budget and other campus priorities.

The Institutional Program Review Committee is authorized by the Academic Senate to develop and monitor the college Program Review process, receive unit plans, utilize assessments as needed to evaluate programs, recommend program status to the college president, identify the need for faculty and instructional equipment, and interface with other college committees to ensure institutional priorities are met.

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 or requesting information from appropriate committees

Our Program Review process is two-fold.  It includes an annual campus-wide needs assessment in the fall, (comma not needed here)and an in-depth review of each program every three years that we call the Program Efficacy phase.  Instructional programs are evaluated the year after content review, and every three years thereafter, and other programs are placed on a three-year cycle by the appropriate Vice President.

An team of three disinterested committee members will meet with you to carefully review and discuss your 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 included with this e-mail

When you are writing your program evaluation, you may contact efficacy team assigned to review your department or your division representatives for feedback and input.  The list of readers is being sent to you with these forms as a separate attachment.

Completed documents should be sent to, Program Review Co-Chairs and your Division Dean by November 2, 2011. *It is the writer’s responsibility to be sure the Committee receives the forms on time.*

In response to campus wide feedback that program review be a more interactive process, the committee piloted a new program efficacy process in Spring 2010 that included a review team who will interview and/or tour a program area during the efficacy process. Another campus concern focused on the duplication of information required for campus reports. The efficacy process now incorporates the Educational Master Plan One-Page Summary (EMP Summary) and strives to reduce duplication of information while maintaining a high quality efficacy process.

**Program Efficacy, 2011/2012**

Complete this cover sheet as the first page of your report.

**Program Being Evaluated**

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| Water Supply Technology |

**Name of Division**

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| --- |
| Science and Health Science |

**Name of Person Preparing this Report                                                  Extension**

|  |
| --- |
| Achala Chatterjee 909-384-8522 |

**Name of Department Members Consulted**

|  |
| --- |
| N/A (one person department) |

**Name of Reviewers**

|  |
| --- |
| Deanna Rabon, Denis Kight, Celia Huston |

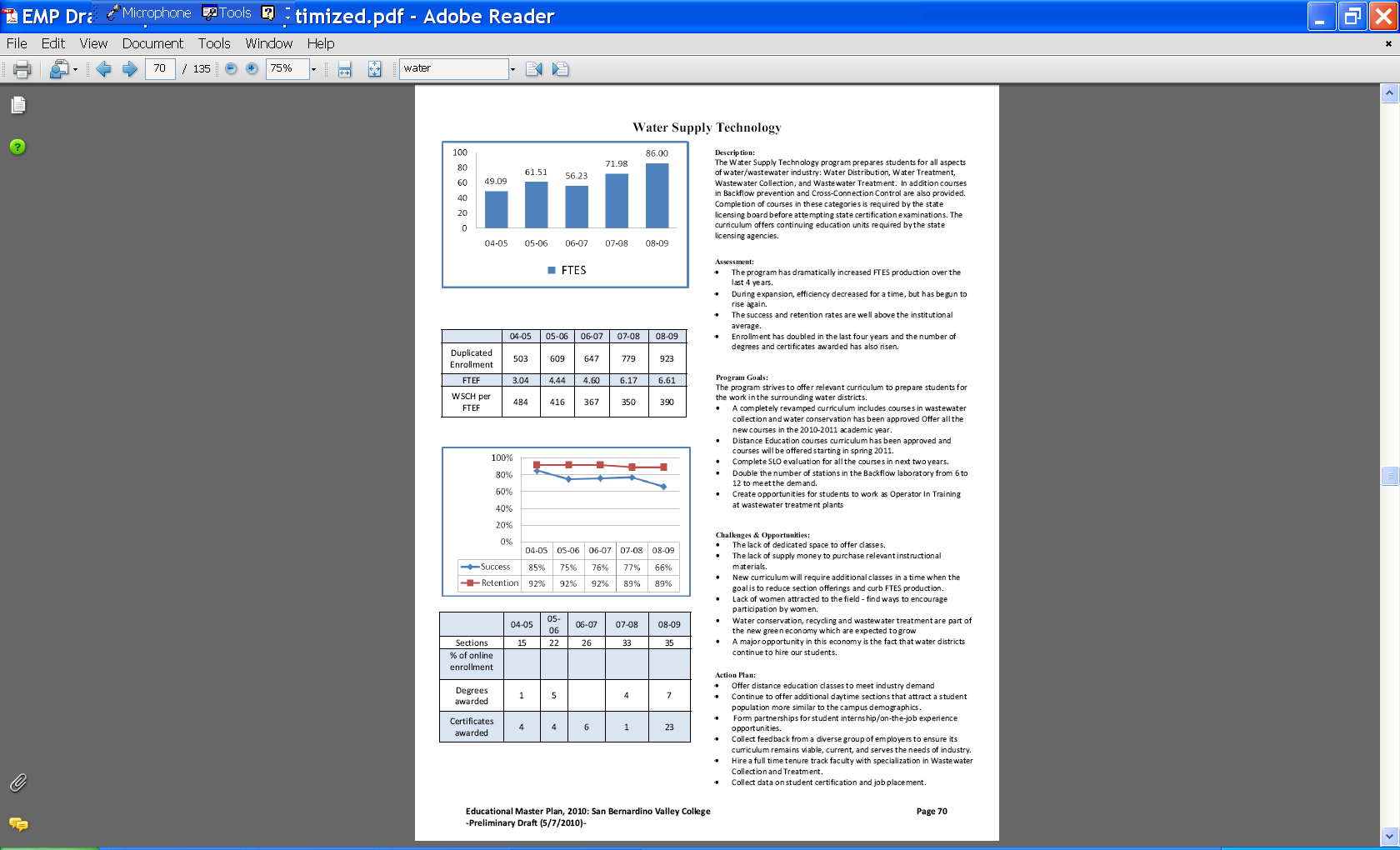
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| --- | --- | --- |
| **Work Flow** | **Due Date** | **Date Submitted** |
| Date of initial meeting with department | N/A |  |
| Rough Draft submitted to Program Review Team | 10/19/11 |  |
| Report submitted to Program Review Team | 11/02/11 |  |
|  |  |  |

**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 | 1 (Division Dean) | 0 | 0 |
| Faculty | 1 | 0 | 7 |
| Classified Staff | 0 | 0 | 0 |
| **Total** | 1 | 0 | 7 |

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|  | FTES | |  | | --- | |  | |  | Chart 1 |  |  |  |  |  |  |
| 06-07 | 56.23 |  |  |  |  |  |  |  |  |  |
| 07-08 | 71.98 |  |  |  |  |  |  |  |  |  |
| 08-09 | 86.00 |  |  |  |  |  |  |  |  |  |
| 09-10 | 102.96 |  |  |  |  |  |  |  |  |  |
| 10-11 | 86.83 |  |  |  |  |  |  |  |  |  |
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|  |  |  |  | Chart 2 |  |  |  |  |  |  |
|  | | 04-05 | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 |  |  |
| Duplicated Enrollment | | 503 | 609 | 647 | 779 | 923 | 1,083 | 1,015 |  |  |
| FTEF | | 3.04 | 4.44 | 4.60 | 6.17 | 6.61 | 6.61 | 7.04 |  |  |
| WSCH per FTEF | | 484 | 416 | 367 | 350 | 390 | 467 | 370 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  | Chart 3 | |  | | --- | |  | |  |  |  |  |  |  |  |
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|  | Success | Retention | |  |  |  |  |  |  |  |
| 06-07 | 76% | 92% |  |  |  |  |  |  |  |  |
| 07-08 | 77% | 89% |  |  |  |  |  |  |  |  |
| 08-09 | 66% | 89% |  |  |  |  |  |  |  |  |
| 09-10 | 75% | 86% |  |  |  |  |  |  |  |  |
| 10-11 | 71% | 86% |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Chart 4 |  |  |  |  |  |
|  | | 04-05 | 05-06 | 06-07 | 07-08 | 08-09 | 09-10 | 10-11 |  |  |
| Sections | | 15 | 22 | 26 | 33 | 36 | 41 | 47 |  |  |
| % of online enrollment | | 0% | 0% | 0% | 0% | 3% | 2% | 2% |  |  |
| Degrees awarded | | 1 | 5 | 0 | 4 | 7 | 6 |  |  |  |
| Certificates awarded | | 4 | 4 | 6 | 1 | 23 | 33 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Data includes: SBVC, SOFF and SBBHS | | | |  |  |  |  |  |  |  |

**Part I.  Questions Related to Strategic Initiative: Access**

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

**Demographic Information**

| **Strategic Initiative** | **Institutional Expectations** | |
| --- | --- | --- |
| **Does Not Meet** | **Meets** |
| **Part I: Access** | | |
| 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.  If warranted, discuss the plans or activities that are in place to recruit and retain underserved populations. |
| 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.  If warranted, plans or activities are in place to meet a broader range of needs. |

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| Water Supply Technology |  | Campus |
| 11.02% | **African-American** | 18.55 |
| 3.06% | **Asian** | 4.42 |
| 1.02% | **Native American** | 0.74 |
| 1.02% | **Pacific Islander** | 1.35 |
| 1.43% | **Filipino** | 1.91 |
| 51.63% | **Hispanic** | 48.62 |
| 28.78% | **White** | 20.32 |
| 0.61% | **Multi-Ethnicity** | 1.35 |
| 1.43% | **Unknown** | 3.48 |
| 92.01% | **% - Male** | 41.4 |
| 7.55% | **% - Female** | 58.4 |

Does the program population reflect the college’s population?  Is this an issue of concern?  If not, why not? If so, what steps are you taking to address the issue?

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| The program reflects the college demographics in terms of race/ethnicity, but it is radically different in terms of gender. Only 7.55% of students are female. The water industry is a very male dominated industry. The population survey 2011, (<http://www.bls.gov/cps/cpsaat11.pdf>) from the Bureau of Labor Statistics, shows that 5.9% women are employed in the occupation field “Water and liquid waste treatment plant and system operators”. Entry-level positions require outdoor work and can involve heavy manual labor. Cultural norms keep women away from these kinds of career. Since any trained individual can perform well in this field and entry-level pay at the skill level is higher than average, the program is encouraging women to enter the field. The department is offering classes when it is more convenient for women to attend.  This program evolved to serve those working in the water industry, so majority of classes are offered at night. Women who have prime responsibility for care of children are unable to enroll in the evening classes. Four years ago we introduced two shorter-term courses, which begin at 8 AM and end by noon. More women enroll in the morning classes than in the program overall. The morning program needs to be expanded to add a Water Math class, but due to budget cuts it has not possible to add more sections in last two years.  .  Department has worked with the Math Department to offer an eight week Math Basic Skills class (MATH 942) class followed by Water Distribution I class (WST 061) in fall 2012. The student would enroll in both the classes and form a learning community supported by tutoring services. This has been made possible by the STEM grant that SBVC received last month. We expect that the learning community would improve success rate for any students but would especially help women who have been culturally discouraged from pursuing careers in math related fields.  Two years ago, a new course in Water Use Efficiency and Conservation was added to the program. This is a growing field and is not physically demanding. The course is offered every third or fourth semester, because of budget cuts and fills up quickly. This course attracts more women into the program.  In the last three years, African American student enrollment has decreased from 18.4% to 11.02% and Hispanic student enrollment has increased from 42% to 51%. This is probably due to the large number of cuts in the construction jobs in the inland empire. Many of the displaced construction workers are Hispanics and they are enrolling in the program to seek alternate career. We are watching the trend. Last spring, the department chair interviewed with editor of San Bernardino Precinct Reporter, a weekly free newspaper, which covers ethnic, cultural and diversity issues. The newspaper interview generated interest in the program in the African American community as reflected in the number of telephone inquiry from potential African American students.  The Department has just received a grant from the Veteran’s Administration. This grant covers tuition as well as paid internship for returning veterans, many of whom are unemployed. I believe this grant will also help improve the number of women, African American, and immigrant student enrollment in the program and find work in the field upon graduation. Among veterans between ages of 18 and 64 years old, 13.% are African Americans, and 6% are Hispanic, 80% are white. In the last few years there has been an increase in the number of women and immigrant enlistees in the armed services. This is due to societal acceptance of women in the military and because enlistment provides a quicker path to citizenship for immigrants. |

**Pattern of Service**

How does 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.

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| Majority of classes are offered in the evening, one night per week format, in both full-semester and short-term formats. The program has experimented with two nights per week format, but it has not worked. This program evolved to serve those working in the water industry and we continue to strive to serve them as we expand the program to include underserved population.  Very few community colleges offer courses in Water Technology and Mount San Antonio and Citrus College shut down their water program due to budget cuts. Students enrolled in the program commute from as far away as Palm Spring, Whittier, and Victorville. These students find it easier to commute once a week to class rather than come for multiple meetings.  We also offered two classes in Hybrid format but success rate was low so the department has decided not offer any DE classes till we are able to provide better support services to the on-line students.  People who work on night shift, people who depend on public transportation and parents who have prime responsibility for the care of children are unable to enroll in the evening classes. Four years ago we introduced two shorter-term courses, which begin at 8 AM and end by noon. More women enroll in the morning classes than in the program overall. Some night shift workers and students who commute by bus or bicycle attend the morning class. The morning program needs to be expanded to add a Water Math class, but due to budget cuts it is not possible to add more sections currently.  We offer one section of Water/Wastewater Lab Analysis class on Saturday. The class is very successful. On Saturday, we are also able to use the Wastewater Analysis lab at the City of Redlands to conduct experiments for which our labs are not equipped.  In the past we have tried offering Water Technology Math class on Saturday. Since tutoring services are not available on Saturdays, the Saturday math class had limited success. Once the Student Success Center starts offering tutoring on Saturday, we will offer Math classes on Saturday.  The Water program is not large enough to offer a full palate of courses both in the morning and in the evening only format. And the current budget cuts are hampering our growth. The department has created a two-year plan so that every course is scheduled at least once in four semesters. This allows all the students to prepare a graduation plan and complete their degree/certification requirement within 2 years. |

**Part II: Questions Related to Strategic Initiative: Student Success**

| **Strategic Initiative** | **Institutional Expectations** | |
| --- | --- | --- |
| **Does Not Meet** | **Meets** |
| **Part II: Student Success - Rubric** | | |
| Data 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.  If applicable, supplemental data is analyzed. |
| Student Learning Outcomes and/or Student Achievement Outcomes | Program has not demonstrated that they have made progress on Student Learning Outcomes (SLOs) and/or Service Area Outcomes (SAOs) based on the plans of the college since their last program efficacy. | Program has demonstrated that they have made progress on Student Learning Outcomes (SLOs) and/or Service Area Outcomes (SAOs) based on the plans of the college since their last program efficacy. |

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 3 & 4 that address Success & Retention and Degrees and Certificates Awarded” on page 3 of this form.)

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| The success and the retention rate is above the institution rate as a whole. However the success had declined in 08-09 from previous years, but picked up in 09-10 and dipped slightly in 10-11.  Retention rates have declined somewhat in the last five years, as the program has grown steadily. With the introduction of morning classes, non-traditional students, who are not employed in the industry, are enrolling in the program in larger numbers. The students who do not work in the industry do not have exposure and familiarity with some of the hardware and the “special” water lingo associated with the field.  The department is working hard to mitigate this problem with additional field trips and video clips to give exposure to the actual working of water treatment plants. We are also expanding the opportunities for students to get internship and work experience at local water companies to expose them to the benefits that would accrue on completion of the program.  The students who work in the industry are highly motivated to complete the course because their continuing of employment is contingent on completing the course and passing the state certification exams. Other students may lose interest in the program as the semester progresses and do not have that level of commitment in completing the program. This appears to be the cause of the decline in retention as well as success rate.  The number of certificates and degrees awarded increased steadily from 2008 to 2010. Effective in fall 2010, the curriculum for the water program changed dramatically. The number of courses offered increased from 11 to 19. Advance level courses which enable students to receive higher level certifications were added. The requirements for receiving certificates and degree became lot more stringent with addition of courses in Chemistry, Computer literacy, Math, and English, This update was necessary to meet the needs of the water/wastewater industry and was recommended by our Industry Advisory Board. The higher level courses have smaller class sizes than beginning level classes. In order to offer the higher level courses, the department was forced to cut some sections of the beginning level courses. This has affected the program efficiency. We are watching the success rate and the number of certificates issued. We believe that once the new curriculum gets established and publicized, the enrollment in the upper level classes will grow and the efficiency will improve. We also expect the number of certificates issued to grow, albeit slowly.  Water/wastewater industry is highly regulated. In order to find jobs in the industry the students have to pass state administered certification exams. Each course in the program is designed to prepare students to take one or more state certification exam. Many students do not complete the SBVC certificate or degree requirements because the state issued certifications/license(s) is(are) sufficient to gain entry level employment in the field. Some students work for a few years and then enroll again to obtain degrees and certificate later in the career when they want to get promoted to supervisory levels.  This year the department has hired a tutor to help students with Water Math for 8 hours a week. This tutor is funded by grant money. Since 30% of the questions in the license exams are math based this will help in improving the success rate in the state exams.  This year the curriculum for WST 061 was updated to include MATH942 as a pre-requisite course. The Water and Math department have collaborated to offer a MATH 942 (Arithmetic) course in tandem with WST 061 course (water Distribution) to form a community of learner in fall 2012. We believe that student success rate would improve by forming this community. |

**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.

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| The licensure pass rate is of great interest to the department. However, the department has no reliable way to collect student performance data on the state administered tests. The state tests do not follow the college semester calendar and students take the license exams months after they complete the course. Individual instructors call students to find out how they performed on the tests, but the data is unreliable and incomplete since every student cannot be reached. Anecdotally, the success rate seems to be pretty high.  **The American Water Works Industry report as published in the October 2011 issue of *Journal AWWA*:** (<http://www.linkedin.com/news?viewArticle=&articleID=818333800&gid=4116146&type=member&item=73907031&articleURL=http%3A%2F%2Fwww%2Eawwa%2Eorg%2Fpublications%2FAWWAJournalArticle%2Ecfm%3Fitemnumber%3D57580&urlhash=F0ig&trk=group_most_popular-0-b-shrtt> ) found that workforce issues is still among the top critical issue. Survey results indicated that the recent recession has slowed down the departure of industry professionals because those nearing retirement age have seen their nest eggs devalued. However an upturn in financial outlook could result in a pent up surge of workers leaving the industry. The 2011 survey indicates that approximately 23% of operators will be retiring in next five years. The proportion of near-retirement age employees in the field of water and wastewater technology is especially high and large number of new workers must be ready to fill these positions.  When requested by the department, a survey on Water/ Wastewater Industry for Southern California was conducted by the Center of Excellence, Economic and Workforce Development. A preliminary report was published in April 2011 (<http://www.coeccc.net/water>). This survey found that 4,640 new and replacement jobs will be created in the next 3 years in Southern California. A large majority of employers for the seven occupation categories of water/wastewater industry expressed interest in community college programs and incumbent worker training. The highest level of interest was expressed for wastewater treatment and wastewater collection operator training. Majority of responding employers expressed an interest in establishing apprenticeship program. The Center of Excellence will be releasing a more detailed report before the end of this year.  The program is going to grow at a steady rate as the jobs are local and cannot be outsourced to other countries or even other states. |

**Student Learning Outcomes and/or Student Area Outcomes**

**Demonstrate that your program has continued to make progress on Student Learning Outcomes (SLOs) and/or Service Area Outcome (SAOs) based on the plans of the college since the program’s last efficacy report.**

**See** [**Strategic Initiative 5.1**](http://www.valleycollege.edu/~/media/Files/SBCCD/SBVC/president/College%20Planning%20Documents/StrategicInitiativesandBenchmarksMasterFormFinal.ashx)

|  |
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| .  The program has collected date for student learning outcomes for select classes. Since the entire curriculum was revised in 2010 we need to analyze the data for the updated program. In the next two years we will be collecting data for all the courses every single semester.  We have not yet analyzed the data for trends. Having only one full time faculty in the program has hampered the effort to analyze the data in a timely manner. The plan is to continue to collect the data for all the courses every semester, however the data analysis will be performed every 2 years. In spring 2012 we will analyze all the beginning courses in water treatment and distribution WST 061, 062, and WST 071, 072. In fall 2012, we will analyze beginning level courses in wastewater collection, wastewater treatment, backflow prevention and water math - WST 081, 091, 045 and 052. In spring 2013 we will analyze cross connection control, water/wastewater lab and water conservation course - WST 048, 074, 031. In fall 2013 we will analyze rest of the courses in the program - WST 063, 073, 092 and 082. In fall 2013 the cycle will begin again.  Developing the programmatic SLO is going to be very difficult as this area is subdivided into six different fields – water treatment, water distribution, wastewater collection, wastewater treatment, backflow prevention and cross connection control, and water conservation. Each of the six areas has unique licensing requirement and each area is governed by a different state or county agency. The department will developing new measurable SLOs for the program. Trying to get state licensing data and pass rate for individual students from the State agency has proved to be very difficult. |

**Part III. Questions Related to Strategic Initiative: Institutional Effectiveness**

| **Strategic Initiative** | **Institutional Expectations** | |
| --- | --- | --- |
| **Does Not Meet** | **Meets** |
| **Part III: Institutional Effectiveness - Rubric** | | |
| Mission and Purpose | The program does not have a mission, or it does not clearly link with the institutional mission. | The program has a mission, 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. |
| Relevance, Currency, Articulation | The program does not provide evidence that it is relevant, current, and that courses articulate with CSU/UC, if appropriate. | 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 are in place to articulate appropriate courses. |

**Mission and Purpose:**

*SBVC Mission: San Bernardino Valley College provides quality education and services that support a diverse community of learners.*

What is the mission statement of the program?

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| --- |
| The mission of the water program is to provide quality education and training for entry level positions and beyond in Water Treatment, Water Distribution, Wastewater Treatment, Wastewater Collection, Water Conservation, Backflow Prevention and Cross Connection Control. |

How does this purpose relate to the college mission?

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| --- |
| The water program prepares students for the workforce and for career development and provides training for incumbent workers. SBVC mission is to support a diverse community of learners. The water program provides training for students who like to work outdoors and with their hands. The program trains worker who want to obtain good, stable jobs after one or two years of training. |

**Productivity**

Provide additional analysis and explanation of the productivity data and narrative in the EMP Summary, if needed. (Use data from charts 1 and 2 (FTEs; Enrollment; FTFE and WSCH per FTFE) on page 3 of this form). Explain any unique aspects of the program that impact productivity data for example; Federal Guidelines, Perkins, number of workstations, licenses etc…

|  |
| --- |
| The program summary shows that the WSCH/FTEF has been fluctuating as the department was experimenting with morning schedule, new course offerings, distance education format, and expanding enrollment in the last few years.  As we increased number of sections in 2008, the efficiency fell. It improved in 2009 and again fell in 2010. In 2010, we offered a brand new curriculum. Several new courses were offered and enrollment in the new classes was lower. This is mainly because potential student were not yet aware that we offered the upper level courses. We are advertising the courses to utility companies and expect the classes to be full in near when we next offer them. In 2010 we offered on-line courses. The drop out and failure rate in the on-line classes was much higher than in our on-campus courses. |

**Relevance and Currency, Articulation of Curriculum**

If applicable to your area, describe your curriculum by answering the following questions.

The Content Review Summary from Curricunet indicates the program’s current curriculum status. If curriculum is out of date, explain the circumstances surrounding the error and plans to remedy the discrepancy.

Click here to enter text.The Content Review Summary from the Curricunet indicates that all the courses are current.

Articulation and Transfer

|  |  |  |
| --- | --- | --- |
| List Courses above 100 where articulation or transfer is **not** occurring | With CSU | With UC |
| None of the courses transfer |  |  |
|  |  |  |
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Describe your plans to make course qualify for articulation or transfer.

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| N/A |

**Currency**

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

Is the information given accurate? Which courses are no longer being offered? (Include Course # and Title of the Course). If not, how does the program plan to remedy the discrepancy?

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| The information given is accurate. One of the courses, WST 061, was recently updated to include MATH 942 as pre-requisite to improve the success rate. The updated data will be reflected in fall 2012 catalog |
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**Part IV. Planning**

| **Strategic Initiative** | **Institutional Expectations** | |
| --- | --- | --- |
| **Does Not Meet** | **Meets** |
| **Part IV: Planning - Rubric** | | |
| Trends | The program does not identify major trends, or the plans are not supported by the data and information provided. | The program ~~(hyphen not needed here—oops—it looks like a deletion line~~identifies and describes major trends in the field. Program addresses how trends will affect enrollment and planning. Provide data or research from the field for support. |
| Accomplishments | The program does not incorporate accomplishments and strengths into planning. | The program incorporates substantial accomplishments and strengths into planning. |
| Challenges | The program does not incorporate weaknesses and challenges into planning. | The program incorporates weaknesses and challenges into planning. |

What are the trends, in the field or discipline, impacting your student enrollment/service utilization? How will these trends impact program planning?

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| The industry trend is towards green economy. The water program is the only green program on the SBVC campus. The American Water Works Association survey released in October 2011, indicates that turnover is high among service providers and utilities because of the aging workforce. The national recession has slowed the trend but the industry as a whole is experiencing a concurrent loss in industry experience and know-how.  This loss is occurring at a time when regulations, automation and other aspects of the industry are becoming more complex. The operators must learn about computers and technology on top of the water system components. Our updated certificate includes courses in computer literacy, a chemistry class and basic writing.  We offer a course in Water Conservation to address California’s growing shortage of water and the industry need for trained water conservation specialists. Last year California passed a law requiring urban areas to reduce water used by 20% for year 2020. As this date approaches, the need water conservation specialist is going to go up. We expect to offer more short term classes for current water company employees to upgrade their skills and offer training for new workers in this area. |

Accomplishments and Strengths

Referencing the narratives in the EMP Summary, provide any additional data or new information regarding the accomplishments of the program, if applicable. In what way does your planning address accomplishments and strengths in the program?

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| The strength of the program is to prepare students with rigorous and current training to obtain licenses in various areas of water technology. The course content of every course is aligned with the expected range of knowledge that would enable them to successfully pass an exam to obtain licenses at a particular grade level. Besides the license, hands-on-experience in the field is very important. The work experience course, WST 098 addresses the field experience. Students who enroll in the work experience class gain valuable experience which enable them to get better jobs at higher pay.  A partnership agreement with San Bernardino Municipal Water Department provides internship opportunities for our students since 2009. Every semester twelve students are selected to by the Water Dept. to work as Operator in Training (OIT). Nine students from the OIT program were hired in the last year – Four by San Bernardino Municipal Water Department, one by San Bernardino County Special District, One by City of Inglewood, one by City of Dana Point, and one by City of Oceanside.  In 2010 the program was expanded to provide OIT opportunity for students with the City of Redlands. Out of five students placed at the City of Redlands, one has been hired as permanent employee and others are still working as OITs.  We have just received a grant from the Veteran’s Department. This grant will help pay stipend for the OIT while they obtain the training. Currently we have agreement with the City of Yucaipa and the City of Redlands to provide OIT opportunities to the veterans. The department is in the process of working out agreements with the Inland Empire Utility Agency and Metropolitan Water District to provide similar training opportunities. We expect to start placing students in the program by spring 2012.  As California and rest of the world faces climate changes and population growth resulting in increasing demand for clean water, conservation has become a major issue. The California Water Use Bill, also known as 20X2020, which mandates reduction in water use by 20% by the year 2020 has opened up new careers in water as Water Conservation Specialist. We have started offering one course in Water Conservation. This course is very popular and is part of the growing green economy.  The program received the following grants:  California Edison and matching funds from Osher Foundation to provide scholarship for 7 to 10 water students in perpetuity.  The program received a $132,000 to train unemployed workers in water distribution and treatment.  The Metropolitan Water District grant of $10,000 for Greywater to Green Trees project to study the use of grey water for irrigation.  Veteran’s Administration grant to provide water education and work experience to veterans.  We have applied for two additional grants but have not heard the outcome yet. |

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?

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| The department does not have a budget provided by the college. It depends on grant money to provide support services for the students. Without a budget, it is difficult for the department to sustain the growth and the quality of the program simultaneously. We will continue to seek grant to close the budget gap in funding. We will also seek budget form the college.  There is only one full time faculty member in a rapidly growing department. In the last two years the department has received five grants. One faculty cannot keep up with the amount of work required to manage the grants, expand the program, update courses curriculum and advise current and potential students. The program needs another full-time faculty.  With the current cuts in FTES, the department is not able to offer sufficient number of lower division courses to allow it to offer and fill upper level classes. Thus students who have successfully completed lower division courses and obtained beginning level licenses cannot enroll in upper division classes and prepare for advanced level licenses. We have tried to narrow the gap by offering grant funded courses through a grant obtained form the Applied Technology Training Center at San Bernardino Community College District.  The department has moved into the new Physical Science Building. Since the program was not part of the Science Division during the planning process for the building, it has no designated space for Backflow lab in the building. The program continues to use Backflow lab, located in the Technical Division, which needs to be expanded. Currently the lab has only 6 stations to serve 25 students. At a minimum we need to add two more stations, so that students have time to practice manipulation and repair of backflow valves. Backflow prevention license exam has both written and hands-on component. We need to obtain funding to install two new stations. We can obtain the eight valves needed for the stations from the manufacturers of the valves through donations.  We do not have all the equipment needed to run the water/wastewater analysis laboratory class. Currently we use the Chemistry lab and equipment for part of the program and we use the Wastewater Analysis Lab at the City of Redlands for the remaining part of the program. This partnership is working out by scheduling the class on Saturday when the Redland City lab is available for our use. In order to offer the course at other times, we will need to buy the equipment and furnish our lab. |

**V. Questions Related to Strategic Initiative: Technology, Campus Climate and Partnerships.**

| **Part V: Technology, Partnerships & Campus Climate** | | |
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|  | Program does not demonstrate that it incorporates the strategic initiatives of Technology, Partnerships or Campus Climate.  Program does not have plans to implement the strategic initiatives of Technology, Partnerships or Campus Climate | Program demonstrates that it incorporates the strategic initiatives of Technology, Partnerships and/or Campus Climate.  Program has plans to further implement the strategic initiatives of Technology, Partnerships and/or Campus Climate. |

Describe how your program has addressed the strategic initiatives of technology, campus climate and/or partnerships. What plans does your program have to further implement these initiatives.

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| The department has partnered with math department to offer WST 061 course in tandem with WST 942 in fall 2012 to form a learning community. This partnership will help retain more students in the program and higher success rate. We hope to duplicate the success of the Puente Leaning Community in this partnership.  The program has partnered with Applied Technology Training Center of the San Bernardino Community College District (ATTC) to provide water distribution and water conservation courses to displaced workers. These courses will be for-credit courses, but no apportionment will be collected from the state, as they are funded by a grant. This strategy will allow the department to offer sections of upper level courses without going over allotted FTES. In future when college is in a growth mode, and needs the FTES, we will be able to start collecting apportionment for the course. Without this strategy the program would not be able to offer all the needed courses to the student and would shrink.  The program continues to explore computer based interactive activities to enhance student learning. Through the US Environmental Protection Agency, we have received an open source interactive math program. Students participate in problems solving activities as part of homework assignments using the USEPA shareware.  The program has partnered with San Bernardino Water District since February 2009 to provide internship opportunity to our students. The students who have completed the program have found jobs in the community with pay ranging from $14.65/hour to $28.35/hour. We have also partnered with City of Redlands to provide internship for our students. Five students are currently training at the City and one has been hired for full time work.  The internship program will be expanded for military veterans through a grant from Veteran’s Administration. This grant provides paid internship and training. In spring 2012, 5 students will be working at City of Yucaipa and 2 student will be working with City of Redlands through the grant. The department worked closely with State Assemblyman Paul Cook of Yucaipa and the Green Council to obtain this grant.  We plan to partner with American Water Works Association and Santa Anna Regional Discharger Association to find more industry partners so that all the students who wish to obtain internship will be able to find a suitable position.  Since the new website was created, the campus has tracked the number hits each program gets. The Water program received the fourth largest number of hits. Each request for information is answered by the single full time faculty in the program. This is a major challenge. The different licensing/ certification regulation for different areas of the program also a challenge. The program needs another full-time faculty. |