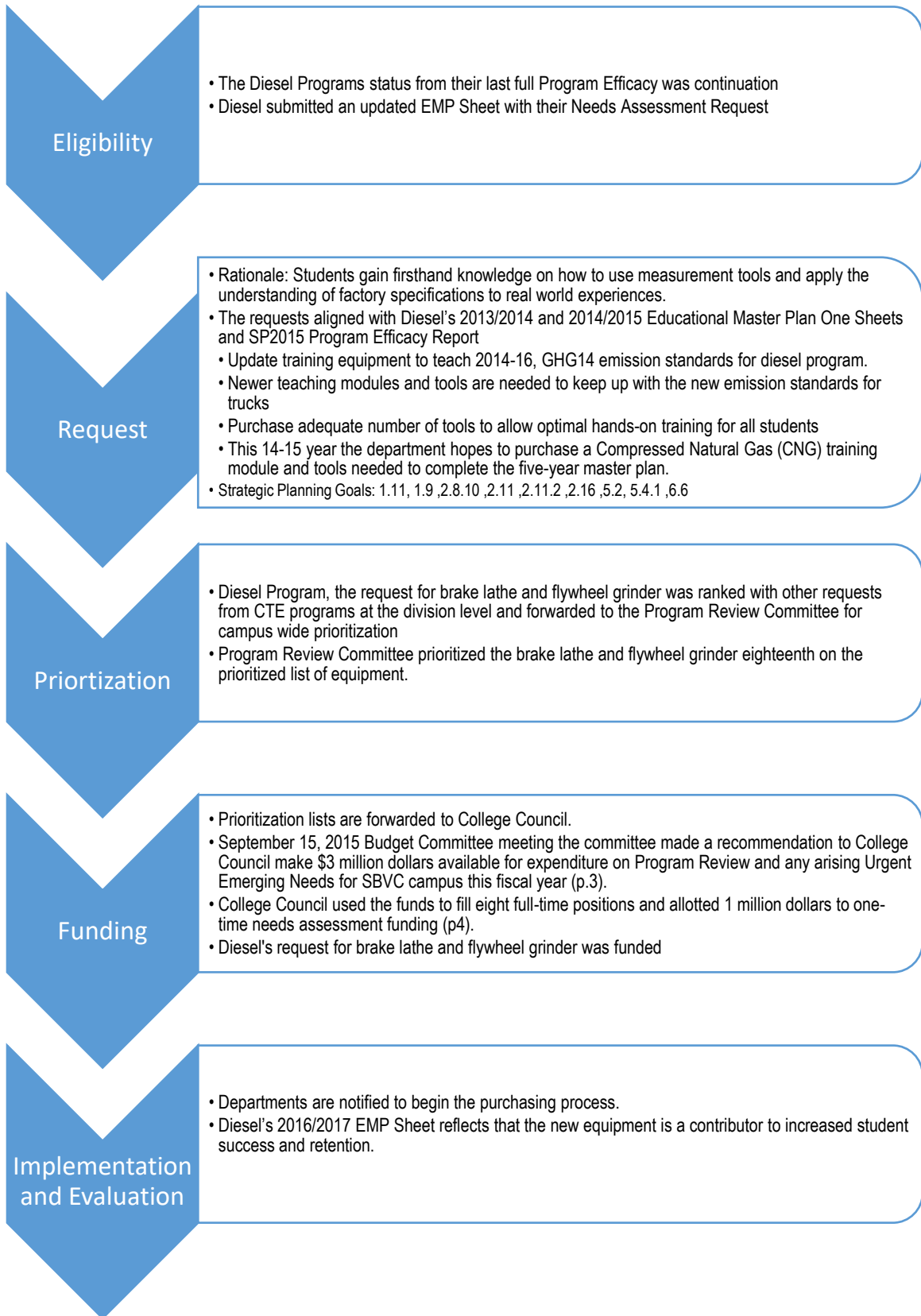


## 1.18.4 Closing the Loop: Needs Assessment Needs Assessment Process



## Example 1: Diesel (2014-2015)



Example 2: Geology, Geography, GIS, Oceanography and Environmental Science (2018-2019)  
(hereafter referred to as the departments)



## **Closing the Loop: Needs Assessment-Narrative**

### **Example 1: HMDT Department (formerly Diesel)**

In 2014/2015 the Diesel Department used the Program Review Needs Assessment Process the Diesel Program made a number of requests for new equipment. The requests aligned with Departmental Goals, Opportunities & Challenges, and Action Planning in Diesel's 2013/2014 and 2014/2015 Educational Master Plan One Sheets and SP2015 Program Efficacy Report to

- Update training equipment to teach 2014-16, GHG14 emission standards for diesel program.
- Newer teaching modules and tools are needed to keep up with the new emission standards for trucks
- Purchase adequate number of tools to allow optimal hands-on training for all students
- This 14-15 year the department hopes to purchase a Compressed Natural Gas (CNG) training module and tools needed to complete the five-year master plan.

This example will follow the request for a brake lathe and flywheel grinder. Once requested by the Diesel Program, the request for brake lathe and flywheel grinder was ranked with other requests from CTE programs at the division level and forwarded to the Program Review Committee for campus wide prioritization. Program Review Committee prioritized the brake lathe and flywheel grinder eighteenth on the prioritized list of equipment.

At the September 15, 2015 Budget Committee meeting the committee made a recommendation to College Council make \$3 million dollars available for expenditure on Program Review and any arising Urgent Emerging Needs for SBVC campus this fiscal year (p.3). College Council used the funds to fill eight full-time positions and allotted 1 million dollars to one-time needs assessment funding (p4)

College Council discussed funding scenarios for one-time equipment at the October 28, 2015 and November 25, 2015 meetings. College Council approved funding for the brake lathe and flywheel grinder.

The brake lathe and grinder was purchased and is used for instruction in the following ways

- The Ammco brake lathe and grinder is used for instruction in several classes. Students gain firsthand knowledge on how to use measurement tools and apply the understanding of factory specifications to real world experiences.
- The equipment is used in 3 different HMDT classes and has proven to be a great asset purchased for the program. By going through the process of filling out the needs of equipment form, the program review deemed it a valuable tool and ranked it high on the list of needs for the college.

HMDT 028, HMDT 022, HMDT 023 classes to meet SLOs

- Demonstrate industry safety standards using Personal Protective Equipment (PPE). By demonstration of the safe use and care of tools, precision tools, and the correct protective clothing and safety gear for various situations the students will be equipped with the knowledge to work within a safe environment and use the skills attained within the classroom.
- The students will be able to perform preventive maintenance on various components and systems During inspection of clutch or brakes in a heavy duty truck the student will have the knowledge to perform advanced servicing of the heavy-duty trucks and semi-tractor systems and components in a manner consistent with accepted industry standards.
- Repair or replace components as needed to bring the vehicle to safe standards when returned to the customer.

The brake lathe and flywheel grinder supports the following SLOs

### **HMDT 022 Heavy Duty Truck Brakes**

- Demonstrate industry safety standards using Personal Protective Equipment (PPE)
- Perform the rebuilding and adjustment of a heavy-duty truck brakes to manufacturer specifications
- Identify a specific system design and its components

### **HMDT 023 Heavy Duty Truck Suspension and Steering**

- Demonstrate industry safety standards using Personal Protective Equipment (PPE)
- Perform the rebuilding and adjustment of a heavy-duty truck suspension and steering system to manufacturer specifications
- Identify a specific system design and its components

### **HMDT 028 Heavy Duty Truck Systems**

- Demonstrate industry safety standards using Personal Protective Equipment (PPE)
- Perform preventive maintenance on various components and systems
- Repair or replace components and test charging systems and starting systems

Diesel's 2016/2017 EMP Sheet reflects that the new equipment is a contributor to increased student success and retention.

1.18.4a – [EMP 2013-2014 Diesel](#)

1.18.4b – [Diesel Program Efficacy 2014-2015](#)

1.18.4c – [Needs Assessment Request - Diesel](#)

- 1.18.4d – [2014-2015 Division Ranking - Equipment](#)
- 1.18.4e – [Program Review Committee Needs Assessment Ranking 2014-2015](#)
- 1.18.4f – [Budget Committee Minutes 9.15.15](#)
- 1.18.4g – [College Council Minutes 11.25.15](#)
- 1.18.4h – [Diesel 2016-2017 EMP Sheet](#)

**Example 2: Geology/Geography/Geographic Information Systems/Oceanography/Environmental Science** [hereafter referred to as the Departments]

In 2018/2019 the Departments used the Program Review Needs Assessment to request a Augmented Reality Sandbox. The requests aligned with Departmental Goals, Opportunities & Challenges, and Action Planning in Departments 2017/2018 and 2018/2019 Educational Master Plan One Sheets and Program Efficacy Reports from SP 2016 & SP2019 to

- The fourth department goal is to increase and maintain funding for exemplary field trips, as well as classroom and laboratory equipment and supplies. This incorporates the program review process.
- A tertiary challenge is relatively stagnant funding for field trips and supplies for classrooms and laboratories. Opportunities exist within the institutional program review process, as well as grant funding.

The Needs Assessment Request ties the augmented reality sandbox to strategic planning goals, student access, student success, and facilities. The request describes an augmented reality sandbox as a

The augmented reality sandbox is an interactive tool that provides a hands-on approach to understanding abstract, esoteric fundamentals of topography. Essentially, students create topographic relief (e.g. hills and valleys) using sand as a medium. A camera, computer, and projection unit project superimposed contour lines onto the sand surface. Virtual bodies of water can also be created within valleys, and base levels can also be manipulated (e.g. water levels raised or lowered).....The augmented reality sandbox has the potential to positively impact the efficient operation of lecture, laboratory, and field activities...

Once requested by the Departments, the request for augmented reality sandbox was ranked with other requests from Science programs at the division level and forwarded to the Program Review Committee for campus wide prioritization. Program Review Committee prioritized the augmented reality sandbox forth on the prioritized list of equipment.

At the December 5, 2018 Budget Committee Meeting the committee recommended that \$500,000.00 be used to fund one-time Needs Assessment requests. College Council funded the request on January 23, 2019.

The augmented virtual reality sandbox was ordered and received. Facilities improvements needed to be made prior to assembling and calibrating the sandbox. The augmented reality sandbox was demonstrated in selected Geography, Geology, and Oceanography classes.

In addition to its outreach potential (for many of our STEM classes and programs), the augmented reality sandbox is associated with the following SLOs:

**GEOG 110: Physical Geography Lecture:**

- Students will be able to discuss the formation of major landforms. *Note that this will be updated to "Assess the formation of major landforms."*

**GEOG 111: Physical Geography Laboratory:**

- Students will be able to interpret a variety of topographic and thematic maps. *Note that this will be updated to "Analyze and interpret mapping elements such as latitude, longitude, map scale, map projection, and topography."*

**GEOG 101: Introduction to Physical Geology Lecture:**

- Identify and categorize elements of the geosphere, atmosphere, hydrosphere and biosphere within a diagram of the hydrologic cycle.

**GEOG 111: Introduction to Physical Geology Laboratory:**

- Students will be able to develop a sense of scale in dealing with the Earth and the major features of the Earth (continents and ocean basins) by exposure to maps and charts of different scales, different kinds of map projections and different kinds of content presentations. *Note that this is in process of being updated.*

**OCEAN 101: Elements of Oceanography Lecture:**

- Students will be able to understand and apply the scientific method to assess Earth systems and components (e.g. atmosphere, biosphere, hydrosphere, geosphere, etc.). *Note that this is in process of being updated.*

**OCEAN 111: Elements of Oceanography Laboratory:**

- Practically apply principles of the scientific method (e.g. making and recording observations and developing appropriate interpretations). *Note that this is in process of being updated.*

Faculty are exploring how the augmented reality sandbox could be incorporated into online classes, as a brief video recording of the sandbox in operation could be uploaded to our various Canvas pages.

1.18.4i – [EMP Geology/Oceanography](#)

1.18.4j – [Geography Program Efficacy 2019](#)

1.18.4k – [Needs Assessment Request: Augmented Reality Sandbox](#)

1.18.4l – [Division Rankings](#)

- 1.18.4m – [2018-2019 Program Review Needs Assessment Rankings](#)
- 1.18.4n – [Budget Committee Minutes 12.5.18](#)
- 1.18.4o – [College Council Minutes 1.23.19](#)
- 1.18.4p – [2019-2020 Annual SLO Course Report - GEOG 110](#)