Peralta Community College District

BCC Program Review Template 2011-2012

Below please find the program review form, to be filled out by department chairs and program leaders. These will be reviewed at the college level and then forwarded to the district-wide planning and budgeting process. The information on this form is required for all resource requests – including faculty staffing requests – for the 2012-13 budget year.

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| I. Overview |
| Date Submitted: |  10/10/11 | Administrator: |   K. Johns    |
| BI Download: |  | Dept. Chair: |  S. Garcia, M. Jennings |
| Dept./Program(s):(List departments and programs, including all associate degrees and certificates and components of general education and basic skills) |  Mathematics: AA/AS degree Mathematics: General Education Area 2, Mathematical concepts and  quantitative reasoning;  |
| Campus | Berkeley City College |
| College Mission  | Berkeley City College’s mission is to promote student success, to provide our diverse community with educational opportunities, and to transform lives.*Adopted by the Peralta Board of Trustees April 12, 2005* |
| Unit/Dept/ProgramMission | The Mathematics Department’s mission is to prepare students to succeed in the application of mathematical concepts and computation and quantitative reasoning to problem solving and to provide a full course of study leading to an AS degree for students majoring in mathematics. |
| II. Goals and Outcomes (add lines as needed) |
| II.a. Goals (for each one, cite Institutional Goal(s), Appendix II) |
| Explore and develop accelerated models of instruction for basic skills classes in order to decrease the number of semesters between admission and transfer-level work (Peralta District 2011-2012 Short-Term Goals A.1, A.2, C.2 and BCC 2011-2012 Short Term Goals A.2.1 – A.2.4).Undertake more uniform departmental assessment for all mathematics classes in order to achieve smoother course-to-course and school-to-school transitions (including transfers) and to improve student success rates (Peralta District 2011-2012 Short-Term Goals A.2, C.1 and BCC 2011-2012 Short Term Goals, A.2.4 and C.1). Further develop the new A.S. program in mathematics which was approved in September, 2011.Further develop distance education in the mathematics department. (Peralta District 2011-2012 Short-Term Goals A.1, C.2, D.2).Build an innovative mathematics lab that complements the new accelerated models of basic skills instruction. (Peralta District 2011-2012 Short-Term Goals A.2, C.2, D.2 and BCC 2011-2012 Short Term Goals A.2.1 – A.2.4).Add a formal basic skills program to the mathematics department. (Peralta District 2011-2012 Short-Term Goals A.1, A.2, C.2 and BCC 2011-2012 Short Term Goals A.2.1 – A.2.4).Add a formal statistics and probability program to the mathematics department. (Peralta District 2011-2012 Short-Term Goals C.2).Create three/four new mathematics courses: Discrete Mathematics Introduction to Numerical Analysis,  Mathematics for Elementary Education Majors and/or Mathematics for Liberal Arts Majors |
| II.b. Program Outcomes [for each one, cite ILO(s), Appendix I] |
| PROGRAM OUTCOMES(Mapped to Institutional Learning Outcomes, Appendix I).:Students successfully completing any course of study in mathematics will be able to demonstrate competency in each of the following areas:Communication* *Critically read, write, and communicate mathematical concepts interpersonally, with audience awareness; and*
* *analyze mathematical communications for meaning, purpose, effectiveness, and logic.*

Critical Thinking* *identify problems or arguments yielding to mathematical solution or analysis and isolate facts related to arguments;*
* *use mathematical evidence and sound mathematical reasoning to justify well-informed positions; and*
* *generate multiple solutions to problems and predict consequences.*

Computational Skills* *master computational concepts and apply them to concrete problems; and*
* *demonstrate algorithmic competence.*

Ethics and Personal Responsibility* *analyze the results of their mathematical analysis/problem solving and the impact of resulting actions on society and the self;*

Information Competency* *find, evaluate, use, and communicate information in all its various formats;*
* *use library and online resources and research methodology effectively; and*
* *use technology effectively.*

Self-Awareness & Interpersonal Skills* *analyze their own actions and the perspectives of other persons; and*
* *work effectively with others in groups.*
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| PROGRAM 1: |
| PROGRAM 2: |
| General Education component(s): IGETC Area 2: Mathematical concepts and quantitative reasoning |
| Basic Skills component(s): Arithmetic competence in computation and basic understanding of abstract concepts underlying computation and algorithms |
| III. Evidence [To be pre-filled by District Research] |
| III.a. Institutional Data |
| Enrollment  | Fall 2009 | Fall 2010 | Fall 2011 |
| Census Enrollment (duplicated) | 1915 | 1935 | 1764 |
| Sections (master sections) | 48 | 51 | 42 |
| Total FTES | 267.75 | 265.86 | 246.27 |
| Total FTEF | 13.24 | 13.19 | 11.4 |
| FTES/FTEF | 20.23 | 20.16 | 21.6 |
| **Retention**  |  |  |  |
| Enrolled | 1915 | 1935 | N/A |
| Retained | 1413 | 1409 | N/A |
| % Retained | 77 | 75 | N/A |
| **Success**  |  |  |  |
| Total Graded | 1824 | 1859 | N/A |
| Success | 1074 | 1076 | N/A |
| % Success | 58 | 57 | N/A |
| Withdraw | 411 | 450 | N/A |
| % Withdraw | 22 | 24 | N/A |

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| **Faculty Data (ZZ assignments excluded)** |
|  | **Fall 2011** |
| Contract FTEF | 3.55 |
| Hourly FTEF | 7.6 |
| Extra Service FTEF | 0.25 |
| Total FTEF | 11.4 |
| % Contract/Total | 31.11 |

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| Faculty Data Comparables F2011 (ZZ assignments excluded) (Z assignments excluded) |
|  | Alameda | Berkeley | Laney | Merritt |
| Contract FTEF | 4.86 | 3.55 | 6.9 | 3.92 |
| Hourly FTEF | 4.2 | 7.6 | 11.06 | 1.2 |
| Extra Service FTEF | 0 | 0.25 | 1.11 | 0.69 |
| Total FTEF | 9.06 | 11.4 | 19.07 | 5.81 |
| % Contract/Total | 53.65 | 31.1 | 36.19 | 67.51 |

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| III.b. External Evidence |
| **CTE and Vocational**: Community and labor market relevance. Present evidence of community need based on Advisory Committee input, industry need data, McIntyre Environmental Scan, McKinsey Economic Report, licensure and job placement rates, etc.  |  N/A |

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| III.c. Program Outcome Assessments Since Last Reported (add rows as needed) |  Findings | Action Plans |
| Mathematics:Math 250 Fall 2009Math 253 Fall 2009Math 201 Fall 2010Math 203 Fall 2010Math 13 Spring 2011Math 1 in progress Fall 2011Math 16A in progress Fall 2011 | Overall findings from Student Learning Outcome assessments have indicated that students successfully completing these courses show significant improvement in computational skills but need greater improvement in critical thinking. Full results are available in Taskstream. | Use the findings of 2009-2011 assessments to sharpen future assessments.Extend assessment to include Math 16B, 3A, 3B and 3C. |
| General education component: | See above |  |
| Basic skills component: | See above |  |
| Program Outcome Assessments Narrative\*:We provide an example of Student Learning Outcomes below. These report on Math 203, Intermediate Algebra. The full report on Mathematics Department SLO’s is on Taskstream.**1-Advanced use and understanding of formulas / equations** advanced use and understanding of formulas, equations, inequalities, graphs, and tables in making arguments about real world problems., equations, inequalities, graphs, and tables in making arguments about real world problems**Measure:** Locally developed tests and student self-assessment Direct - Other**Details/Description:** All instructors that taught Math 203, Intermediate Algebra, classes at BCC in Fall 2010 gave the same test in order to evaluate core points of the subject. 141 students took the test. **Acceptable Target:** 60% **Ideal Target:** 75% **Implementation Plan (timeline):** Administer the test before or after the final **Key/Responsible Personnel:** Math Department 2010 **Findings** for Locally developed tests and student self-assessment**Summary of Findings:** Math 203 Outcome set **1) Use and understand formulas, equations, and inequalities** a) Linear Inequalities 1 question was offered for each student and therefore we got 141 answers. Among them 95 were correct, which is more then 67%b) Absolute Value Equalities and Inequalities 2 questions were offered for each student and therefore we got 2x141= 282 answers. Among them 129 were correct, which is less than 46%c) Quadratic Equation 2 questions were offered for each student and therefore we got 2x141= 282 answers. Among them 149 were correct, which is less than 53%**Results:** Acceptable Target Achievement: Not Met **Recommendations:** We will assign additional exercises to allow students more practice in working with exponential and logarithmic functions factoring monomials, using the quadratic formula, and solving absolute value equations and inequalities. **2-Use fundamental algebraic laws** understand and use fundamental algebraic laws, algebraic concepts, techniques, symbols, terms, expressions, and equations to formulate and solve problems including quantative problems arising in science and engineering**Measure:** Locally developed tests and comprehensive final Direct - Student Artifact

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| **Details/Description:** All instructors that taught Math 203 Intermediate Algebra classes at BCC in FALL 2010 gave the same test in order to evaluate core points of the subject. 141 students took the test. **Acceptable Target:** 60% **Ideal Target:** 75% **Implementation Plan (timeline):** Administer the test before or after the final **Key/Responsible Personnel:** Math Department Cadre in Fall 2010  |
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**Findings** for Locally developed tests and comprehensive final**Summary of Findings:** 2) Using Fundamental Algebraic Laws a) In Solving Systems of Linear Equations 1 question was offered for each student and therefore we got 141 answers. Among them 106 were correct, which is more then 75%b) In Factoring of Algebraic monomials 1 question was offered for each student and therefore we got 141 answers. Among them 57 were correct, which is just around 40%**Results:** Acceptable Target Achievement: Not Met **Recommendations:** We will assign additional exercises to allow students more practice in working with exponential and logarithmic functions factoring monomials, using the quadratic formula, and solving absolute value equations and inequalities.  |
| **3-Learn to operate algebraic functions** learn to operate with various algebraic functions**Measure:** Locally developed tests and comprehensive final Direct - Student Artifact **Details/Description:** All instructors that taught Math 203 Intermediate Algebra classes at BCC in FALL 2010 gave the same test in order to evaluate core points of the subject. 141 students took the test. **Acceptable Target:** 60% **Ideal Target:** 75% **Implementation Plan (timeline):** Administer the test before or after the final **Key/Responsible Personnel:** Math Department Cadre in Fall 2010

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| **Findings** for Locally developed tests and comprehensive final |  |

**Summary of Findings:** 3) Operating with Algebraic Functions a) Logarithmic Functions 2 questions were offered for each student and therefore we got 2x141= 282 answers. Among them 107 were correct, which is less than 38%b) Exponential Functions 1 question was offered for each student and therefore we got 141 answers. Among them 22 were correct, which is below 16%**Results:** Acceptable Target Achievement: Not Met **Recommendations:** We will assign additional exercises to allow students more practice in working with exponential and logarithmic functions factoring monomials, using the quadratic formula, and solving absolute value equations and inequalities. * **Credit for Mathematics Department progress with SLO’s goes to Jenny Lowood, Dmitriy Zhiv** **and Rick Wing**
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| III.d. Institutional Goals – Narrative of Unit/Dept/Program activities in support of institutional goals[Please refer to Appendix II for full description of goals/objectives] |
| Discuss all that apply.Advance Student Access, Success & EquityIncrease Transfer and Program Completion RatesEngage our Communities & PartnersBuild Programs of DistinctionCreate a Culture of Innovation & CollaborationDevelop Resources to Advance & Sustain Mission | Advance Student Access, Success & EquityThe mathematics department is  exploring and developing accelerated models of instruction for basic skills  classes to decrease the number of semesters between admission and  transfer-level work. offering new online (distance education) mathematics courses. (Peralta District 2011-2012 Short-Term Goals A.1, A.2, C.2, D.2, E.2 and BCC 2011-2012 Short Term Goals A.2.1 – A.2.4)Increase Transfer and Program Completion RatesThe mathematics department is  undertaking more uniform departmental assessment for all mathematics  classes to achieve smoother course-to-course and school-to-school  transitions (including transfers) and to improve student success rates offering a new A. S. degree in mathematics.(Peralta District 2011-2012 Short-Term Goals A.2, C.1 and BCC 2011-2012 Short Term Goals, A.2.4 and C.1).  Build Programs of DistinctionThe mathematics department is developing and administering Student Learning Outcome assessments and using the results to improve curriculum and instruction.(Peralta District 2011-2012 Short-Term Goals A.2, C.1 and BCC 2011-2012 Short Term Goals, A.2.4 and C.1). Create a Culture of Innovation & CollaborationThe mathematics department is … drawing upon substantial innovative and collaborative efforts on the part  of the faculty, counseling, administrative and Title III staff to develop and  implement the major innovations mentioned above.  developing an online mathematics curriculum. working in collaboration with Berkeley and Aspire High Schools to  provide advanced coursework to high school students.(Peralta District 2011-2012 Short-Term Goals A.1, B.1, E.2)Develop Resources to Advance & Sustain MissionThe mathematics department is participating in the establishment of an innovative mathematics lab at BCC, in collaboration with administration, Title III staff and Learning Resources Center staff. (Peralta District 2011-2012 Short-Term Goals A.1, B.1, E.2) |

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| IV. Action Plans |
| Please describe your plan for responding to the above data. Consider program learning outcomes, institutional goals, external evidence, and BI data. Also, please reference any cross district collaboration with the same discipline at other Peralta colleges. Include overall plans/goals and specific action steps. Add rows as needed.  |
| Action Item | Steps/Timeline | Person(s) Responsible | Supporting Data Source(check all that apply) |
| Build Mathematics A.S. program using only courses currently offered at the college.  |  |  | \_\_Assessment Findings\_\_BI Data\_X\_Insitutional Goals\_\_Other |
| Implement accelerated course of basic skills instruction in mathematics. |  |  | \_X\_Assessment Findings\_\_BI Data\_\_Insitutional Goals\_\_Other |
| Formally create a basic skills program. |  |  | \_\_Assessment Findings\_\_BI Data\_X\_Insitutional Goals\_\_Other |

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| Implement the accelerated prestatistics course.  |  |  | \_X\_Assessment Findings\_\_BI Data\_\_Insitutional Goals\_\_Other |
| Formally create a statistics program. |  |  | \_\_Assessment Findings\_\_BI Data\_X\_Insitutional Goals\_\_Other |
| Add full-time faculty to address disparity between full-time and part-time faculty in the mathematics department, as indicated in the BI faculty data comparables. |  |  | \_\_Assessment Findings\_X\_BI Data\_\_Insitutional Goals\_\_Other |
| Add new courses: Advanced Statistics and  Probability, **Discrete Mathematics,  Introduction to  Numerical Analysis,  Mathematics for  Elementary Education  Majors**  **and/or  Mathematics for Liberal  Arts Majors** |  |  | \_\_Assessment Findings\_\_BI Data\_X\_Insitutional Goals\_\_Other |
| Foster a sense of shared professionalism among faculty in the mathematics department |  |  | \_\_Assessment Findings\_\_BI Data\_\_Insitutional Goals\_X\_Other |
| V. Resource Needs  | Link to Action Plans (Section IV) |
| Please describe and prioritize any **faculty, classified, and student assistant** needs.  More FTE’s to meet student demand and decrease maximum enrollment per class to 30 At least two more full-time faculty positions More student teaching assistant positions More tutors | **Add full-time faculty to address disparity between full-time and part-time faculty in the mathematics department, as indicated in the BI faculty data comparables.** |
| Please describe and prioritize any **equipment, material, and supply** needs.Two new computers for current Mathematics Department office  (Room 551) for use of both contract and hourly faculty) At least one more office with desks, computers and  cabinet/bookshelf space for use of both contract and hourly  facultySupplies: Dry erase markers, plastic glovesContinuing Education for faculty: Small library with one copy of  each text used in our curriculum and those of UC Berkeley,  CSU East Bay, SFSUContinuing Education for faculty: Subscriptions to mathematical  journals published by the American Mathematical society, the  Mathematical Association of America and the National Council  of Teachers of Mathematics | **Build the Mathematics A.S. program.**Add new courses: Advanced Statistics and Probability **Discrete Mathematics  Introduction to Numerical Analysis,  Mathematics for Elementary  Education Majors  and/or  Mathematics for Liberal Arts Majors****Foster a sense of shared professionalism among faculty in the mathematics department** |
| Please describe and prioritize any **facilities** needs.Two new computers for current Mathematics Department office  (Room 551) for use of both contract and hourly faculty) At least one more office with desks, computers and  cabinet/bookshelf space for use of both contract and hourly  facultyClassrooms with ample dry erase boards Classrooms fully equipped with smart technologyA room for the new mathematics labClassroom-size (teaching) computer labStatistical software package(s), or at least Miscrosoft Excel, installed on computers in lab | Regarding in particular the last two items listed at left:Add new courses: Advanced Statistics and Probability |

Appendix I

**Berkeley City College Institutional Learning Outcomes**

Berkeley City College’s Institutional Learning Outcomes, as described below, are the skills and knowledge that students are expected to attain as a result of completing an instructional program at BCC. Students completing an A.A. or A.S. at BCC will be able to demonstrate all of the BCC Institutional Learning Outcomes. All BCC courses and certificates are designed to teach some or all of the ILO’s. In addition, students achieve these ILO’s throughout their experiences at BCC, for example, with student services and student clubs.

Communication

Students show that they communicate well when they

* *Critically read, write, and communicate interpersonally, with audience awareness; and*
* *analyze communications for meaning, purpose, effectiveness, and logic.*

Critical Thinking

Students demonstrate critical thinking skills when they

* *identify problems or arguments and isolate facts related to arguments;*
* *use evidence and sound reasoning to justify well-informed positions; and*
* *generate multiple solutions to problems and predict consequences.*

Computational Skills

Students demonstrate computational skills when they

* *master computational concepts and apply them to concrete problems; and*
* *demonstrate algorithmic competence.*

Ethics and Personal Responsibility

Students show the ability to behave ethically and assume personal responsibility when they

* *analyze the consequences of their actions and the impact of these actions on society and the self; and*
* *demonstrate collaborative involvement in community interests.*

Global Awareness & Valuing Diversity

Students demonstrate global awareness and show that they value diversity when they

* *identify and explain diverse customs, beliefs, and lifestyles; and*
* *analyze how cultural, historical, and geographical issues shape perceptions.*

Information Competency

Students demonstrate information competency when they

* *find, evaluate, use, and communicate information in all its various formats;*
* *use library and online resources and research methodology effectively; and*
* *use technology effectively.*

Self-Awareness & Interpersonal Skills

Students demonstrate self-awareness and interpersonal skills when they

* *analyze their own actions and the perspectives of other persons; and*
* *work effectively with others in groups.*

Appendix II

**Institutional Goals**

**NOTE: The short term goals for Peralta District and for BCC are derivative from the long term goals within the district strategic plan. The Peralta Strategic Plan can be found on the Peralta District website:** [**http://eperalta.org/wp/pbi/**](http://eperalta.org/wp/pbi/)**.**

1. **ADVANCE STUDENT ACCESS, EQUITY, AND SUCCESS**

**Peralta District Short Term Goals, 2011-2012**

**A.1 Access:** Focus access on programs and course offerings in the essential areas of basic skills, CTE, and transfer, and stay within range of the state-funded allocation by managing enrollment to 18,500 FTES (variable based upon funding variations). In addition, enable access to educational opportunities by increased contract education, fee-based instruction, distance learning, and international and out-of-state enrollments.

**A.2 Success:** Implement identified institutional, instructional, and student support changes to improve by 10 percentage points student movement through basic skills/foundation course sequences by 2014-2015.

**A.3 Equity:** Plan, design and implement structural changes to increase fall to fall persistence among major ethnic groups and bring all groups to within 2 percentage points of the highest group by 2014-15.

**BCC Short Term Goals, 2011-2012**

**A.2 Improve persistence, retention, and success by 3 percentage points.**

 A.2.1 Implement best practices in basic skills and other pedagogy to improve student persistence, retention and transfer rates.

 A.2.2 Implement acceleration models to improve course completion, particularly in basic skills.

 A.2.3 Improve student retention in the PACE program.

 A.2.4 Attain proficiency in the assessment of learning outcomes by spring 2012.

**A.3 Implement changes to increase fall to fall persistence among major ethnic groups.**

 A.3.1 Pilot innovative programs designed to increase student persistence among major ethnic groups.

1. **ENGAGE AND LEVERAGE PARTNERS**

**Peralta District Short Term Goals, 2011-2012**

**B.1 Partnerships:** Leverage, align, and expand external (i.e., community, business) partnerships to improve student learning and success in core educational functions.

**BCC Short Term Goals, 2011-2012**

**B.1 Strengthen community partnerships to enhance career pathways.**

B.1.1 Activate CTE Advisory Committees to meet at least once a school year in order to maintain currency.

B.1.2 Host a spring semester event that highlights the career pathways related to instructional programs (this will include support and involvement of community partners.)

1. **BUILD PROGRAMS OF DISTINCTION**

**Peralta District Short Term Goals, 2011-2012**

**C.1 Assess SLO’s and SAO’s and ensure their analysis, adjustments and priorities are incorporated in Program Reviews and Annual Program Updates:** Close the assessment loop by using program reviews and annual program updates in instruction and student services to improve student learning and student success.

**C.2 Create Alternatively Designed Programs:** Continue to create or expand programs exemplifying alternative and innovative designs with promise for substantially improving student success.

**BCC Short Term Goals, 2011-2012**

**C.1 Incorporate learning outcomes assessment into program review and budget allocation processes and plans.**

1. **CREATE A CULTURE OF INNOVATION AND COLLABORATION**

**Peralta District Short Term Goals, 2011-2012**

**D.1 District-Wide Collaboration and Innovation:** 1. Implement ways to make connections and build bridges across the district and colleges that would promote an ethic of care and create a welcoming environment that permeates the colleges and the district; and 2. Improve the Planning-Budgeting Integration Model in order to a) improve coordination and communication between PBI committees and between district planning and budget integration with that at the colleges and b) ensure PBI committees set and achieve key milestones/goals.

**D.2 Use Technology in Redesign of Educational Experiences:** Enable more efficient and deeper student learning and student success through the creative use of technology.

**BCC Short Term Goals, 2011-2012**

**D.1 District-Wide Collaboration and Innovation**

 D.1.1 Select a BCC representative from each PBIM committee to serve as communication liaison with a monthly report at Roundtable.

 D.1.2 Promote a focus on student learning and success in all committee activities.

1. **DEVELOP AND MANAGE RESOURCES TO ADVANCE OUR MISSION**

**Peralta District Short Term Goals, 2011-2012**

**E.1 FTES Target**: Achieve FTES target within the state allocation for the district of 18,500 FTES (variable depending on funding variations) and attain a productivity level of at least 17.5 FTES/FTEF.

**E.2 Focus Budgeting on Improving Student Success through Support for Structural Changes:** Respond to projected state deficits and budget cuts by designing budgets in keeping with the district Budget Allocation Model that a) are based on program review and strategic directions; b) improve student success through support for structural change; c) create efficiencies by sharing of positions, facilities and other resources within and across the colleges; d) consider the total cost of programs and support activities; e) shift resources to core educational functions; and f) continue to increase alternative funding sources.

**E.3 Fiscal Stability:** Continue comprehensive improvements to the financial management systems of the district and make budget and finance information transparent and accessible to internal stakeholders. Ensure expenditures for all cost centers stay within the established budget to maintain a balanced budget.

**BCC Short Term Goals, 2011-2012**

**E.1 FTES Target**

E.1.1 Achieve enrollment target and productivity.

**E.2 Focus Budgeting on Improving Student Success through support for structural changes:**

E.2.1 Advance resource parity for BCC including the transfers of funds or faculty and classified positions as a necessary means of fiscal stability.

 E.2.2 Generate general fund savings and leverage funding from other resources.

 E.2.3 Monitor annual program budgets to ensure timely expenditures.