MEMORANDUM

September 15, 2020

TO: Members of the Board of Trustees

FROM: Dr. Jim Malatras, Chancellor

SUBJECT: Degree Authorization for the State University of New York College of Environmental Science and Forestry

Action Requested

The proposed resolution authorizes the State University of New York College of Environmental Science and Forestry to offer the Master of Engineering degree, subject to approval by the New York State Board of Regents.

Resolution

I recommend that the Board of Trustees adopt the following resolution:

Resolved that the Chancellor be, and hereby is, directed to seek the authorization of the New York State Board of Regents for the State University of New York College of Environmental Science and Forestry to confer the Master of Engineering degree.

Background

Approval of this resolution will authorize the State University of New York College of Environmental Science and Forestry (SUNY ESF) to confer the Master of Engineering (M.E.) degree, subject to approval by the New York State Board of Regents. Degree authorization is necessary as the proposed award represents SUNY ESF’s first use of the M.E. degree.

SUNY ESF has offered degree programs in Environmental Resources Engineering (ERE) since the early 1970s, adding the Ph.D. in this area in 2011. The proposed graduate program, the M.E. in Environmental Resources Engineering, would target professionals who already hold an undergraduate degree in science or engineering. It is distinct from SUNY ESF’s current ERE master’s programs in that it emphasizes training in engineering planning, management and project execution; the College’s M.P.S. and M.S. degrees focus on technical courses and culminate in a research-based project. The proposed M.E. culminates in a team-based design project addressing the
engineering needs of a community client. Through this applied-professional practice program, students develop knowledge and skills in project planning, leadership, and execution. The M.E. program will also contribute one year of professional training experience toward the required 12 years of experience for Professional Engineering licensure in New York State.

The program’s primary objective is to train students who will lead the development and application of new knowledge in ecological, geospatial and water resources engineering. Graduates will be able to: identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics; apply the engineering design process to produce solutions; and, make informed judgments in consideration of larger global, economic, environmental, and societal contexts. As the M.E. program will focus on applied-professional practice, graduates will also learn how to function effectively as a member or leader of a team and how to promote a collaborative and inclusive work environment. The student capstone experience will provide engineering planning and preliminary design services for New York State community partners.

Existing SUNY ESF faculty are highly qualified and hold the appropriate terminal degrees as well as licensure and/or certification to offer the proposed program, including in relevant specific subfields (e.g., professional hydrologists and certified professionals in erosion and sediment control).

The program is expected to grow to a steady state enrollment of 15 students per year in year five. This is a conservative figure based on a quantitative view of the Central New York engineering marketplace and interviews with key local engineering employers. The program will be marketed beyond Central New York and anticipates attracting students from across the Northeast and the US in general, as well as select international students. Recognizing the need to include engineers with diverse backgrounds, the M.E. program will encourage diversity in enrollment through multiple measures, including off-campus, on-line, and on-campus recruitment.

The job outlook for professional engineers is strong, with a critical need for engineers in Central New York. The 10-year projected job growth in Central New York is 9.4% for civil engineers (versus 3.4% nationally), and 7.9% for architectural and engineering managers (versus 0.4% nationally), environmental engineers are currently, and projected to be, needed at twice the national average. Additionally, Syracuse is home to large offices of four leading environmental firms that collectively employ over 400 engineers, along with many other engineering and STEM businesses.

All of SUNY ESF’s Engineering programs are accredited by ABET’s Engineering Accreditation Commission. Although the M.E. program is not designed to meet specialized accreditation standards, assessment of the proposed M.E. program will largely follow the structure and procedures of the ABET-accredited ERE B.S. program.
Strengths of the proposed program cited by external evaluators included the capstone design experience, the quality of the faculty, and existing ERE partnerships with industry, government, and non-profit agencies. Evaluators noted the demand for a professionally focused degree, with employers seeking employees who can manage complex projects. They also recognized that there was limited regional competition for prospective students.

Offering an M.E. fits well with SUNY ESF’s mission: “…educating and inspiring to action environmental leaders, and acting as a model of a new kind of environmentalism that is science based, values informed, and inclusive.” The program has been carefully reviewed and found to be sound, both academically and financially.