



Comment [dmm1]: The School is to be commended on their timely submission of this program review documentation.

Degree Program Academic Review

Lake Superior State University

Review for the following Degree Program:

Bachelor of Science – Fire Science,
Generalist – Certification

May 2014

I. Mission/Vision/Strategic Plan

It is the mission of the Criminal Justice/Fire Science/EMS program faculty and staff to provide an atmosphere where active learning may occur, to provide students with the highest quality educational experience, to continue to support the “professional model” as currently utilized, to become appropriate role models for students, to support the educational program by acquiring the appropriate equipment and supplies, to fulfill the advising role, and to assess the academic outcomes of the program.

Comment [DJF2]: This seems to be generic with other programs in CJ.

The Bachelors of Science Degree, Fire Science Generalist Certification is designed to prepare graduates for careers in the area of fire protection, prevention, investigation, education, fire equipment service/supply and emergency planning. Students in the Generalist Certification emphasis may select a minor of their choice. For those who are going to pursue work in a career fire department, a minor in paramedic technology is strongly recommended. Others may select a minor which is more applicable to their own career aspirations such as management, computer technology, public administration, environmental science or other area. The degree is further designed to either guide a pre-service student from high school through college or to build on an existing associate degree in Fire Science; generally, students with Associates degrees come to LSSU as part of articulation agreements with Lansing Community College and Kalamazoo Valley Community College.

Comment [DJF3]: What are the program outcomes?

In addition to an education, students will have the opportunity to receive state/national certification in a number of areas. Students may obtain Firefighter I and II Michigan certification, Wildland Firefighting certification (USFS S130, S190, and I220), Certificate in the Incident Command System, Hazardous Material Awareness Level, Hazardous Material Operations Level, the 40 hour Emergency Response Technician - HAZWOPER (29CFR 1910.120), Michigan First Responder card, Basic EMT certification, and Paramedic License. These certifications, coupled with a Bachelors’ Degree increase a students’ marketability in the workforce, where many departments are requiring a minimum of 62 college credits, Firefighter I/II certification, and paramedic license just to apply for a position.

Comment [DJF4]: Only these two?

The Fire Science program at LSSU is the only brick and mortar institution of higher learning that has a Bachelors’ of Science Degree in Fire Science not only in the state of Michigan, but in every state that it borders. The closest brick and mortar institution in Fire Science with a B.S. program is Eastern Kentucky University. However, LSSU is the only practitioner-based degree in the Midwest, in which each respective tenured faculty member has not only more than 15 years of experience in the field, but has earned advanced degrees: one has an MA in Management/Manpower Planning, one has a Ph.D. in Education, and one has a Ph.D. in History. The diversity of higher education is advantageous to the LSSU student body; not only does it reflect a collaboration of life and professional experiences, but reflects the many different pathways of advancement within the fire service.

Comment [DJF5]: It would seem that our students are far beyond the 62 credit requirement. How does that work for or against them?

Comment [p6]: How does this relate to the quality of the program?

Comment [dmm7]: What is this saying – that U. Phoenix has a program too?

Comment [dmm8]: A great point of distinction, but when did we last check on this, what if Kentucky’s faculty changed – or is Kentucky in the South? See also <http://fivethirtyeight.com/datalab/what-states-are-in-the-midwest/>

<http://fivethirtyeight.com/datalab/which-states-are-in-the-south/>

The program’s IFSAC (International Fire Service Accreditation Congress) membership is also advantageous. LSSU’s fire science program is the only four-year brick and mortar institution that is accredited in the Midwest, and one of two institutions in the state of Michigan (LCC’s Associate program is also IFSAC). LSSU was the first 4-year institution accredited through IFSAC. The importance of this accreditation is best illustrated in the number of out-of-state students the program regularly brings to LSSU and by the number of employed graduates in the fire service field. The Bachelors of Science Degree, Fire Science Generalist Certification was recently reaccredited in April 2014.

Comment [MEW9]: This statement may be true, but what is its value. You have no competition because it’s so prescriptive.

Comment [DJF10]: I am not clear as to the meaning of this sentence.

Comment [DJF11]: Redundant?

Comment [dmm12]: Agreed, what is the number? Has it changed, how about a graph? Please support these statements with evidence.

II. Productivity

LSSU is the only four year, brick-and-mortar institution that has a Fire Science Program in the Midwest. It is the only program that has three full-time faculty members with firefighting experience combined with advanced degrees. The current demand for the degree is steady and it is the only program in Michigan that has junior and senior level courses related to the fire service; many of the courses offered through the degree can be taken in conjunction with other LSSU programs to make students more marketable. Biology and Wildlife students, for example, often take FIRE102 (Wildland Firefighting) to make them more marketable in obtaining a position with state and federal agencies.

While it is not completely desirable, all fire science students pay a fee for each hour within the degree curriculum. The money generated from these fees replenish equipment used during the school year, repair broken apparatus, replace out-of-date or worn equipment, and purchase new equipment. Although this is not an exhaustive list of how the monies are utilized, it does show that the program is frugal with its limited budget. The program attempts to maintain a carry-over, as the costs for some repairs and purchases are costly. The program does rely on donations from alumni; these donations come in the form of equipment and bunker gear. One of the best achievements for the Fire Science program has been within the past two years. Working with Steve Gregory, funds from the Fire Science program and the Physical Plant were spent to repurpose one of Fort Brady's out-storage buildings behind the physical plant. Together, the inter-departmental cooperation put over \$60,000 into a building, without asking the university for monies, with useable storage space.

Between 2011 and 2014, there has been an average of 142 students in the Fire Science Generalist program. The highest number was in 2012 with 161 students and the lowest is in 2013 with 112. The average ACT for incoming freshmen into the Fire Science Generalist program is 20.75. It should be noted however, that the number for 2013 should actually be 127, as 15 students are working on their Paramedic Technology Associates Degree and are not included in the Fire Science student count. During the same time, transfer students make-up 19% of the Fire Science student body; students who typically are by-products of community college articulation agreements with LCC and KVCC, as well as students from non-articulating MacComb, Delta, Kirtland, and Schoolcraft Community Colleges. It should also be noted the one of the major reason for the slight decline in numbers is the availability of faculty for "grass-roots" recruiting; the availability of faculty to recruit since 2012-2013 has lessened. However, a new push has been made for recruiting efforts for the 2014-15 year.

Between 2011 and 2014, the average number of terms before graduation is 8.25; this number represents four-years and a summer semester to complete internships. The least number of terms is 4, indicating those students who transfer to LSSU, while the highest number of terms is 11; this number includes those students who have changed majors or who have added Paramedic Technology late in their academic career. Between 2011 and 2014, an average of 30 non-transfer students graduate within four years and eight transfer students graduate within two or three years; the duration of stay for the latter students is dependent upon the number of transfer credits brought into LSSU, additional degrees sought in Homeland Security, or the inclusion of taking the year-long paramedic licensure. The average GPA for Fire Science Generalist graduates is 2.97.

Comment [p13]: There appears to be no mention of the online completion program. That is another important group of students in this program.

Comment [p14]: This comment has been made several times. Program quality should be emphasized more.

Comment [dmm15]: Big claim, loving if it's true, but when did we last check?

Comment [DJF16]: Do others have more?

Comment [dmm17]: Do the others have 4 or 5 – it is a dubious claim.

Comment [DJF18]: Evidence?

Comment [p19]: I thought there was another online program in Michigan?

Comment [MEW20]: Data? Quantitative value...is it 80%, 20%?

Comment [DJF21]: Why not? Alternatives?

Comment [dmm22]: Sort of confirmed

Select Program(s):

FRENE-5-BA - French Studies Elem Ed-5yr-BA
FRENE-BA - French Studies Elem Ed-BA
FRENS-BA - French Studies Sec Teaching-BA
FSET-BS - Fire Science Engineer Tech-BS
FSGE-BS - Fire Science Generalist Cert-B
FSGN-BS - Fire Science Generalist Non Ce
FSHL-BS - Fish Health-BS

Quick View on Screen Before Creating Rep

Quick view program information below:

PROGRAM	PROG_SEM	TERM_DESC	STU_COUNT
FSGE-BS	201110	Fall 2010	149
FSGE-BS	201210	Fall 2011	154
FSGE-BS	201310	Fall 2012	130
FSGE-BS	201410	Fall 2013	106
FSGE-BS	201510	Fall 2014	98
FSGE-BS	201010	Fall 2009	

Comment [DJF23]: What does this mean – we do not accept transfer credit from these institutions?

Comment [DJF24]: Tables might help to more clearly present the data and make your points.

Comment [dmm25]: Graduate reports around 25 grads each of last two years, where do the rest of the FS-Generalist students go – is retention in the program an issue?

III. Demand

The program is not a technical or vocational program. Therefore, there is no “track” which automatically leads to employment. Survey data indicates that graduates gain employment not only in public fire service, but also in the private fire service sector. Graduates have worked in emergency planning, disaster preparedness, fire cause determination, health/safety specialists, fire prevention specialists, and in environmental clean-up. A small number of graduates have moved on to graduate school.

Because the Bachelors of Science Degree, Fire Science Generalist Certification is so unique, it cannot be accurately compared to other fire science programs. LSSU has the only 4 year program that is assigned the designation of Regional Training Center in the state of Michigan; this means that students do not have to go through another institution to earn appropriate certifications. LSSU has the only program that has fire service practitioners/ex-practitioners with advanced degrees in the Midwest. LSSU has the only program in which, before graduation, its students can earn all licenses, as well as the education, necessary for employment in municipal, county, state, and federal fire departments.

Between 2008 and 2012, the five year average of prospective, admitted, and enrolled students illustrates the viability of the Fire Science program. On average, there are 154 prospective students in which 105 are from Michigan, while 49 are from out-of-state; 98 (64 from Michigan, 34 out-of-state) of those students are admitted, with 46 (32 from Michigan, 14 out-of-state) students actually enrolling at LSSU. As of December 17, 2013, there are 112 students in the Fire Science Program, or 5% of the total LSSU student body; it is the fourth largest program behind Criminal Justice (12%), Business Administration (10%), and Nursing (6%).

The most recent Alumni Survey (summer 2013) had seventy responses; of those who responded, fifty-one earned the Fire Science Generalist Degree. Of those surveyed, 60% are employed by municipal fire departments, 10% employed with public safety departments, 15% work in the industrial setting, 5% are in graduate school, and the remaining 10% work in various private-sector, fire service related agencies and companies.

Nationally, employment of firefighters is expected to grow by 9 percent, slower than the average for all occupations. At the same time, the best prospects are those who are physically with postsecondary firefighter education and paramedic training. Employment of fire inspectors and investigators is also expected to grow 9 percent from 2010 to 2020, but this could change as urban and rural areas grow. Since EMS is a large portion of the fire service, students will earn either Basic-EMT or paramedic licenses. These licenses will add to their marketability, in which employment as EMT's or paramedics is expected to grow 33% between 2010 and 2020. Please note that the national demand does not include firefighters moving into supervisory positions, nor does it reflect the possibilities of students working in the private sector of the fire service. The private sector includes, but not limited to education, industry, Occupational Health and Safety, management, community planning, and/or insurance. <http://www.bls.gov/ooh/protective-service/firefighters.htm>

In Michigan, employment of firefighters mirrors the national trend is expected to grow 8.3% from 2008 to 2018. Fire Inspectors and investigators are expected to grow 4.5%. The growth of supervisory positions is expected to 4-5.8%. A number of graduates are also pursuing areas in insurance, dispatch, and Occupational Health and Safety Specialists. The employment projections for 2010-2020 are: insurance adjusters 5.8%; dispatch 9.7%; and Occupational Health and Safety Specialists 6.7%. http://milmi.org/admin/uploadedPublications/713_occ_g33.htm

Comment [RSH26]: I would be better to put in what it is, not what it is not (A generalist fire science program that provides an educational base for students two seek employment in....

Comment [DJF27]: Data would help communicate the message here.

Comment [MEW28]: Doesn't the accreditation make comparisons?

Comment [DJF29]: Is the certification required for employment? If so, at which agencies/levels?

Comment [p30]: What about LCC and KVCC? I thought some of their professors also had masters degrees?

Comment [p31]: Is there data to verify this?

Comment [DJF32]: So 1/3 production from inquiry to enrollee?

Comment [dmm33]: It is excellent that the School is collecting and can report on this data. The next step is to migrate these findings, and the evidence files behind them, into Tracdat. Currently the Tracdat module "Program(CJ/FS/EMS – Fire Science – Generalist BS" has six program-level outcomes listed, but no measures have been defined for how the program will assess them.

The School faculty are encouraged in reviewing this report to look at what evidence you already are collecting that represents data you find meaningful (like this employment data) and to build program-level outcomes for which THIS IS the measure and evidence you seek. Use the data you value and already collect as the basis of your assessment program.

IV. Quality

The fire science program's membership in IFSAC indicates that its course offerings, institutional support, and qualified faculty are working together in completing their educational mission. As such, IFSAC is a peer driven, self-governing system that accredits both public fire service certification programs and higher education fire-related degree programs; however, LSSU currently is only accredited for its fire-related degree program. The fire science program was initially accredited in April 1998; the first four-year institution to be accredited, the program was reaccredited in April 2014, and has this accreditation for the next five years. The 2008 accreditation evaluation listed the only detriment to the Fire Science program is the lack of a safe area for training. The program is addressing this issue slowly. However, the 2014 accreditation visit did not find any requirements or recommendations for continued accreditation. For more information on IFSAC please see: <http://ifsac.org/>.

In addition to the program accreditation, the fire science program is evaluated by a third party for training. The Michigan Firefighter Training Council (MFFTC) provides written and practical examination for those students who complete their Firefighter I/II course work. The scores on the written test (200 questions) cover the IFSTA (International Fire Service Training Association) curriculum; the practical examination completion rate is also taken as an indicator. In addition to the firefighter certification, MFFTC also evaluates several other certifications the fire science program offers through course work. It should be noted that the state of Michigan will be becoming an IFSAC state; this will allow LSSU students to be even more marketable for employment outside of Michigan.

Fire Science Generalist students who earn a minor in Paramedic Technology are also covered under an accredited body. The Committee on Accreditation of EMS Programs (CoAEMSP) has issued a Letter of Review for LSSU's Paramedic Technology Program, indicating that the Program has satisfactorily met the core information of the Standards and Guidelines for the Accreditation of Educational Programs in the Emergency Medical Services.

In addition to earning their Bachelor's degree in Fire Science, students also earn an Associate's degree in Fire Science. The majority of the students do not stop with this degree. Freshmen and sophomore level courses within the Fire Science degree indicate that there were 957 student credit hours for the specialty courses in 2010-2011, while there were 1309 in 2011-2012, and 965 in 2012-2013. Student contact hours remained consistent with 52 in each year from 2010 to 2013. The PROE Self-Study also indicates an average of 15 Associates degrees were awarded from 2010 and 2013: of those who were awarded the degree 95.56% passed assessments that are aligned with industry standards; 67.66% remained enrolled in original postsecondary institution; and 100% were placed in employment by the second quarter following the program year in which they graduated.

All faculty members within the fire science program have excellent working relationships with local and state agencies. Because all fire science students have to complete an internship, it is essential that the faculty maintain those relationships, as well as fostering new internship sites, for the benefit of our students. Students accomplish a variety of experiences during the internship (FIRE403). Many associate themselves with a fire department in some capacity, such as in a planning division, prevention and education, code inspection/enforcement, fire cause investigation, firefighter/paramedic, and budget/administrative. Some students will join the DNR or USFS fire crews working in Canada and the U.S. The evaluation of these students by their supervisors provides the faculty with feedback about how our program prepares students for their careers. It should be noted that students have done projects for Sault Ste. Marie F.D. and other regional volunteer F.D.'s, in-state and out-of-state F.D.'s,

Comment [MEW34]: I would like to see more dialog and data to support the quality of student learning.

Comment [dmm35]: Not every program outcome must be student-focused. Go ahead and create a program outcome which relates to maintaining an accredited program, then periodically enter your reports and updates as evidence of your meeting that goal.

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Comment [dmm36]: Or, make the program goal more general about program quality through certification, accreditation and external reviews – and use IFSAC and MFFTC as two measures of quality for that outcome.

Comment [DJF37]: It seems that students in the program actually earn multiple degrees and certificates. It would help to keep this review focused on the program at hand, or to analyze why there is a such an integration of programs that separating is not possible. If the later, it may mean that the 'separate' programs are actually one.

Comment [dmm38]: You should consider developing a program-level outcome whereby graduates can demonstrate professional something-or-other and then have several measures – one the supervisor evaluation of the internship, two – a student reflective narrative about their experience, and three- a faculty member evaluation of the internship. You value the internship, make all students take it (WHY?) – you should use this as a key component in your program review!

Office of Emergency Services, local school districts, private plants and firms, public buildings, churches, hazardous materials sites, and Lake Superior State University.

Other courses that illustrate experiential experiences include: FIRE301 requires students to prepare a pre-fire plan/survey for use by a fire department or other agency; FIRE101, FIRE111, FIRE219, and FIRE220 are required for LSSU students to earn their Firefighter I/II and Hazardous Materials Operations certifications; FIRE315, CJUS341, and FIRE301 are all preparatory courses that will eventually allow students to earn certifications in leadership, investigations, and code enforcement; it is encouraged that all fire science student earn EMT-B and paramedic licenses. FIRE211 requires the ability to use hydraulic calculations to establish a required fire flow, requires the use of ICS/UICS, necessitates the evaluation of building construction involved in tactics and safety, and requires the ability to use personnel and equipment in the most expeditious way to account for fire safety. Students do not receive any credit for life experience in or out of the fire service. However, the fire science program does accept certain certifications that would equal course outcomes for certain LSSU fire science courses.

It should also be recognized that the fire science program is incorporating more hands-on training for the students utilizing local and state agencies. For example, Dr. Terry Heyns is currently working with the Michigan LP Gas Association to maintain a good working relationship that has been fostered within the past two years; Mr. Roger Land maintains a good working relationship with the US Forest Service and the DNR to provide fire science students more opportunities with the wild-land firefighting community; and Dr. Jim Schaefer has created new relationships with the Underwriter's Laboratory (UL) and the State Fire Marshal's office for IFSAC accreditation by bringing the IFSAC certification process to LSSU students. This initiative of providing more hands-on training reinforces the educational theories students are taught in the classroom.

Finally, the faculty and staff within the School of Criminal Justice, Fire Science, and EMS are very active in student recruitment, admission activities, career placement, and guidance assistance. The Fire Science Program and the School of Criminal Justice, Fire Science, and EMS approach recruitment with "grass-roots" initiatives, regularly visiting Vocational Schools, Career Centers, and High Schools throughout the state of Michigan, the Chicago, Illinois area, northern Indiana and Northwest Ohio to promote the School and the LSSU community. In addition, faculty members participate in a variety of university and university-related activities which include but are not limited to: convocations, department and college meetings, faculty forums, lectures, commencements, admissions functions, athletic events, and theatrical and musical performances.

Comment [DJF39]: Evidence supporting this would be helpful – videos, course syllabi, individual course meeting plans, etc.

Comment [DJF40]: You list the inputs from faculty to make this happen, but not the outcomes in terms of what students are actually placed and what they are doing.

Comment [b41]: It is apparent that experiential learning is a large component of this program. Does your program obtain feedback from the outside agencies where the students do their internships or experiential learning? Documentation of that feedback, coupled with any changes that you make to the program because of the feedback, would be significant to note here or in the assessment section below.

Comment [RSH42]: Focus in this section should be an assessing the quality of student outcomes.

V. Assessment

It is the mission of the faculty and staff within the School of Criminal Justice, Fire Science, and EMS is to provide an atmosphere where active learning may occur, to provide students with the highest quality educational experience, to continue to support the “professional model” as currently utilized, to become appropriate role models for students, to support the educational program by acquiring the appropriate equipment and supplies, to fulfill the advising role, and to assess the academic outcomes of the program.

There are eight objectives for the School of Criminal Justice, Fire Science, and EMS: (1) provide students with a broad-based, liberal education; (2) provide students with the skills necessary to perform as twenty-first century criminal justice practitioners; (3) assist students with their development of a set of professional ethics; (4) assist students in the development of their critical thinking skills; (5) assist students with the development of their writing skills; (6) provide an educational atmosphere where active learning may occur; (7) encourage lifelong learning; (8) assess the educational outcomes of the program.

The Fire Science Program currently has four program objectives: (1) attain Michigan Firefighter I/II Certification. Method of Measurement: Complete written and Practical examinations administered by the Michigan Training Council; (2) ability to formulate research and write studies, papers, or presentations dealing with topics relevant to the fire service. Method of Measurement: Complete FIRE401, the capstone course and attain a degree; (3) after graduation, begin a career in area involving emergency planning, operations, or related area. This also relates to the degree track the graduate has chosen and/or the graduate’s minor course of study. Method of Measurement: Survey data analysis from graduates and employers; (4) continuation at graduate level. Method of Measurement: Survey data analysis from graduates and employers, as well as other data if available (self-reported, public announcements, institutional research reports).

All course and program outcomes are student focused, measurable, and rely on both direct and indirect measures. Currently, however, the Fire Science Program needs to establish and implement more stringent program outcomes. A goal for 2014 is create more accurate program outcomes, to implement a plan that will better reflect the program’s goals and objectives; this process has already started with the creation of a school/program matrix, which can then be shared with the other programs within the school as a whole.

Each course within the School of Criminal Justice, Fire Science, and EMS is being assessed internally through TRACDAT at least one time. Since this is a relatively new university wide assessment feature, both the School and the LSSU are in its infancy stages of this important process. Our School is one of the more proactive schools in this regard, but more course assessments will follow with each subsequent semester. Each program assessment reflects the eight School objectives, as each course assessment reflects the program objectives. The program objectives are interwoven into more specific, narrowed foci of individual course assessments. Each course assessment identifies course student learning outcomes.

The faculty members within the Fire Science Program have made some headway inputting data into TRACDAT. All but one of the fire science courses have Student Learning Outcomes; the lone course without learning outcomes is FIRE309 and that is because Spring 2014 was the first time in which it was taught as part of the program. Of the 18 courses listed in TRACDAT with Student Learning Outcomes, 12 of them have findings; the six remaining courses that do not have findings will be completed in Summer 2014. The Chair of the School of Criminal Justice, Fire Science, and EMS is also currently working on improving the completion rate of course and program review within

Comment [MEW43]: These are not student learning outcomes. These are system inputs. It’s okay here, but programs will need SLO’s

Comment [dmm44]: These are NOT the outcomes listed in Tracdat

Comment [dmm45]: Terrific, glad to see this discussed early in the assessment section – but it doesn’t match what you have entered in Tracdat. Are these new outcomes? Did they change? Why did they change – that would be an important part of program review and assessment if you have reformulated your program goals.

You have clearly given thought to the appropriate measures for each of these outcome but none of this is documented in Tracdat. It is essential to establish baseline performance indicators against which you can measure future performance. Have there been curriculum changes – use that documentation in your evidence and show the impact of those changes as well.

Consider refining your measures, for example, might you expect them to attain certification within 6 months of graduation, within a year? Is going to graduate school enough or do you expect them to be successful, report being well prepared, etc? How could you use graduate surveys as evidence of one or more of these program objectives.

Comment [DJF46]: I am not seeing this from what is listed above. What will graduates know and be able to do?

Comment [DJF47]: It would be interesting to have this attached.

Comment [dmm48]: Tracdat isn’t doing the assessing, it is ONLY a place for you to document your assessment activities – a database of assessment findings and actions.

This program review has shown some understanding of the differentiation of course and program goals, and your stated measures for each goal is a good step in that direction. Look at your course outcomes too, and consider where one or more might be used as evidence of meeting a program goal.

TRACDAT. The percentage of completion is currently low; however, it should be noted the chair, faculty, and staff within the School of Criminal Justice, Fire Science, and EMS have found little time to perform the increasing number of tasks. The number of additional duties has made it difficult to perform the multitude tasks asked, and the continued “catch-up” attitude is wearing thin with everyone involved.

The required courses in the Fire Science Program cover those areas generally accepted as appropriate to the discipline. Curriculum development and management of the fire science program is the responsibility of the faculty, full- and adjunct members, who work in conjunction with outside agencies to ensure that the program is relevant to current practices. Students are encouraged to take courses in a prescribed order as presented in the curriculum guides. The students are offered a recommended program schedule to allow the student to finish the program in a timely manner and to illustrate the logical sequence of courses and how it fits within the program.

Students do not receive any credit for life experience in or out of the fire service. However, the fire science program does accept certain certifications that would equal course outcomes for certain LSSU fire science courses. Students will receive LSSU credit for the following certifications: Firefighter I and II certification. Students who have this certification receive credit for FIRE101, FIRE219, and FIRE220. These three courses are required for LSSU students to earn their Firefighter I and II certification. Hazardous Materials Awareness and Operations; students who have this certification will receive credit for FIRE111 if the student has an accompanying course in chemistry. Fire Officer I, II, III; students who have these certifications receive credit for FIRE315. The course goals and objectives match the criteria necessary for these certifications. Fire Investigator I and II; students who have these certifications receive credit for CJUS341. The course goals and objectives match the criteria necessary for these certifications. Fire Inspector I and II; students who have these certifications receive credit for FIRE301. The course goals and objectives match the criteria necessary for these certifications. EMT-Basic certification; students who have this certification receives credit for EMED190 and EMED191. EMT-Paramedic license; students who have this licensure will receive 21 credits toward their necessary credits toward graduation. It should also be noted that in order for students to receive credit, each student must present his/her certification; a copy of each certification will be kept in each student file. Any other certification(s) are evaluated by the fire science faculty. The majority of all other certifications are not accepted as college credit.

Comment [dmm49]: i.e. by the MFFTC?

VI. Opportunity Analysis

Other than maintaining a high level of grass-roots recruiting, the most logical step in pushing the fire science program to the next level is improvement in equipment, lab, and training space. Obtaining new students to the fire science program are consistent when the grass-roots approach to recruitment for School of CJ/FS/EMS is maintained; this was not accomplished in the academic year 2012-2013, and a lower number of fire science students enrolled reflects this inability to reach out to potential students. However, there is the opportunity to increase the student numbers within fire science by improving facilities for fire science. If the program can offer a location that can incorporate more hands-on training with education, LSSU has the potential to reach out to students that would otherwise attend a community college. All of the community colleges in Michigan that have fire science programs have better equipment and facilities. What LSSU does have in equipment is from the efforts of faculty and alumni; mostly, the program operates on donated or used equipment. It should be noted, however, that the fire science program does utilize program/course fees to help meet the demand for equipment.

As a Regional Training Center for the state of Michigan, LSSU can be an example of interoperability, offering a location for practicing and evaluating common interagency processes in fire suppression, fire management, and hazardous materials response. The need for expanding the training site is threefold: (1) it will offer LSSU students the opportunity to practice leadership and management skills while under the stressors of normal firefighting operations, as well as offer local, state, and international fire departments a greater opportunity to practice and evaluate firefighting techniques in a controlled, safe environment; (2) serve as a fire research facility, focusing on fire behavior, temperature fluctuation, and cold weather considerations; (3) it can be used by national and international transportation companies (i.e. railway, tractor-trailer, and maritime) and local and state utility companies for risk management exercises. In short, the development, implementation, and monitoring of training/education activities would increase LSSU's importance to the community, increase research within the fire science program, and create an environment conducive to emergency preparedness.

The main objective of this opportunity is to take full advantage of LSSU's current assets. This can be accomplished in the following manner: (1) upgrade the university training facility to accommodate local, county, state, and federal emergency entities; and (2) develop, implement, and maintain research resources that will be used to facilitate interdepartmental cooperation within LSSU. The most reasonable and logical property to improve is where the present fire training tower and temporary burn building (converted railroad boxcar) are located. The current training tower will be the center of the upgrade, with additional improvements to the revitalized structure that houses the fire engine, ambulances and equipment. In addition, removal of the converted railroad boxcar and erect a burn building (stackable trailers), a burn pit, a small drafting pond, three rail cars that are piped for LP gas, and pavement or gravel for the majority of the training site would all be upgrades that would improve the fire science standing for hands-on education.

The realization of being able to provide training/education to a wider and more diverse audience has become more evident and improvement to the training area will meet this potential market. In short, this program has reached a point at which expansion and outreach is justifiable.

Comment [dmm50]: This needs to be related back to one of your program outcomes, then you can collect evidence of the need, of the impact of what changes you can afford now, and to build a case for subsequent changes.

Comment [DJF51]: The logic of this argument is not clear.

Comment [DJF52]: This seems to be cut-and-paste text that is not unique to the program nor persuasive to expanded resources for the program.

Comment [dmm53]: The School can be commended for preparing their first-draft of the program review documentation. It is hoped that the comments will provide guidance for the ongoing review. Thank you.