Career Readiness Indicator Questionnaire

This questionnaire is designed to help guide the process for review of a Career Readiness Indicator (CRI). It is the responsibility of the local education agency proposing the addition of the CRI to gather the information and submit it to Josh Laney, Assistant Director for Workforce Development. Answers should be as concise as possible. Information should be submitted as a completed packet, not piecemeal. Additional information may be included at the discretion of the applying agency if it might be pertinent to the evaluation process.

Contact information for person filling out questionnaire

Full Name of the Proposed Career Readiness Indicator:  
Submitting Agency: The Water Works and Sewer Board of the City of Anniston  
Phillip T. Burgett, Manager-Engineering Services  
Email: pburgett@awwsb.org  
Phone number: 256-241-5002  
Date of submittal: 5/31/2016

Why do we want this CRI?

1. What school system(s) are partnering with industry to request the CRI?  
City of Anniston Schools

2. What industry is asking for the CRI? (List multiple if applicable.)  
Water Utility Industry (Certified Water Plant Operator)

3. What companies within the industry are requesting this CRI? (Attach letters of request on company letterhead.)
Specifically, Anniston Water Works Board is requesting the CRI, but many other water utilities throughout the state will also benefit. Please see attached Water Operator Certification Program Proposal.

4. What entity, company, or testing agency is the “owner” of the CRI? (Who determines what it takes to earn the CRI?) Provide contact numbers, names, websites, or other info for inquiries.  
The Alabama Department of Environmental Management establishes rules for Water Plant Operator Certification. Part of the certification process requires passing a state exam. Ideally, students who complete courses necessary to obtain the CRI will be prepared to pass the state exam and will be ready to proceed with gaining experience in the water treatment industry to complete their certification.

5. For what career technical program(s) is the CRI being requested?  
Water Treatment Plant Operator Certification

6. Provide any Alabama specific employment data available which directly relates to this CRI.  
Please see attached slides from the U.S. Bureau of Labor Statistics

How does one actually get the CRI?

7. How long does it take for a student to earn this CRI? (Answer in approximate hours of instruction, not school years or terms. Give an average or best estimate.)  
180 hours

8. How does the student earn the CRI? (Does the student have to take a written exam, log a certain number of hours, complete a skills demonstration, some combination of these, etc?)

Rev: 5/9/16
Complete career-tech course curriculum in Water Plant Operator Certification

9. Is there a minimum age requirement for gaining the CRI?
   No minimum age per se, but students will most likely be high school seniors before they
   complete prerequisites for the Water Plant Operator Certification Course.

10. Are students required to be graduates before earning the CRI?
    Preferably yes. The Alabama Department of Environmental Management rules for certification
    require a high school diploma or GED to sit for the state exam.

11. Are there minimum pre-requisite course requirements for earning the CRI?
    Yes. Completion of the Water Plant Operator Certification course and prerequisites are required.

12. What equipment is required to train for this CRI? (Only list items which are different than what
    would be found on the standard equipment list for the program.)
    No special equipment required.

13. Does the earning of the CRI require the student to have computer access for the testing?
    No.

How much does it cost and what resources are required?

14. What is the cost of the exam for earning this CRI?
    None, other than commensurate with similar career tech courses.

15. Is there a practice test available from the CRI issuer or from other parties?
    Instructor will provide practice exams at no charge.
    a. If yes, does the practice test have a cost in addition to the actual exam and if so, how
       much?
    b. Can rights to the practice material be purchased once or is there a recurring fee?

16. Who can administer the exam? (Some CRIs prohibit the person who trained the student from
    administering the exam.)
    No proposed special requirement for administering CRI exam.

17. Is special certification or licensure required for a teacher to administer the CRI?
    It is recommended that the instructor of the Water Plant Operator Certification course be either
    a Licensed Professional Engineer or Certified Water Operator.
    a. If yes, what is the cost for gaining the appropriate licensure?
    b. Is this a one-time or recurring fee?

18. Is site, facility, or equipment certification required for administering the CRI?
    No special site, facility, or equipment required for administering Water Plant Operator
    Certification course.
    a. If yes, what costs are included?
    b. Is this a one-time or recurring fee?
June 23, 2016

Mr. Josh Laney  
Assistant Director for Workforce Development  
Alabama State Department of Education  
Gordon Persons Building, Room P306  
P. O. Box 302101  
Montgomery, AL 36130-2101

RE: Anniston City School System Career Technical Discipline  
Water and Wastewater Operator Program

Dear Mr. Laney:

The Alabama Department of Environmental Management (ADEM) administers the Water and Wastewater Operator Certification Program in Alabama. We understand that the Anniston City School System is considering initiating a special program to train high school students in the technical discipline of water and wastewater treatment. ADEM supports the development of such a program and we will make provisions to allow students that are enrolled at the Anniston City School technical program to take a certification exam.

ADEM regulations require that an exam candidate have a high school diploma or GED prior to sitting for an exam. However, we understand that our regulations presently are a road block to the Anniston City School System implementing this proposed program.

To resolve this matter, we will make an exception for students that are enrolled in the Anniston career technical program. Once the program is established, Anniston City School System should provide us a list of the students enrolled in the program. At the end of the school year, we will accommodate review and approval of the exam applications. Note that the school system, the students themselves, or the state Department of Education would be required to pay the exam fee for each student prior to a candidate taking an exam.

Please note that becoming an operator is a two step process. In order for students to become certified as an Alabama operator, upon passing the exam, these students will subsequently be required to attain a high school diploma (or GED) and also attain working experience, which varies from one to three years, depending upon the operator grade a candidate is pursuing (i.e., Grade I through Grade IV). Nevertheless, passing the exam is a major academic hurdle in the road to become a certified operator.
Mr. Josh Laney  
June 23, 2016

Upon passing the exam and graduating from high school, the students will be classified as Operator Interns. Please also note that once students pass the exam, they have a five-year period in which to attain their working experience as an Operator Intern.

This would be the first program of this type in the state and we welcome this innovative method to introduce young students to the challenging and rewarding field of water and wastewater treatment. Developing young talent will be helpful to Alabama utilities in the future, as certified operators are at the front lines of protecting the environment, helping utilities comply with the Clean Water Act and Safe Drinking Water Act.

If you have any questions, please contact Jim Grassiano at (334) 279-3071 or via email at jgrassiano@adem.alabama.gov.

Sincerely,

Russell A. Kelly, Chief  
Permits & Services Division
CAREER TECHNICAL PROPOSAL

for

WATER OPERATOR CERTIFICATION PROGRAM

Anniston City Schools
2016-2017

Provided to:

ALABAMA STATE DEPARTMENT OF EDUCATION
CAREER AND TECHNICAL EDUCATION

January 19, 2016
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission Statement</td>
<td>3</td>
</tr>
<tr>
<td>Purpose</td>
<td>3</td>
</tr>
<tr>
<td>Objectives</td>
<td>4</td>
</tr>
<tr>
<td>Anniston High School CTE Background</td>
<td>4</td>
</tr>
<tr>
<td>CTE Director</td>
<td>4</td>
</tr>
<tr>
<td>CTE Director Duties</td>
<td>4</td>
</tr>
<tr>
<td>Water Operator Certification Instructor</td>
<td>7</td>
</tr>
<tr>
<td>Water Operator Certification Instructor Duties</td>
<td>7</td>
</tr>
<tr>
<td>Water Operator Certification Course Schedule</td>
<td>8</td>
</tr>
<tr>
<td>Water Operator Certification Prerequisites and Eligibility</td>
<td>8</td>
</tr>
<tr>
<td>Water Operator Certification Course Funding</td>
<td>8</td>
</tr>
<tr>
<td>Proposed Textbooks</td>
<td>8</td>
</tr>
</tbody>
</table>
MISSION STATEMENT

The mission of the Water Operator Certification Program in the Anniston City Schools is to provide technical training in water treatment, water distribution, and environmental science that will prepare students for passing the state-issued written examination for water operator certification upon high school graduation.

PURPOSE

Alabama State Department of Education (ALSDE) has acknowledged for years and is now conveying the benefits of students receiving Career Technical Education (CTE) endorsed diplomas to colleges and universities, businesses and industries, and the general public. Therefore, it is our mission to help create opportunities for Anniston City School (ACS) students that provide life skills, technical and vocational training, and prepare students for success in today’s workforce with business and industrial leaders.

Keeping with this mission of creating opportunities for ACS students, it is proposed to develop a program in cooperation between ACS and The Water Works and Sewer Board of the City of Anniston (AWWSB) to train interested and prospective ACS students in water treatment and related curriculum to prepare students for success in the pursuit of being a Certified Water Operator by the State of Alabama.

The State of Alabama has a two-step process for becoming a Certified Water Operator: 1) written exam; and 2) experience.

This Water Operator Certification Program will provide ACS students an advantage in preparation for the exam-portion of the certification process as well as prepare them with practical knowledge of the water industry that will help them gain the experience as an operator intern as necessary to complete their certification.

The Bureau of Labor Statics states that the median pay for Water and Wastewater Treatment Plant and System Operators is $21.20 per hour¹. The current number of Water/Wastewater Operator jobs is approximately 117,000 with a projected increase of 6% over the next ten years².

This program will at least provide ACS students with an additional occupational option to explore that could result in a secure, promising, and long-term career in the water industry.

2. Projected increase from 2014 to 2024
WATER OPERATOR CERTIFICATION PROGRAM OBJECTIVES

- Facilitate education of the public about water treatment
- Encourage interest in careers into the water industry
- Prepare high school students for environmental curriculum in higher education
- Train interested high school students in water treatment
- Help students prepare for state exam for water operator certification

ANNISTON HIGH SCHOOL CAREER AND TECHNICAL EDUCATION BACKGROUND

Anniston High School’s Career and Technical Education (CTE) programs develop the talents and skills of students in classroom settings that are rigorous, progressive and certified to meet international standards. Students have an opportunity to explore career options in several programs offered and they can earn college credit through the statewide articulation agreement with postsecondary institutions.

As part of Alabama’s Career Technical Education, we are part of a consortium that is the only state-level educational agency in the nation to receive certification from the International Organization for Standardization (ISO) for its business/industry certification (BIC) process which is used to certify CTE programs for industry compliance.

FULLTIME CAREER TECHNICAL EDUCATION DIRECTOR

In an effort to facilitate the State of Alabama’s Plan 20/20 to ensure accountability and for all students to graduate high school being college and career ready, Anniston High School has a full-time (CTE) Director to include a College and Career Readiness Counselor and is designated a Comprehensive Career Technical Education Center. The new state requirements for CTE necessitate a full-time administrative commitment.

DUTIES OF THE FULLTIME CAREER TECHNICAL EDUCATION DIRECTOR

Enrollment:

- Ensure all students enroll in career technical education courses and receive a Career Tech Endorsement (CTE) on their diplomas.
• Inform district level personnel that nationally, CTE programs have been shown to reduce high school dropout rates and convey that high school graduation rate for Alabama CTE concentrator is more than 90 percent. (Concentrators are students who earn two or more credits in a program of study).

• Partner with other high schools in the area to allow their students the opportunity to enroll and take C T classes on AHS’s campus.

• Share with all stakeholders that there are currently about 461,000 students statewide participating in CTE programs.

Drop-Out Prevention/Re-Entry:

• Keep programs that ensure access to employment upon program completion.

• Seek grant opportunities to develop and implement a re-entry program for student dropouts by offering GED classes, technical skills in Career Tech Programs which would result in credentials or certifications.

• Articulate to students that anyone with a CTE endorsed diploma, make an average of $5,000.00 to $20,000.00 more per year than their non CTE counterparts.

• Work with local officials to create a Division of Youth Services (DYS).

• Facilitate efforts to develop a Youth Advisory Commission or Youth Task Force to promote health & Wellness.

Funding:

• Secure funding to add more programs at the new Cobb Junior High School which will alleviate overcrowding in academic classes.

• Prepare C T budget in eGap, oversee and allocate funds to ensure they are expended according to Education Department General Administrative Regulations (EDGAR).

• Maintain sufficient records of purchases and control equipment inventory according to EDGAR.

• Fully implement the Live Works Policies to generate additional revenue for each program and make C T products and services available in accordance with the Live Works Policy.

Academics:
• Continue to support programs at AHS that offers statewide articulated credit at postsecondary institutions.

• Ensure all C T Teachers continue to receive the necessary professional development that would enable them to keep abreast of national C T E trends, equipment utilizations, and teaching methods that enhance their prospective programs.

• Evaluate teachers to ensure that their lessons are challenging and rigorous.

• Facilitate the full implementation of ALSDE’s new Career Preparedness Class.

• Offer technical writing skills in each career tech program.

• Ensure all Career Tech Student Organizations (CTSO) compete in yearly competition.

• Marketing students who are interested in communications or journalism will assume responsibilities for the creation of the school’s annual yearbook.

• All programs will participate in some type of Project Based Learning (PBL) during the school year.

• Facilitate the re-start of the Robotic Program and extend it to middle school students.

**Job Placement:**

• Work with Job Coach to ensure all ACS students have an opportunity for employment as they enter the workforce.

• Develop and implement a viable Job Shadowing Program to assist with job skills.

• Ensure Bulldog Branch of First Educators Credit Union continues to function to create employment opportunities for students in the financial institutions.

• Partner with local industries and manufactories to schedule student site visits throughout the school year.

• Facilitate the success of the Co-operative Education Program and insure student placement.

**College Enrollment Assistance:**

• Oversee the Early College Enrollment Program ECEP/WIA (Workforce Investment Acts) programs and assist students and parents with the admission and application processes.
Additional Career Technical Duties:

- Hold monthly district level advisory council meetings in accordance with State Department of Education's (SDE) CTE compliance standards.

- Ensure each program has achieved certification in accordance with Business and Industry Certification (BIC) Standards.

- Attend monthly Chambers of Commerce meeting and represent the educational interest of the city.

- Meet with Workforce Region 5 monthly to discuss employment opportunities for our students.

- Attend regularly scheduled city council meetings to represent workforce and student's interest.

- Compile and update document manuals on L E A Compliance On-Site Review and L E A Compliance Desk Audit. Currently, there are a total of 110 CTE Indicators that must be addressed.

WATER OPERATOR CERTIFICATION INSTRUCTOR

AWWSB will provide a qualified instructor that is versed in the science, mathematics, principles, and application of water treatment and distribution. All instructors will be either a Grade IV Certified Water Operator in the State of Alabama or a Licensed Professional Engineer. All AWWSB-provided instructors will have successfully passed the highest level (Grade IV) Water Operator Certification written exam and have at least 10 years of experience in the water industry.

DUTIES OF THE WATER OPERATOR CERTIFICATION INSTRUCTOR

- Provide classroom instruction on textbook material

- Lead and facilitate discussion of textbook material

- Lead classroom problem solving

- Issue periodic informal tests to evaluate progress

- Provide homework assignments and evaluation
- Provide periodic exams

WATER OPERATOR CERTIFICATION COURSE SCHEDULE

The Water Operator Certification Course will include one hour of classroom instruction, five days per week during normal school hours. The duration of the course will be one school year. Emphasis will be placed on foundation math and science the first half of the school year and emphasis on water treatment specifics and state exam questions the second half of the year.

WATER OPERATOR CERTIFICATION COURSE PREREQUISITES AND ELIGIBILITY

The Water Operator Certification Course will be available to those ACS Seniors who have successfully completed courses that are necessary for the understanding of concepts in water treatment and distribution. At a minimum the prerequisites should include courses such as Algebra II or Geometry and Chemistry. Other courses that will be helpful are Physics and Trigonometry.

ACS students will be eligible for the course if they have a minimum grade point average of 3.6 and are in good standing.

WATER OPERATOR CERTIFICATION COURSE FUNDING

AWWSB will supply the instructor for the program for the entire school year at no cost to ACS or to the Alabama State Department of Education. Student textbooks and materials will be supplied by ACS. AWWSB will provide the reference textbooks.

PROPOSED TEXTBOOKS

Two student textbooks will be supplied to each student for the duration of the course. Each textbook costs approximately $106. The proposed textbooks are published by The American Water Works Association (AWWA)™:

- Basic Science Concepts and Applications, Fourth Edition
- Water Treatment, Fourth Edition
Three additional reference textbooks published by AWWA will be used for development of additional assignments and tests. These textbooks will not be supplied to the students but will be used only by the instructor.

- *Math for Distribution System Operators*
- *Math for Water Treatment Operators*
Water and Wastewater Treatment Plant and System Operators
Median annual wages, May 2015

Plant and system operators $57,160

Water and wastewater treatment plant and system operators $44,790

Total, all occupations $36,200

Note: All Occupations includes all occupations in the U.S. Economy.
Water and Wastewater Treatment Plant and System Operators

Percent change in employment, projected 2014-24

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total, all occupations</td>
<td>7%</td>
</tr>
<tr>
<td>Water and wastewater treatment plant and system operators</td>
<td>6%</td>
</tr>
<tr>
<td>Plant and system operators</td>
<td>0%</td>
</tr>
</tbody>
</table>

Note: All Occupations includes all occupations in the U.S. Economy.
Environmental Science and Protection Technicians
Median annual wages, May 2015

- Life, physical, and social science technicians: $43,490
- Environmental science and protection technicians, including health: $43,030
- Total, all occupations: $36,200

Note: All Occupations includes all occupations in the U.S. Economy.
Environmental Science and Protection Technicians
Percent change in employment, projected 2014-24

Environmental science and protection technicians, including health: 9%
Total, all occupations: 7%
Life, physical, and social science technicians: 5%

Note: All Occupations includes all occupations in the U.S. Economy.
Environmental Engineers
Median annual wages, May 2015

Engineers $90,060

Environmental engineers $84,560

Total, all occupations $36,200

Note: All Occupations includes all occupations in the U.S. Economy.
Environmental Engineers
Percent change in employment, projected 2014-24

- Environmental engineers: 12%
- Total, all occupations: 7%
- Engineers: 4%

Note: All Occupations includes all occupations in the U.S. Economy.
Employment of water and wastewater treatment plant and system operators by state, May 2015

Blank areas indicate data not available.
Annual mean wage of water and wastewater treatment plant and system operators by state, May 2015

Blank areas indicate data not available.
Annual mean wage of water and wastewater treatment plant and system operators by area, May 2015

Blank areas indicate data not available.
Employment of environmental engineering technicians, by state, May 2015

Blank areas indicate data not available.
Annual mean wage of environmental engineering technicians, by area, May 2015

Annual mean wage
- $25,910 - $43,360
- $43,650 - $48,850
- $48,950 - $53,980
- $54,310 - $72,800

Blank areas indicate data not available.

Employment of environmental engineers, by state, May 2015

Employment
- 110 - 250
- 300 - 550
- 600 - 1,220
- 1,240 - 6,900

Blank areas indicate data not available.
Annual mean wage of environmental engineers, by state, May 2015

Blank areas indicate data not available.
Annual mean wage of environmental engineers, by area, May 2015
Unemployment rates by state, seasonally adjusted, March 2016
(U.S. rate = 5.0 percent)

SOURCE: Bureau of Labor Statistics
Local Area Unemployment Statistics

Only Tap Water Delivers

Anniston
Water Works
Unemployment rates for metropolitan areas, not seasonally adjusted, February 2016

(U.S. rate = 5.2 percent)

NOTE: Map includes data for 367 metropolitan areas based on Office of Management and Budget Bulletin No. 13.
01 Areas in the six New England states are Metropolitan New England City and Town areas (NECTAs), while areas in other states are county-based.

Legend:
- Above U.S. average
- U.S. average or below
Unemployment rates by county, not seasonally adjusted, Alabama February 2016

unemployment rate(%):
- 10.0 to 60.0
- 7.0 to 9.9
- 6.0 to 6.9
- 5.0 to 5.9
- 4.0 to 4.9
- 3.0 to 3.9
- 0.0 to 2.9
### UTILITY SECTOR EMPLOYMENT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (in thousands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment, all employees (seasonally adjusted)</td>
<td>$\uparrow$</td>
<td>563.7</td>
<td>563.8</td>
<td>$\downarrow$ 565.6</td>
<td>$\uparrow$ 565.6</td>
</tr>
<tr>
<td>Employment, production and nonsupervisory employees (seasonally adjusted)</td>
<td>$\downarrow$</td>
<td>452.5</td>
<td>451.8</td>
<td>$\downarrow$ 452.7</td>
<td>$\downarrow$ 452.8</td>
</tr>
<tr>
<td>Unemployment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate</td>
<td></td>
<td>1.3%</td>
<td>2.4%</td>
<td>2.3%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

Footnotes:

2. 3.2% Total Unemployment Rate February 2016