COORDINATING COMMISSION
FOR POSTSECONDARY EDUCATION

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PROPOSAL FOR NEW INSTRUCTIONAL PROGRAM

Form 92-40

SECTION I

Institution Submitting Proposal: University of Nebraska-Lincoln

Title of Program: Regional and Community Forestry

CIP Code: 03.0508

Organizational Unit in which program will be located:

School of Natural Resources

Name of contact person in the event additional information is needed: Dr. David S. Jackson

Telephone: 402-472-5242

Degree, Diploma, or Certificate to be offered (use separate submittal for each level):

Bachelor of Science in Regional and Community Forestry

Proposed date to initiate program: When approved by the Coordinating Commission

List the location(s) where this program will be offered: UNL

If the program has a projected ending date, please so indicate:

Date approved by Governing Board: December 5, 2019
(Attach all documents related to this proposal upon which the Governing Board made its decision to approve the proposal.)

Chief Executive Officer's or other Authorized Officer's signature: _____
David S. Jackson

TO:	The Board of Regents	Addendum IX-A-2
	Academic Affairs	
MEETING DATE:	December 5, 2019	
SUBJECT:	Creation of the Bachelor of Science (BS) in Regional and Community Forestry in the School of Natural Resources in the College of Agricultural Sciences and Natural Resources at the University of Nebraska-Lincoln (UNL)	
RECOMMENDED ACTION:	Approval is requested to create the Bachelor of Science in Regional and Community Forestry in the School of Natural Resources in the College of Agricultural Sciences and Natural Resources at UNL	
PREVIOUS ACTIONS:	May 16, 1997 – The Board approved the establishment of the School of Natural Resource Sciences at UNL. November 10, 1978 – The Board approved the renaming of the UNL Master of Science in the Department of Forestry and Wildlife to the Master of Science in the Department of Forestry, Fisheries and Wildlife.	
EXPLANATION:	The proposed interdisciplinary Bachelor of Science in Regional and Community Forestry is designed for students wishing to pursue careers in urban forest management, arboriculture, urban wildland interface management, and the green infrastructure industry. The purpose of the degree program is to produce highly-skilled and knowledgeable professionals in the areas of urban forestry management, plant and social sciences essential to managing natural resources in rural and urban environments. Students will be qualified for immediate employment upon graduation, or for advancement in several fields of study including horticulture, forestry, or natural resource sciences. The School of Natural Resources (SNR) will administer the program with the Department of Agronomy and Horticulture. This proposal has been reviewed by the Council of Academic Officers; it also has been reviewed by the Academic Affairs Committee.	
PROGRAM COST:	$5,000 for Year 1; $25,000 over five years	
SOURCE OF FUNDS:	Tuition and fees	
SPONSORS:	Richard E. Moberly Interim Executive Vice Chancellor and Chief Academic Officer Ronnie D. Green, Chancellor University of Nebraska-Lincoln	
RECOMMENDED:	David S. Jackson Interim Executive Vice President and Provost	
DATE:	November 8, 2019	

PROPOSAL FOR BACHELOR OF SCIENCE IN REGIONAL AND COMMUNITY FORESTRY

I. Descriptive Information

Institution Proposing the Program: University of Nebraska-Lincoln (UNL)

Program Name: Regional and Community Forestry

Degree to be Awarded: Bachelor of Science in Regional and Community Forestry (with two options: a) Urban Forestry Management; and b) Arboriculture)

Other Programs Offered in this Field by this Institution: The University of Nebraska-Lincoln currently offers no other individualized program of study in Regional and Community Forestry

CIP CODE: 03.0508

Subject Prefix Code: Use existing subject prefix code - NRES

Administrative Units for the Program: School of Natural Resources (SNR)

Proposed Delivery Site: University of Nebraska – Lincoln

Distance Delivery: No

Date Approved by Governing Board:

Proposed Date (term/date) of Program Initiation: Fall 2020

II. Details

A. Purpose of the Proposed Program:

The proposed Regional and Community Forestry (RCF) undergraduate degree program is designed to serve the needs of students who desire academic training that will enable them to pursue careers in urban forest management, arboriculture, urban wildland interface management, green infrastructure industry, and other related fields not currently offered by UNL.

The purpose of the degree program is to produce highly skilled and knowledgeable professionals with "career ready" skills in problem solving, critical thinking, and effective oral and written communication in the areas of urban forestry management, plant and social sciences essential to managing natural resources in rural and urban environments. Students will be qualified for immediate employment upon graduation, or for advancement in several fields of study including horticulture, forestry, or natural resources sciences.

Students will complete multidisciplinary coursework during the program. An emphasis on internships with partners including state agencies, regional companies, and nonprofits will draw on interdisciplinary linkages within UNL, and will capitalize on strong partnerships with state agencies, nonprofits and the private sector to enhance experiential learning opportunities.

The School of Natural Resources (SNR) in partnership with the Department of Agronomy and Horticulture will administer the program. The SNR will provide administrative support of the program.

B. Description of the Proposed Major or Degree

Requirements for admission into the degree program and College of Agricultural Sciences and Natural Resources (CASNR) are consistent with general University admission requirements (one unit equals one high school year): 4 units of English, 4 units of mathematics, 3 units of natural sciences, 3 units of social studies, and 2 units of foreign language. Students also must meet performance requirements [ACT composite of 20 or higher OR combined SAT score of 950 or higher OR rank in the top one-half of graduating class; transfer students must have a 2.0 (on a 4.0 scale) cumulative grade point average and 2.0 on the most recent term of attendance].

The proposed multidisciplinary program has been designed to utilize existing courses currently offered at UNL.

Degree Options:

1) Urban Forestry Management (18 hours) is for students interested in managing forests in a human dominated environment at the landscape level. Career opportunities include: urban or community forest management, municipal forester, natural resource coordinator, community forestry coordinator at local, regional, state, and federal levels and researchers at university, state, regional and national institutions. Students interested in advance degrees would be well suited for graduate studies in Community and Regional Planning or Natural Resource Sciences.

2) Arboriculture (19 hours) is for students interested in careers in the tree care industry. Career opportunities include: arborist, consulting arborist, tree crew supervisor, plant health care, utility arboriculture, municipal arboriculture, horticulture, landscape management, and natural resource management and consulting.

Core degree requirements (including CASNR requirements):

Removal of C-, D and F Grades

Only the most recent letter grade received in a given course will be used in computing a student's cumulative grade point average if the student has completed the course more than once and previously received a grade or grades below C in that course.

The previous grade (or grades) will not be used in the computation of the cumulative grade point average, but it will remain a part of the academic record and will appear on any transcript.

A student can remove from his/her cumulative average a course grade of C-, D+, D, D- or F if the student repeats the same course at the University of Nebraska and receives a grade other than P (pass), I (incomplete), N (no pass), W (withdrew), or NR (no report). If a course is no longer being offered, it is not eligible for the revised grade point average computation process.

For complete procedures and regulations, see the Office of the University Registrar website at http://www.unl.edu/regrec/course-repeats.

Pass/No Pass

Students in CASNR may take any course offered on a Pass/No Pass basis within the 24-hour limitation established by the Faculty Senate.

GPA Requirements

A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation.

Transfer Credit Rules

To be considered for admission, a transfer student, Nebraska resident or nonresident, must have an accumulated average of C (2.0 on a 4.0 scale) and a minimum C average in the last semester of attendance at another college. Transfer students who have completed less than 12 credit hours of college study must submit either ACT or SAT scores.

Ordinarily, credits earned at an accredited college are accepted by the University. The College, however, will evaluate all hours submitted on an application for transfer and reserves the right to accept or reject any of them. Sixty (60) is the maximum number of hours the University will accept on transfer from a two-year college. Ninety (90) is the maximum number of hours the University will accept from a four-year college. Transfer credit in the degree program must be approved by the degree program advisor on a Request for Substitution Form to meet specific course requirements, group requirements, or course level requirements in the major. At least nine hours in the major field, including the capstone course, must be completed at the University of Nebraska–Lincoln regardless of the number of hours transferred.

The College will accept no more than 10 semester hours of C-, D+, D and D- grades from other schools. The C-, D+, D and D- grades can only be applied to free electives. This policy does not apply to the transfer of grades from University of Nebraska at Omaha or University of Nebraska at Kearney to the University of Nebraska–Lincoln.

Course Requirements

The course requirements and student learning outcomes for a Bachelor of Science in Regional and Community Forestry degree program requirements are detailed in Appendix A and B respectively. While the proposed program is interdisciplinary in nature, the core courses are cross-listed as NRES/HORT and offered by faculty in the School of Natural Resources due to the highly specialized nature of the material.

Core Course Descriptions:

NRES/HORT 201 Dendrology: Study and identification of trees and shrubs - Credit Hours: 3

An introduction to the naming, identification, and natural history of woody trees and shrubs in North America with emphasis on woody species common to Nebraska. Covers morphology, natural site conditions, wildlife and human uses of woody trees and shrubs. A weekly field session emphasizes techniques in identification and taxonomy.

NRES/HORT 302 Tree Biology Credit Hours: 3

The study of the structure and function of woody plants, with a focus on trees growing in temperate climates. Covers the basics of wood physiology in terms of the biological, physical, and chemical processes utilized by tree to function. The anatomy and morphology of trees with a focus on the impacts of tree maintenance to the structure and function of landscape trees.

NRES 310 Introduction to forest management – Credit Hours: 4

Introduction to forest management discusses the history, biology, and management of the world's forest resources with emphasis on the Great Plains region. Topics include: forest types and their relationship to site conditions, ecological principles of forest management, basic forest management practices, economic and policy decisions in forest management. The field-oriented lab emphasizes forest ecology, forest management and wood products.

NRES/HORT 321 Arboriculture: Maintenance & selection of landscape trees Credit Hours: 4

Arboriculture covers practical application of the science of tree growth, development, and management in human dominated landscapes. Tree selection for varying landscapes and objectives, proper planting and pruning, identification and correction of tree defects, and working with tree pest issues. During the laboratory and field portion of the course students learn the practical skills of tree risk assessment, climbing, and chainsaw safety along pest and disease identification and management.

NRES/HORT 457 Green space and urban forestry management – Credit Hours: 3 – ACE 10

Green space and urban forestry management focuses on the management of trees, parks, and green infrastructure in rural and urban communities. Perspectives from community planning, landscape architecture, urban forestry, natural resources, horticulture, and environmental policy. Development and implementation of green space and forest management plans encompassing societal needs and biological limitations in rural and urban communities. Students work directly with a community or organization to create management plans.

Students also must select and fulfill the requirements of a degree option based on their area of interest. A brief overview of major and option requirements are shown below.

Table 1. Core degree requirements (including CASNR requirements) 85-94 credits.

Topic area	Required Credits	ACE
College integrative course	4	
Mathematics, Statistics, Economics	9	3, 6
Communications	6	1, 2
Biology, Chemistry, Physics	16	4
Geographic Information Systems	3	
Ecology	6	
Policy	3	
Soil and water science	7	
Entomology and Pathology	8	
Plant identification	6	
Career Experience	1	
Forestry and Arboriculture	10	
Capstone Course	3	10
ACE Courses	3-12	5, 7, 8, 9

Table 2. Option requirements for Urban Forest Management and Arboriculture.

Option: Urban Forest Management – 18 credits

Topic area	Required Credits	ACE
Urban Studies	9	5, 6, 8, 9
Communications	6	
Policy	3	4
Free electives	7-17	

Option: Arboriculture – 19 credits

Topic area	Required Credits	ACE
Water Science	3	
Soil Science	3	
Horticulture	7	7, 9
Business	3	
Free electives	7-17	

Example Four-Year Plan

Freshman Year

Term 1	cr	Term 2	cr
SCIL 101 Science Literacy (ACE 8)	3	LIFE 121/121L Fundamentals of Biology II & Lab	4
NRES 101 Natural Resources Orientation	1	SOIL 153 Introduction to Soil Science	4
LIFE 120/120L Fundamentals of Biology & Lab (ACE 4)	4	MATH 104 Applied Calculus (ACE 3)	3
ENTO 115/116L Insect Biology	4	ALEC 102 Interpersonal Skills for Leadership (ACE 2)	3
ENGL 150 Writing and Inquiry (ACE 1)	3		
Total credit hours	**15**	**Total credit hours**	**14**

Sophomore Year

Term 3	cr	Term 4	cr
NRES 220/222 Ecology & Lab	4	NRES 323 Natural Resources Policy	3
CHEM 105 Chemistry in Context I	4	AECN 141 Introduction to the Economics of Ag (ACE 6)	3
ACE 5 Humanities	3	ACE 7	3
NRES 201 Dendrology	3	STAT 218 Introduction to Statistics	3
		HORT 214 Herbaceous Plants	3
Total credit hours	**14**	**Total credit hours**	**15**

Junior Year

Term 5	cr		Term 6	cr
NRES 301 Environmental Communication Skills	3		PLPT 369/L Introduction to Plant Pathology & Lab	4
MSYM 109 Physical Principles in Ag & Life Sciences	4		ACE 9 Global Diversity	3
NRES 302 Tree Biology	3		NRES 321 Arboriculture	4
NRES 281 Introduction to Water Science	3		NRES 312 Introduction to GIS	3
NRES 289 People and the Land (ACE 5)	3		NRES 496 Independent Study	1
Total credit hours	**16**		**Total credit hours**	**15**

Senior Year

Term 7	cr		Term 8	cr
CRPL 300 The Community and the Future	3		NRES 424 Forest Ecology	3
NRES 310 Introduction to Forest Management	3		NRES 457 Greenspace and Urban Forestry (ACE 10)	3
CRPL 470 Environmental Planning and Policy	3		COMM 371 Communication in Negotiation	3
Free Electives	6		CRPL 400 Introduction to Planning	3
			Free Elective	4
Total credit hours	**15**		**Total credit hours**	**16**

4-Year Credit Hour Total = 120

Advising and Internships

Students will participate in internships offered through partnerships with the Nebraska Forest Service and local and national tree care companies, such as Davey Tree. Internships are typically paid and are offered at no cost to the students. Students will be advised by both a faculty member and the School of Natural Resources academic coordinator. The faculty member will work to mentor students on career and academic success, and the academic coordinator will assist students with scheduling coursework and completing their degree in a timely fashion.

Program Accreditation

Currently the Society of American Foresters (SAF) offers accreditation for Urban Forestry programs. The proposed degree in Regional and Community Forestry adheres to the SAF accreditation guidelines and the School of Natural Resources may seek accreditation after the proposed degree is in place.

III. Review Criteria

A. Centrality to Role and Mission

As a land-grant University, the University of Nebraska is charged with instruction, research, and outreach in agriculture and mechanic arts, not excluding other scientific or classical areas of study. The Institute of Agriculture and Natural Resources (IANR) was established through Nebraska legislative action for leadership in and service in agriculture, natural resources, and related fields of study. The College of Agriculture Sciences and Natural Resources (CASNR) is home to more than 30 undergraduate degree programs providing instruction, research, and outreach in agriculture, natural sciences, and

other related fields. Within CASNR the School of Natural Resources (SNR) offers five degree programs in natural resource sciences delivering new knowledge on environmental and natural resource management issues facing the state of Nebraska, the Great Plains region, the nation and the world.

Both CASNR and SNR have a long and distinguished history of preparing talented, highly-trained and motivated professionals who develop solutions, innovations, and discoveries changing the future of the world. A new degree program in Regional and Community Forestry would continue the tradition of preparing students for rewarding careers in the multi-disciplinary fields of urban forestry, arboriculture, and natural resource management in human dominated systems.

B. Relationship of the proposal to the Nebraska University Strategic Framework

The University of Nebraska will play a critical role in building a talented, competitive workforce and knowledge-based economy in Nebraska in partnership with the state, private sector and other educational institutions.

1. Increase proportion of the most talented Nebraska high school students who attend the University of Nebraska.
2. To attract talent to the state, increase the number of nonresident students who enroll at the university.
3. Analyze areas of future workforce demand, including job and self-employment opportunities in non-growth rural communities and economically-disadvantaged urban areas, and strengthen or develop curricula and programs appropriate to the university in alignment with those areas.
4. Develop educational programs that prepare students for the flexibility required to respond to the uncertainty of future workforce demands.

C. Evidence of Need and Demand

The global population, including the United States and Nebraska, is becoming increasing urbanized.[1,2] Over 70% of Nebraskans now reside in urban and suburban settings[3] and their immediate connection with nature is through trees and managed landscapes, often referred to as community or urban forests, in their communities. Urban Forestry and Arboriculture are growth industries nationwide that require a professional workforce trained in applied physical and social sciences. The employment projections from the Bureau of Labor Statistics show 163,100 jobs available in forestry and arboriculture professions by 2028, an increase over 2018 employment.[4] Nebraska's long-term occupational projections show approximately 1,700 available forestry jobs and arboriculture professions by 2026, an increase over 2016.[5] Urban forests include regional land forested specifically for the benefit of people and, in Nebraska, include shelterbelts and trees in rural and urban communities. Community forests are increasingly recognized as providing a wealth of ecosystem services that enhance environmental and human health, reduce energy consumption, increase carbon sequestration, and provide substantial economic benefits. These forests are enormously valuable components of community ("green")

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[1] Global urbanization increases - https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.Pdf
[2] 80.7% of the United States Population is in urban areas - https://www.census.gov/geo/reference/ua/uafacts.html
[3] Estimates based on the 2010 U.S. Census - https://www.census.gov/prod/cen2010/cph-2-29.pdf
[4] Bureau of Labor Statistics Employment Projections https://www.bls.gov/emp/tables/occupational-separations-and-openings.htm
[5] NEWorks Occupational Projections https://neworks.nebraska.gov

infrastructure, ameliorating harsh conditions and enhancing the quality of life in rural communities across the Great Plains and Intermountain West landscapes. For example, the U.S. Forest Service (USFS) calculated the replacement value of Nebraska's community forests alone at $9.8 billion.[6] Nebraska community trees provide nearly $120 million in benefits annually by removing pollution, capturing and storing carbon, and reducing energy costs for residential buildings.[5]

Current and projected changes in climate (higher temperatures, greater frequency of erratic weather, severe weather, and wildland-urban interface fire events) across the Great Plains and Intermountain West have already stressed urban and community forest resources, and these stressors will continue to increase in frequency and intensity going forward.[7] The addition of current major disease epidemics (e.g. pine wilt nematode), native insect infestations (e.g. mountain pine beetle), and exotic invasive species (e.g. emerald ash borer, Asian long-horned beetle) have already created a demand for professionals with training in urban forestry and arboriculture. Demand for professionals trained in the complexities of forest and tree management in human dominated landscapes is due to: 1) increased urbanization across the region, 2) recognition of the value of community trees and forests to ameliorate harsh urban and climatic conditions, 3) proven ecosystem services that urban forests provide and 4) increased stress these systems will experience through invasive pests and increased urbanization. There is a clear and pressing need for trained urban foresters and arboricultural professionals across the Great Plains region and throughout the nation.

Investing in the development of the proposed RCF academic degree program at UNL will foster long-term, sustained impacts on the quality and resilience of our community forests across Nebraska and the Great Plains region of the U.S. There may be no better way to positively affect regional and community forests over the long-term than to train a large cadre of urban foresters and tree care professionals residing and working in cities and towns across the region, positively influencing the quality of tree care over their careers. The degree program is expected to draw students from urban areas into CASNR, as well as more non-Nebraska students to UNL. The tables below show the results of current CASNR student interest in the proposed program.

A report from UNL Academic Services and Enrollment Management shows over 500 Nebraska high school students with the potential to enroll in courses in fall 2019 expressing an interest in forestry related degrees. The details can be seen in Table C-1.

[6] Assessing Urban Forest Effects and Values of the Great Plains: Kansas, Nebraska, North Dakota, South Dakota - https://www.nrs.fs.fed.us/pubs/rb/rb_nrs71.pdf

[7] Our Changing Climate report - http://nca2014.globalchange.gov/highlights/report-findings/extreme-weather

Table C-1. Survey results of Nebraska high school students with the potential to enroll in fall 2019. Includes interest areas in forestry and other natural resource related interests.

Interest Area	Fall 2019
Environmental Restoration Science	283
Environmental Studies	2031
Fisheries and Wildlife	2151
Grassland Ecology and Management	16
Horticulture	85
Landscape Architecture	164
Plant Biology	341
Pre-Forestry	540
Turfgrass and Landscape Management	19
Water Science	27
Total	**5657**

Stakeholders in urban and community forestry, arboriculture, and natural resource management (with representation from Nebraska's nine Economic Districts) were surveyed to gauge the need and interest in a new degree program serving urban forest and arboriculture industry. Respondents represented private industry, non-profits, local, state, and federal agencies, and higher education. The results are presented in Tables C-2 and C-3.

Table C-2. Survey results of stakeholders in urban forestry, arboriculture, and natural resources management (n = 214).

Response	Need for Degree	Support Degree Creation at UNL
Yes	**186 (87%)**	**183 (86%)**
Maybe	**25 (12%)**	**29 (14%)**
No	**3 (1%)**	**1 (< 0.5%)**

Table C-3. Survey results of stakeholders in urban forestry, arboriculture, and natural resources management on the number of current or future capacity to hire graduates with a degree in Regional and Community Forestry. (n = 209)

Number of employees	Number of Employers Reporting: Current or future (next 4-years) employee capacity
1-5	**143 (68%)**
6-10	**14 (7%)**
11-20	**9 (4%)**
21-50	**4 (2%)**
50+	**10 (5%)**
None	**29 (14%)**

Current UNL undergraduate students attending classes in CASNR were surveyed to gauge potential student interest for a degree in Regional and Community Forestry and careers they would be prepared for upon degree completion. Seventy-two percent (72%) of respondents indicated a level of interest to obtain a degree in Regional and Community Forestry (Table C-4). Only 20% of students indicated no interest in careers related to Regional and Community Forestry (Table C-5). Survey results are presented in Tables C-4 and C-5.

Table C-4. Student survey response to the question: Would you be (or have you been) interested in a obtaining a degree forestry, community forestry, or arboriculture? (n = 146)

Response	Number respondents
Yes	**41 (28%)**
Maybe (with more information)	**64 (44%)**
No	**41 (28%)**

Table C-5. Student survey response to the question: Which Regional and Community Forestry careers would you be interested? Respondents could select multiple options. (n = 146)

Career	Responses
Arborist / tree care professional - tree climbing, pruning, and maintenance	**49 (34%)**
Community/Municipal/Urban forester - managing trees and natural areas for towns, cities, counties, and states	**31 (21%)**
Natural resource coordinator - working with communities to asses and manage natural resources including trees	**54 (37%)**
Community forestry coordinator - working with communities and volunteers at local, state, federal level to improve their trees and forests	**28 (19%)**
Conservation/Environmental technician - working with companies, communities, or conservation districts on issues related to trees and forests (protecting watersheds, air quality, reduction in energy consumption, etc.)	**64 (44%)**
Consultant - assessment of trees and environmental conditions for corporate or private entities	**40 (27%)**
Research scientist - working with U.S. Forest Service, industry, or Universities on tree and forestry related research	**55 (38%)**
No interest in careers relating to trees, forests, or forest ecosystems	**29 (20%)**

D. Adequacy of Resources

Faculty/Staff. Current faculty and staff will fulfill the teaching, advising, and recruitment needs of the proposed RCF degree program. Dr. Dave Wedin and Dr. Eric North are currently teaching forestry courses in the School of Natural Resources. The current SNR academic coordinator and recruiter with assist in recruitment and advising of students.

Physical Facilities. Students enrolled in the degree will take newly-developed and existing courses in the current facilities. No new facilities are needed.

Instructional Equipment and Informational Resources. New equipment will be purchased using funds allocated from the U.S. Forest Service and Nebraska Forest Service grant. There is minimal need for recurring or additional instructional equipment. Recurring equipment costs include replacement of field gear and additional plant materials used during field instruction.

Budget Projections. Funding for the new program, including general operating expenses and equipment needs is $35,000 over five years. No new faculty are required to establish the degree program. Revenue projections are based on conservative student enrollment in the new program: 2020-21 (5), 2021-22 (5), 2022-23 (10), 2023-24 (10), and 2024-25 (10).

E. Avoidance of Unnecessary Duplication

The proposed program will represent the only Bachelor of Science in Regional and Community Forestry (RCF) in Nebraska or the any of the Great Plains states. With the combined resources and expertise of the University of Nebraska, Nebraska Forest Service, and National Agroforestry Center, there is great potential for Nebraska to serve as a major center of excellence for regional and community forestry academic programming. UNL's existing horticulture, agronomy, landscape architecture, community and regional planning, and outreach expertise and capacity will contribute to a successful regional and community forestry program.

The proposed RCF undergraduate major also will complement and capitalize on the substantial Community Forestry and Sustainable Landscapes technical support and outreach programs implemented by the Nebraska Forest Service (NFS) and the Nebraska Statewide Arboretum, its nonprofit partner. The NFS focuses the work of 14.5 FTEs solely on implementing its Community Forestry and Sustainable Landscapes program. This represents nearly 30% of the agency's total FTEs, an unparalleled commitment to community forestry in state forestry agencies nationwide. The NFS is a leader in community forestry innovation. As part of IANR, with courtesy faculty appointments in SNR, the NSF is strongly committed to regional and community forestry initiatives.

An RCF program at UNL would be designed to attract and educate students from communities throughout Nebraska, and 17 states comprising the Great Plains and the Intermountain West. Several national analyses of existing Community Forestry academic programs have resulted in similar, somewhat startling findings - there are no Community Forestry undergraduate degree programs being offered in the Great Plains (other than in Texas) and Intermountain West states. Seventeen universities offer a range of arboriculture and community forestry academic programs around the county.

University of Wisconsin-Steven's Point is considered one of the more successful community forestry programs in the country, with approximately 65 undergraduate majors. Other leading undergraduate programs are largely located in the eastern U.S.: Virginia Tech, University of Maryland, University of Massachusetts, University of Minnesota, and Penn State University, all with dramatically different conditions than exist in the more arid Great Plains and Intermountain west. Iowa State and the University of Missouri offer some community forestry courses; however, neither offers a degree in arboriculture or community forestry.

In addition to providing traditional arboriculture and community forestry academic coursework and training, the UNL RCF academic program also will train future professionals to understand and manage the connection between rural and urban areas, where shelterbelts and forests help to enhance environmental quality along rivers, roads, etc., and can provide benefits to communities of various densities. The presence of the National Agroforestry Center in Lincoln is a substantial resource capable and willing to provide technical expertise and support to develop and implement the new RCF degree program.

F. Consistence with the Comprehensive Statewide Plan for Postsecondary Education[8]

The RCF degree addresses the following statewide education goals:

> *"Nebraska colleges and universities will provide their graduates with the skills and knowledge needed to succeed as capable employees and responsible citizens."*
>
> *"Higher education in Nebraska will be responsive to the workforce development and ongoing training needs of employers and industries to sustain a knowledgeable, trained, and skilled workforce in both rural and urban areas of the State."*
>
> *"Higher education will serve the State by preparing individuals for productive, fulfilling lives and by developing and nurturing the citizens and future leaders of Nebraska."*
>
> *"Postsecondary education institutions will assess evolving needs and priorities in a timely manner and will be prepared to change and adopt new methods and technologies to address the evolving needs and priorities of the students and people of Nebraska."*
>
> *"Nebraska's postsecondary institutions will be student-centered and will offer life-long learning opportunities that are responsive to student's needs."*
>
> *"Postsecondary education institutions will provide appropriate support services to help all students reach their educational goals, regardless of where or how the instruction if delivered."*

The proposed degree would help reduce Nebraska and nationwide workforce shortages by educating and training a new generation of students to address invasive pests and the development pressures currently affecting urban forests and natural resources.

Appendices Included

- Appendix A: Detailed Regional and Community Forestry degree requirements
- Appendix B: Student Learning Outcomes & Assessment Course
- Appendix C: Letters of Support
  - UNL College of Architecture
  - Arbor Day Foundation
  - The Davey Tree Expert Company
  - The International Society of Arboriculture
  - The Nebraska Forest Service

[8] Nebraska's Coordinating Commission for Postsecondary Education
https://ccpe.nebraska.gov/sites/ccpe.nebraska.gov/files/doc/CompPlan.pdf

Appendix A: Detailed Regional and Community Forestry degree requirements

Core Course with CASNR Requirements:

	Course #	Title	Prerequisites	Credits	ACE
College integrative course - 4 credits				4	
	SCIL 101	Science and Decision-Making in a Complex World	N/A	3	
	NRES 101	Natural Resources Orientation	N/A	1	
Mathematics - 2 credits				2	
	MATH 102	Trigonometry	MATH 101 or placement	2	
	MATH 103	College Algebra and Trigonometry	placement	5	
	MATH 104	Applied Calculus	MATH 101 or placement	3	3
	MATH 106	Calculus I	MATH 102 or MATH 103 or placement	5	3
Statistics - 3 credits				3	
	STAT 218	Introduction to Statistics		3	3
Economics - 3 credits				3	
	AECN 141	Introduction to the Economics of Agriculture		3	6
	ECON 200	Economic Essentials and Issues		3	6, 8
	ECON 211	Principles of Macroeconomics		3	6, 8
	ECON 212	Principles of Microeconomics		3	6, 8
Written Communications - 3 credits				3	
	ENGL 150	Writing and Inquiry		3	1
	ENGL 151	Writing and Argument		3	1
	ENGL 254	Writing and Communities		3	1
	JGEN 120	Basic Business Communication		3	1
	JGEN 200	Technical Communication I		3	1
	JGEN 300	Technical Communication II		3	1
Oral Communications - 3 credits				3	
	ALEC 102	Interpersonal Skills for Leadership		3	2
	COMM 101	Communication in the 21st Century		3	2
	COMM 209	Public Speaking		3	2
	COMM 210	Communicating in Small Groups		3	2
	COMM 215	Visual Communication		3	2
	COMM 283	Interpersonal Communication		3	2
	COMM 286	Business and Professional Communication		3	2

	Course #	Title	Prerequisites	Credits	ACE
	MRKT 257	Sales Communication		3	2
	NRES 260/301	Environmental Communication Skills		3	2
Biological - 8 credits				8	
	LIFE 120/120L	Fundamentals of Biology I with Lab		4	4
	LIFE 121/121L	Fundamentals of Biology II with Lab	LIFE 120/120L	4	4
Chemistry - 4 credits				4	
	CHEM 105	Chemistry in Context I	MATH 101 or above	4	4
	CHEM 109	General Chemistry I	MATH 103 /104/ 106	4	4
Physics - 4 credits				4	
	MSYM 109	Physical Principles in Agriculture & Life Sciences	MATH 101 or MATH 103 or placement	4	4
	PHYS 141	Elementary General Physics I	MATH 102	5	4
	PHYS 151	Elements of Physics	MATH 102	4	4
Geographic Information Systems - 3 credits				3	
	GEOG 217	Mapping Science in the 21st Century		3	
	NRES 312	Introduction to GIS		3	
	ANTH 387	GIS in Archaeology		3	
	NRES 412	Introduction to Geographic Information Systems		4	
Ecology - 7 credits				7	
	BIOS 207	Ecology and Evolution	LIFE 120/121	4	
	NRES 220 & NRES 222	Principles of Ecology & Ecology Lab	MATH 101 or MATH 103	4	
	NRES 424	Forest Ecology	NRES 220	3	
	LARC 487	Introduction to Landscape Ecology	SOIL 153 and NRES 220	3	
Soil and Water Science - 7 credits				7	
	SOIL 153	Soil Resources		4	
	NRES 281	Introduction to Water Science		3	
Policy - 3 credits				3	
	NRES 315	Human Dimensions of Fish and Wildlife Management		3	
	NRES 323	Natural Resources Policy		3	6
	AECN 357	Natural Resource and Environmental Law		3	
	NRES 409	Human Dimensions of Natural Resources Management	Junior standing	3	
Arboriculture and Forestry - 10 credits				10	
	NRES 302	Tree Biology	BIOS 101 or LIFE 120	3	

	Course #	Title	Prerequisites	Credits	ACE
	NRES 310	Introduction to Forest Management		3	
	NRES 321	Arboriculture		4	
Pests and Pathogens - 8 credits				8	
	ENTO 115L	Insect biology		3	4
	ENTO 116	Insect biology lab		1	
	PLPT 369	Intro Plant Path	BIOS 101 and 101L or 109	3	
	PLPT 369L	Intro Plant Path Lab	BIOS 101 and 101L or 109	1	
Plant Identification - 6 credits				6	
	NRES 201	Dendrology		3	
	HORT 213	Landscape Plants II	NRES 201	3	
	HORT 214	Herbaceous Landscape Plants		3	
Career Experience - 1 credit				1	
	NRES 497	Career Experiences in Natural Resource Sciences		1-6	
Achievement-Centered Education Courses - 3-12 credits				12	
		ACE outcomes 5,7,8,9		3	
Capstone Course - 3 credits				3	
	NRES 457	Greenspace and Urban Forestry Management		3	10
		Maximum Total Core Credits		95	
		Minimum Total Core Credits		85	
Urban Forestry Management Option				18	
Arboriculture Option				18	
		Maximum Total Degree Credits		113	
		Minimum Total Degree Credits		103	
Free Electives - credits				6	
Free Electives - credits				17	

Option Course Requirement Details:

	Course #	Title	Prerequisites	Credits	ACE
Urban Forestry Management Option				**18**	
Urban Studies - 9 credits				6	
	GEOG 140	Introduction to Human Geography		3	9
	NRES 289	People and the Land: Human Environmental Interactions on the Great Plains		3	5, 6
	CRPL 300	The Community and the Future		3	9
	CRPL 400	Introduction to Planning		3	8
	CRPL 460	Planning and Design in the Built Environment		3	
	CRPL 489	Urbanization of Rural Landscapes		3	
Communications - 6 credits				6	
	COMM 371	Communication in Negotiation and Conflict Resolution		3	
	NRES 301	Environmental Communication Skills		3	2
	MNGT 300	Management Essentials for Contemporary Organizations		3	
	CRPL 420	Grant Writing and Fund-raising		3	
	NRES 434	Environmental Education & Interpretation		3	
Policy - 3 credits				3	
	AECN 357	Natural Resource and Environmental Law		3	
	CRPL 470	Environmental Planning and Policy		3	
	CRPL 471	Environmental Impact Assessment		3	
	CRPL 472	Hazard Mitigation Planning		3	

Arboriculture Option			18
Water Science - 3 credits			3
WATS 452	Irrigation Systems Management	SOIL 153 and MSYM 109 or equivalent	3
NRES 453	Hydrology	MATH 106	3
NRES 468	Wetlands	BIOS 220, CHEM 109 & 110	4
Soil Science - 3 credits			3
MSYM 354	Soil Conservation and Watershed Management	SOIL 153 and MSYM 109	3
HORT 453	Urban Soil Properties and Management	SOIL 153	3
Horticulture - 6 credits			7
HORT 100	Plants, Landscapes, & the Environment		3
HORT 278	Botany	BIOS 101/101L or LIFE 120/120L	3
HORT 478	Plant Anatomy	8hr of Biological Science	4
Plant Science - 3 credits			3
HORT 221	Plant Propagation	BIOS 109 or permission	3
HORT 228	Introduction to Landscape Management	AGRO 131 or BIOS 109	3
Business - 3 credits			3
ACCT 201	Introductory Accounting I		3
ACCT 202	Introductory Accounting II	ACCT 201	3
BLAW 371	Legal Environment		3
MNGT 300	Management Essentials for Contemporary Organizations		3

Appendix B: Student Learning Outcomes & Assessment Course

Learning Outcome	Specific Course Addressing Outcome
1. Demonstrate an understanding of tree genera and species in regard to their natural habitats, range, and culturally uses	Dendrology / Introduction to Forestry
2. Apply the principles of woody plant identification to correctly identify trees, shrubs, and vines in urban and natural landscapes	Dendrology
3. Demonstrate an understanding of the concepts and science involved in the study and practice of arboriculture, urban natural resources, and urban forestry necessary for employment	Arboriculture
4. Communicate abstract and technical concepts regarding trees, arboriculture, and urban forestry to laypersons in a clear and concise manner	Green Space Management and Urban Forestry
5. Analyze urban forest management plans using scientifically derived information.	Green Space Management and Urban Forestry
6. Prepare detailed tree management plans through prioritization of site and species selection criteria and to meet diverse community objectives	Green Space Management and Urban Forestry
7. Evaluate the quality and reliability of available information regarding urban environments	Green Space Management and Urban Forestry

Admissions and Selection Criterion: Requirements for admission into the degree program and College of Agricultural Sciences and Natural Resources are consistent with general University admission requirements (one unit equals one high school year): 4 units of English, 4 units of mathematics, 3 units of natural sciences, 3 units of social studies, and 2 units of foreign language. Students must also meet performance requirements [ACT composite of 20 or higher OR combined SAT score of 950 or higher OR rank in the top one-half of graduating class; transfer students must have a 2.0 (on a 4.0 scale) cumulative grade point average and 2.0 on the most recent term of attendance].

Appendix C: Letters of Support

- UNL College of Architecture
- Arbor Day Foundation
- The Davey Tree Expert Company
- The International Society of Arboriculture
- The Nebraska Forest Service

University of Nebraska Lincoln

COLLEGE OF ARCHITECTURE

August 2, 2019

MEMO TO: Office of Academic Affairs
UNL Academic Planning Committee

FROM: Katherine S. Ankerson, Dean

RE: Regional and Community Forestry Degree

As Dean of the College of Architecture, I am pleased to endorse the proposal for a new bachelor of science in Regional and Community Forestry. The degree would be a good additional program at UNL. Aside from its relevance in addressing environmental issues, this degree connects with our Community and Regional Planning program with courses at the undergraduate level. Additionally, it is a complimentary program to our Bachelor of Landscape Architecture program and we can foresee potential collaborative opportunities. We also see that students graduating with this degree could be very interested in pursuing the Master of Community and Regional Planning.

Katherine S. Ankerson

Katherine S. Ankerson, AIA, FIDEC, IIDA, NCARB
Dean, College of Architecture
University of Nebraska-Lincoln

http://architecture.unl.edu
kankerson1@unl.edu
402.472.9216

Arbor Day Foundation®
211 N. 12th St. • Lincoln, NE 68508 • arborday.org

We inspire people to plant, nurture, and celebrate trees.

July 11, 2017

Eric North
720 Hardin Hall
University of Nebraska-Lincoln
P.O. Box 830974
Lincoln, NE 68583

Dear Dr. North,

I am writing in support of your efforts to establish a new degree program in Regional & Community Forestry at the University of Nebraska-Lincoln (UNL). As we understand it, the program will be a partnership between the School of Natural Resources and the Department of Agronomy and Horticulture, and will offer two options: Urban Forestry Management and Arboriculture. We heartily endorse this degree program for the University of Nebraska!

At the Arbor Day Foundation, we have long promoted best practices for the planting and care of trees in cities and towns. Our Tree City USA program is a benchmark for community forestry in the U.S., with almost 3,500 communities enrolled last year. Like your proposed degree program, we count the Nebraska Forest Service and the USDA-Forest Service-Urban & Community Forestry Program as key partners. And with them, we regard professional management of urban trees and forests essential to building a sustainable urban forest. Your new program to train the next generation of arborists and urban foresters is exactly what we need, both in Nebraska and across the U.S.

We see several ways that this degree program could align with Arbor Day Foundation initiatives. First, we have internship opportunities in our Lincoln office, as well as project opportunities at our Lied Lodge & Conference Center in Nebraska City, NE. More broadly, we can connect your graduates with the broad network of communities and urban forestry practitioners around the country, through our Tree City USA and Alliance for Community Trees networks. Finally, a renewed partnership with the University of Nebraska can strengthen our ability to compete for grants and outside funding opportunities on urban forestry initiatives.

Please let me know any other ways that we can support your new degree program, which will support our efforts at the Arbor Day Foundation to create more livable communities across the U.S.

Sincerely,

Dan Lambe, President

THE DAVEY TREE EXPERT COMPANY
CORPORATE OFFICE, 1500 N. MANTUA ST., P.O. BOX 5193, KENT, OHIO 44240-5193
TEL. 330-673-9511

July 31, 2017

Dr. Eric North
720 Hardin Hall
University of Nebraska-Lincoln
P.O. Box 830974
Lincoln, NE 68583

Dear Dr. North,

I am writing this letter in support of the establishment of a new degree program in Regional and Community Forestry at the University of Nebraska-Lincoln. Founded in 1880, the Davey Tree Expert Company employs over 8,000 personnel and operates in nearly all states and Canadian provinces. We serve clients in the residential, commercial, utility, and governmental market spaces, and pride ourselves on technical integrity and exceptional service.

The Davey Institute provides companywide leadership to assure our staff takes a science-based approach to arboriculture and that they are highly skilled and technically competent. To accomplish this significant undertaking, we rely on experts in academia to complement our research, extension and training activity, and to provide the next generation of arborists, managers, and business leaders in our organization and industry at large.

Recent census data indicates approximately 80% of people in the United States live in urban areas. The Davey Company has a long history of partnership with entities such as the USDA Forest Service to develop tools like i-Tree which help urban foresters quantify the ecosystem services of their canopies. We have a keen understanding that trees in urban areas help reduce stress levels in people, increase property values, reduce pollution, improve water quality, and provide numerous other benefits that make our cities more livable and vibrant. Based on our discussion, I am confident your new program will develop capable and well-rounded students to help serve the millions of people who benefit from trees.

Personally, I have always thought you have a tremendous skill at explaining technical subjects in appealing and easily understandable language. Your students will be the beneficiaries! Please let me know if there is anything else you need. I would be happy to discuss this with you or others as needed.

Regards,

Jim Zwack

General Manager
The Davey Institute

International Society of Arboriculture
2101 West Park Court • Champaign, IL • 61821-3129 • USA
p. 217-355-9411 • *t.* 888-472-8733 • *f.* 217-239-5721 • www.isa-arbor.com

September 15, 2017

Eric North, Ph.D.
Assistant Professor of Practices
Regional and Community Forestry
School of Natural Resources, University of Nebraska-Lincoln
720 Hardin Hall
3310 Holdrege St.
Lincoln, NE 68583-0974

Dear Dr. North,

As the executive director of the International Society of Arboriculture, I am writing to express my support for the new degree program being developed at the University of Nebraska-Lincoln. This program, referred to as the Regional and Community Forestry degree – with options in 1) Urban Forestry Management, and 2) Arboriculture represents a potential avenue to replenish the industry with the next generation of educated individuals passionate about the benefits of trees and their care.

The mission statement of ISA is ***"Through research, technology, and education, the International Society of Arboriculture promotes the professional practice of arboriculture and fosters a greater worldwide awareness of the benefits of trees."*** It is with enthusiasm that we support degree programs such as this, as they inherently align with our own mission. This degree program, and others like it, represent possible partnerships with our organization for internship opportunities for students enrolled in this program. As the program develops, I envision additional opportunities for partnerships will continue to reveal themselves.

Again, I would like to express ISA's support for the Regional and Community Forestry degree program being developed at the University of Nebraska-Lincoln. We look forward to finding ways to partner with the program leaders, as it comes to fruition.

Sincerely,

Caitlyn Pollihan, CAE
Executive Director
International Society of Arboriculture

University of Nebraska Lincoln

INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES
NEBRASKA FOREST SERVICE

July 14, 2017

Dr. Eric North

Hardin Hall, UNL East Campus

Dear Dr. North,

I wish to express my and the Nebraska Forest Service's strong support for the proposed Regional and Community Forestry undergraduate major at the University of Nebraska-Lincoln. This new major will address a significant gap that exists nationally to educate professional natural resource managers who are fully trained in the complexities of managing trees and forests within cities and towns.

While urbanization continues to inexorably expand nationally, (with more than 80% of the US (and NE) population now living in urban areas), and while invasive pests and climate change increasingly threaten the health of community trees and forests, there are surprising few comprehensive programs designed to prepare professionals to manage urban tree and forest resources. Healthy regional and community forests require intense management by professionals who are well versed in a diverse array of knowledge and skills, including technical arboriculture skills, community and regional planning, foundational forestry-related knowledge, extensive knowledge of municipal governance, among many others. Yet there are only a few 4-year undergraduate programs in regional and community forestry in the US, with none west of the Mississippi River. Structuring this program to have two tracks: 1) Arboriculture and 2) Urban Forestry Management, will provide graduates with comprehensive, rigorous yet practical and highly marketable credentials that will allow them to quickly find quality employment, and will prepare them for rapid advancement.

The wisdom of the decision to establish this new major has been repeatedly confirmed by several contributions by the US Forest Service, amounting to more than $430,000 to date, as well as strong expressions of support by several national arboriculture companies. To support this effort, the Nebraska Forest Service will:

- fund at least two paid community forestry internships annually, along with a number of project-related student summer jobs,
- facilitate connections between you and the US Forest Service to ensure continued financial support,
- provide the intellectual resources of our 15 FTE Community Forestry and Sustainable Landscapes Program, widely recognized as one of the leading such programs in state forestry agencies in the US,

102 Forestry Hall / P.O. Box 830815 / Lincoln, NE 68583-0815 / (402) 472-2944 / Fax (402) 472-2964 / http://www.nfs.unl.edu

- provide faculty, staff and students in the major with opportunities to partner with the NFS on major grant proposals and projects, and
- provide access to 3 nearby forested properties for demonstration, research and experiential education.

Establishment of this major is one of most important and sustainable contributions that can be made to ensure that communities will maintain healthy community forests over the long term. Graduates of this program will have a range of employment options, having substantial impacts over many decades as they manage and sustain their community's forests in NE and nationwide. Given the scarcity of similar programs, the Nebraska Forest Service's substantial resources and expertise in community forestry, and the Lincoln locations of the Arbor Day Foundation and the National Agroforestry Center national offices (both potentially powerful partners), this major will be well positioned to become a national leader and center for regional and community forestry education, outreach and research. Given this importance, this program has had and will continue to have a strong commitment on the part of the Nebraska Forest Service to ensure it is a resounding success.

Sincerely,

Dr. Scott Josiah
State Forester and Director
Nebraska Forest Service

TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
UNL BS in Regional and Community Forestry

	(FY2021) Year 1		(FY2022) Year 2		(FY2023) Year 3		(FY2024) Year 4		(FY2025) Year 5		Total
Personnel	**FTE**	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	**Cost**
Faculty											
Professional											
Graduate Assistants											
Support Staff											
Benefits											
Subtotal											$0
Operating											
Operating and Supplies [1]		$5,000		$5,000		$5,000		$5,000		$5,000	$25,000
Equipment											
Library/Information Resources											
Subtotal		$5,000		$5,000		$5,000		$5,000		$5,000	$25,000
Total Expenses		$5,000		$5,000		$5,000		$5,000		$5,000	**$25,000**

[1] Support for recruiting materials, web page development, recruiter travel, and development of advising materials. We anticipate these costs to be consistent through the first five years of the program.

TABLE 2: PROJECTED REVENUES - NEW INSTRUCTIONAL PROGRAM
UNL BS in Regional and Community Forestry

	(FY2021) Year 1	(FY2022) Year 2	(FY2023) Year 3	(FY2024) Year 4	(FY2025) Year 5	Total
Reallocation of Existing Funds						
Required New Public Funds						
1. State Funds						
2. Local Tax Funds (community colleges)						
Tuition and Fees [1]	$37,800	$37,800	$75,600	$75,600	$75,600	$302,400
Other Funding						
Total Revenue	$37,800	$37,800	$75,600	$75,600	$75,600	$302,400

[1] Tuition calculations based on 2019-20 tuition estimates ($252/credit hour for resident students) assuming 30 credit hours per student per academic year. Projected student enrollment: 2020-21 (5-students), 2021-22 (5-students), 2022-23 (10-students), 2023-24 (10-students), and 2024-25 (10-students). Projected revenue is using resident rates only even though the program plans to attract non-resident students as well.