ALASKA STATE LEGISLATURE
SENATE EDUCATION STANDING COMMITTEE
February 6, 2013
7:59 a.m.

MEMBERS PRESENT

Senator Gary Stevens, Chair
Senator Mike Dunleavy, Vice Chair
Senator Bert Stedman
Senator Charlie Huggins
Senator Berta Gardner

MEMBERS ABSENT

All members present

COMMITTEE CALENDAR

SENATE BILL NO. 40
"An Act making special appropriations for new engineering buildings for the University of Alaska in Anchorage and Fairbanks; and providing for an effective date."

- HEARD AND HELD

PREVIOUS COMMITTEE ACTION

BILL: SB 40
SHORT TITLE: APPROP: UNIV. ENGINEERING BUILDINGS
SPONSOR(s): SENATOR(s) ELLIS

01/28/13	(S)	READ THE FIRST TIME - REFERRALS
01/28/13	(S)	EDC, FIN
02/06/13	(S)	EDC AT 8:00 AM BELTZ 105 (TSBldg)

WITNESS REGISTER

SENATOR JOHNNY ELLIS
Alaska State Legislature
Juneau, Alaska
POSITION STATEMENT: Sponsor of SB 40.

THOMAS CASE, Chancellor
University of Alaska-Anchorage
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

BRIAN ROGERS, Chancellor
University of Alaska-Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

DOUG GOERING, Dean
College of Engineering and Mines
University of Alaska-Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

ORSON SMITH, Interim Dean
School of Engineering
University of Alaska-Anchorage
Seward, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

PETER STOKES, Chair
College of Engineering and Mines Advocacy and Development Council
University of Alaska-Fairbanks
Fairbanks, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

STEVE MILLER, Member
American Society of Civil Engineers-Matsu
Wasilla, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

GRANT BAKER, Retired Professor of Engineering
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

DALE NELSON, Chair
Legislative Liaison Committee
Alaska Professional Design Council (APDC)
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

KIT DUKE, Associate Vice President for Facilities and Land Management
University of Alaska
Anchorage, Alaska
POSITION STATEMENT: Offered to answer questions related to SB 40.

ROBERT BALDWIN, Managing Principle
Alaska Science and Technology Consultants
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

BOB PAWLOWSKI, Member
College of Engineering and Mines Advisory Development Council
University of Alaska-Fairbanks
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

BRUCE DAVIDSON, representing himself
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

SHAWN FLORIO, Member
Alaska Professional Design Council
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

BRIAN CLEMENTS, Electrical Engineer
CH2M Hill Professional Engineering
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

TOM GILL, Engineering Student
University of Alaska-Anchorage
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

VIRGINIA GROESCHEL, Graduate
School of Engineering
University of Alaska-Anchorage
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

FRANK RAST, AGC Liaison
American Council of Engineering Companies - Alaska,
Anchorage, Alaska
POSITION STATEMENT: Testified in favor of SB 40.

ACTION NARRATIVE

7:59:24 AM
CHAIR GARY STEVENS called the Senate Education Standing Committee meeting to order at 7:59 a.m. Present at the call to

order were Senators Dunleavy, Stedman, Huggins, Gardner and Chair Stevens.

SB 40-APPROP: UNIV. ENGINEERING BUILDINGS

7:59:54 AM
CHAIR STEVENS announced the consideration of [SB 40].

SENATOR JOHNNY ELLIS, sponsor, introduced SB 40. He related that Alaska faces a severe shortage of engineers. In recent years this problem has been compounded by the graying of the work force. The engineering industry and the resource development industry have commented on the enormous expense and hassle of recruiting and retaining engineers from outside of Alaska. Alaska industry prefers Alaskan engineers.

He reported that over the years existing engineering facilities at the University of Alaska-Anchorage (UAA) and the University of Alaska-Fairbanks (UAF) have become woefully inadequate. They are cramped and out of date and lack the special-purpose lab space required for modern engineering. He voiced concern that accreditation may be lost if these challenges are not addressed. He stated that last year, due to the work of the legislature, partial funding was secured for the construction of these much-needed facilities. He said it was time to finish what was started.

He said the effort to invest in Alaska-grown engineers enjoyed enthusiastic support from a broad coalition of Alaska's engineering professional organizations and businesses. Industry advisory boards for both universities have urged the legislature to address growing enrollment and inadequate facilities. It is the regents' number one new construction priority for academic programs. They maintain that there is adequate demand by industry and by individuals for engineering programs at both campuses.

He opined that Alaska is a decade behind providing Alaska-trained engineers to Alaska resource industries.

8:04:09 AM
SENATOR GARDNER agreed that it is an important bill. She addressed course availability for engineering students.

SENATOR ELLIS deferred to other testifiers to answer. He said the biggest complaint heard from students and parents is about inadequate facilities.

CHAIR STEVENS asked what an engineering student needs, other than a drafting table. He requested more information regarding labs.

SENATOR ELLIS understood that specialized facilities are now required in engineering programs.

8:06:29 AM
THOMAS CASE, Chancellor, University of Alaska-Anchorage, agreed with Senator Ellis's comments. He said there is no higher priority for the university, aside from deferred maintenance, in the Board of Regents' budget. He stressed how important the engineering field is in Alaska.

He noted that one of the difficulties in the engineering program is the problem of scheduling courses in sequence, due to lack of lab space. Much of the engineering curriculum involves technology and appropriate labs. He said that he and Chancellor Rogers have advocated for two years for the completion of the new engineering facilities.

8:09:12 AM
CHAIR STEVENS asked about the number of faculty and students currently involved in engineering classes.

CHANCELLOR CASE responded that there were 806 engineering students in 2007 and 1,137 students in 2012, a 41 percent increase.

CHAIR STEVENS asked how many faculty are assigned to the engineering departments.

CHANCELLOR CASE answered that there are 38.5 full-time equivalent (FTE) teaching and instruction-based research faculty at UAA, and 43.5 at UAF.

SENATOR GARDNER suggested the 41 percent increase in enrollment over a five-year period was dramatic. She inquired as to the cause of that jump in enrollment and wondered if efforts to engage students in the science, technology, engineering, and mathematics (STEM) fields played a role.

CHANCELLOR CASE agreed with the need to expand STEM education efforts K - 12 and beyond. The need for additional engineers is also drive by occupational needs for engineers in the Arctic.

8:11:35 AM
BRIAN ROGERS, Chancellor, University of Alaska-Fairbanks, testified in support of SB 40. He called it a positive, cooperative effort between UAA and UAF. He voiced appreciation for last year's support of the project. The money was used right away to award phase one contracts to begin utilities and groundbreaking. Appropriation this year would allow for continuation of work. The work was allocated to an Anchorage-based contractor to build the Fairbanks facility, but Fairbanks subcontractors were also used.

CHANCELLOR ROGERS referred to the 41 percent increase in students and added that, in the fall of 2012, those 1,137 students were formally enrolled in the undergraduate baccalaureate program. He noted there are currently over 1,600 students enrolled in spring semester taking at least one engineering course at either the undergraduate or graduate level. They are on track to reach a goal set in 2006 of doubling the number of engineering graduates. He voiced appreciation for legislative support for operating costs to increase faculty and to unblock course sequences so students can graduate in a timely fashion.

He emphasized the need for specialized laboratories for specific engineering courses and efforts to avoid unnecessary duplication between the two programs.

8:15:08 AM
CHAIR STEVENS asked Chancellor Rogers how many years he has been with the university.

CHANCELLOR ROGERS said he enrolled as a student in 1970.

SENATOR STEDMAN spoke in support of the need for new engineering buildings. He noted caution about the difficulty of future funding and the possibility of the university being a reduction target due to the fact that it is third in line for operating funds behind health and human services and education. He hoped the university would give serious thought as to how facilities would be managed in the future.

8:17:59 AM
CHANCELLOR ROGERS agreed with Senator Stedman's view of long-term challenges. He said one of the reasons the engineering buildings are so important is that engineering talent will be a part of the solution to Alaska's diversified economy. He noted that the university has been working to reduce the energy

footprint of its facilities in order to cut costs. He said he sees FY 14 and FY 15 as critical years with a declining state budget accompanied by a federal decline. The university is working very hard to hold the line on tuition and manage within constraints. He said he understands what Senator Stedman is saying.

SENATOR DUNLEAVY requested information on the number of freshmen who choose engineering at each campus and what areas they are focusing on. He also wanted to know the number of engineering graduates.

8:20:09 AM
CHANCELLOR ROGERS said he could provide that information. He noted that many students don't officially enter a degree program until the second year of college. He offered to provide the number of students in pre-engineering and engineering programs and the number of graduates in each of the programs.

SENATOR DUNLEAVY requested information from previous years, also.

8:21:06 AM
DOUG GOERING, Ph.D., Dean, College of Engineering and Mines, University of Alaska-Fairbanks, related that enrollment in engineering programs at UAF has accelerated over the past seven years to the point of doubling to about 1,000 students. He provided data about which areas student were going into. The fastest growing area is petroleum engineering, which has more than tripled since the early 2000's. The second most attractive field is mechanical engineering, which has doubled. Electrical and computer engineering have remained relatively flat. The civil engineering program has grown modestly.

He addressed graduation rates which have increased substantially over the past few years. Last spring 90 undergraduate engineers graduated. Including graduate degrees and computer scientists, roughly 150 graduated from the College of Engineering and Mines.

He recalled that the need for new engineering facilities was vetted back in 2010 - 2011 with an educational consultant. The analysis was based on enrollment data from the fall of 2010.

He summarized that the university is making great progress on facilities planning on the UAF campus. He spoke highly of the design team and the excellence of the potential labs.

8:26:34 AM
DR. GOERING addressed the need to integrate the facilities into the campuses. He said there is also funding in the budget to renovate existing structures.

CHAIR STEVENS asked if the college does any student career tracking and if there is any data about how many stay and work in Alaska.

DR. GOERING replied that the follow up is related to accreditation activities. He did not have exact data, but believed that around 75 percent of graduates end up in Alaska. He added that placement rates are very high. Several students have gone on to national organizations beyond Alaska.

8:29:43 AM
SENATOR GARDNER asked if UAF is drawing engineering students from outside of Alaska. She wondered if new facilities might have an impact on attracting those students.

DR. GOERING said it was an interesting question. He thought that was already occurring in petroleum engineering. He also thought new facilities would have a positive effect on attracting new students.

8:31:46 AM
SENATOR HUGGINS asked about internal adjustments in order to make room for a "rising tide of demand."

DR. GOERING responded that the university has made some facility adjustments to make room for engineering classrooms and labs. He noted that there has been a shift in enrollment from science to engineering.

8:35:10 AM
ORSON SMITH, Interim Dean, School of Engineering, University of Alaska-Anchorage, described how the enrollment in the School of Engineering has increased by 450 percent to nearly 1,200 students since he began to teach in 1998. He said that 90 percent of those students are Alaskans.

He pointed out that engineering facilities at UAA are less than one-third of the average specialized space other state universities provide for engineering education. He said he is looking forward to the new facilities. Computer programing is the largest program, followed by civil engineering.

DR. SMITH said that engineering students have many intern opportunities and almost all of them are employed upon graduation. Most of them remain in the Anchorage area.

He stated that an investment now in engineering education will benefit Alaska for many years to come.

8:39:01 AM
CHAIR STEVENS asked for more information about high school engineering academies.

DR. SMITH replied that the Anchorage School District follows a national curriculum called "Project Lead the Way," which involves robotics and computer programming.

SENATOR GARDNER asked about enrollment statistics and trends.

DR. SMITH answered that there are currently 1,200 students committed to engineering degree programs. He said that in 2000 there were 293 students in the program; in 2012 there were 1,190 students. He did not see that trend decreasing because of the inspirational programs in secondary schools.

8:42:33 AM
PETER STOKES, Chair, College of Engineering and Mines Advocacy and Development Council, University of Alaska-Fairbanks, explained that he is a petroleum engineer with Petrotechnical Resources Alaska (PRA). He related that he graduated from UAF and has worked in oil and gas for 25 years in Alaska and elsewhere. He noted he was speaking on behalf of the Development Council, which provides guidance to UAF on strategic issues related to engineering.

He thanked the committee for recognizing the need to expand facilities at both campuses. He said new facilities are necessary to meet the demands of the current and future engineering needs in the state. He suggested that both university campuses have complimentary facilities.

8:47:09 AM
He believed that state funding to increase the capacity of the engineering programs is a great investment in the future of engineering in Alaska. Alaska engineering firms would prefer to hire Alaskans. He pointed out that he is speaking on behalf of his two grandsons and the future of engineering.

CHAIR STEVENS said the Red Dog Mine used to employee 100 percent from the local Native Corporation and today they are unable to do so. He asked if Mr. Stokes saw a return to local hire as a possibility in the future.

MR. STOKES said there are many initiatives that are directed toward the education of Native students, such as ANSEP and engineering academies. He reiterated the difficulty of the academics in engineering programs.

8:50:05 AM
SENATOR DUNLEAVY requested a list of all projects the university is requesting funding for from the legislature. He cautioned that the university might not receive funding for everything on the list.

CHAIR STEVENS requested his staff look up that information.

8:52:17 AM
SENATOR STEDMAN suggested the information is listed in the Red Book.

SENATOR HUGGINS shared a personal story. He talked about internships. He addressed the petroleum decline challenge and the benefits of having more available engineers.

CHAIR STEVENS thanked Mr. Stokes.

8:54:54 AM
STEVE MILLER, American Society of Civil Engineers-Matsu, provided supportive testimony for SB 40. He noted he was a part-time employee for BP. He shared his personal work history. He said a good engineering program attracts talent to Alaska. There are many projects that will require engineers to complete those projects.

8:58:31 AM
SENATOR HUGGINS commented on Mr. Miller's background and thanked him for his efforts.

9:00:06 AM
GRANT BAKER, retired UAA and UAF engineering professor, testified in favor of SB 40. He said that 10 years ago there was a shortage of engineers in Alaska and companies had to go elsewhere for hire. About four years ago high schools in Fairbanks and Anchorage started engineering academies. Each of those programs has about 150 students now. Last fall, Eagle

River High School started an engineering program and has over 100 students. In a very short time there will be hundreds of more university students enrolled in engineering programs. He requested funding for the engineering facilities.

CHAIR STEVENS asked Mr. Baker where he lives.

MR. BAKER said he lives in Anchorage.

CHAIR STEVENS inquired if he is involved in the engineering academy in Anchorage.

MR. BAKER said he is involved in Project Lead the Way.

SENATOR GARDNER asked what percentage of students in high school engineering classes, choose engineering as a career.

MR. BAKER replied that there is no data regarding that because the program is so new. He noted that two years ago when students graduated from the Dimond High School program, there was an large increase in the engineering program at UAA.

9:03:55 AM
DALE NELSON, Chair, Legislative Liaison Committee, Alaska Professional Design Council (APDC), provided supportive testimony from the viewpoint of a practicing civil engineer. He thanked Senator Ellis for his work for the engineering profession. He stressed the importance of hiring locally trained engineers and of promoting research. He testified in support of SB 40.

9:07:02 AM
CHAIR STEVENS thanked Mr. Nelson for his continued involvement with engineering in Alaska.

KIT DUKE, Associate Vice President for Facilities and Land Management, University of Alaska, offered to answer questions.

9:08:54 AM
ROBERT BALDWIN, Managing Principal, Alaska Science and Technology Consultants, said he was representing the Institute of Electrical and Electronics Engineers. He stressed the importance of having direct access for new students considering engineering degrees. Lack of adequate classrooms and lab space robs that opportunity and threatens accreditation and capped enrollments. He related the economic benefits of SB 40.

9:11:34 AM
BOB PAWLOWSKI, Member, College of Engineering and Mines Advisory Development Council, University of Alaska-Fairbanks, provided supportive testimony for SB 40. He provided a personal example how engineering programs are key in growing Alaska businesses.

9:14:17 AM
BRUCE DAVIDSON, representing himself, testified in support of SB 40. He spoke in support of having excellent facilities for engineering programs.

9:17:00 AM
SHAWN FLORIO, Member, Alaska Professional Design Council, provided supportive testimony for SB 40. He related that HDR, the firm he works for, could have hired 30 more engineers last year and prefers to hire Alaska graduates. He stressed the need for more Alaska engineers.

9:18:47 AM
BRIAN CLEMENTS, Electrical Engineer, CH2M Hill Professional Engineering, provided supportive testimony for SB 40. He said it is difficult to find enough engineers to get the work done in his company. He emphasized that state-of-the-art facilities are important in attracting engineers to Alaska.

9:20:49 AM
TOM GILL, Engineering Student, University of Alaska-Anchorage, provided supportive testimony for SB 40. He said as a senior civil engineering student, he can attest that the School of Engineering has outgrown the current space and the labs need to be modernized. He stated that SB 40 is an investment in the future.

9:23:22 AM
VIRGINIA GROESCHEL, graduate, School of Engineering, University of Alaska-Anchorage, said she is also the section president for the American Society of Civil Engineers in Alaska and works for DOWL HKM. She provided supportive testimony for SB 40. She said over 60 percent of engineer graduates remain in Anchorage. She recalled the inadequacy of the labs in the engineering program. She wished to see better opportunities for future students.

9:25:57 AM
FRANK RAST, AGC Liaison, American Council of Engineering Companies - Alaska, provided supportive testimony for SB 40. He said nine of the last ten hires have been UAA or UAF graduates. He maintained that the demand for engineers has exceeded the

supply, and it is expensive to recruit in the Lower 48. He stressed the importance of research in the engineering field and the need for new facilities.

9:28:05 AM
SENATOR GARDNER asked about out-of-state female engineering students.

MR. RAST answered that the last two hires were female.

9:29:07 AM
CHAIR STEVENS stated he would hold SB 40 in committee.

9:29:25 AM
There being no further business to come before the Senate Education Standing Committee, Chair Stevens adjourned the meeting at 9:29 a.m.