

IT Project Proposal Report - Detail
Agency: 047 - EDUCATIONAL TELECOMMUNICATIONS COMM
Budget Cycle: 2021-2023 Biennium **Version: AF - AGENCY FINAL REQUEST**

IT Project : Tower Lighting systems

General Section

Contact Name : Ling Ling Sun	E-mail : lsun@netad.unl.edu	Agency Priority : 2
Address : 1800 North 33rd St	Telephone : 402-472-3611	NITC Priority :
City : Lincoln		NITC Score :
State : Nebraska	Zip : 68503	

Expenditures

IT Project Costs	Total	Prior Exp	FY20 Appr/Reappr	FY22 Request	FY23 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	0	0	0	0	0	0
Project Management	0	0	0	0	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	0	0	0	0	0	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

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Expenditures

IT Project Costs	Total	Prior Exp	FY20 Appr/Reappr	FY22 Request	FY23 Request	Future Add
Other Project Costs						
Personnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Project Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	300,000	0	0	180,000	120,000	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	300,000	0	0	180,000	120,000	0
TOTAL PROJECT COST	300,000	0	0	180,000	120,000	0

Funding

Fund Type	Total	Prior Exp	FY20 Appr/Reappr	FY22 Request	FY23 Request	Future Add
General Fund	300,000	0	0	180,000	120,000	0
Cash Fund	0	0	0	0	0	0
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	300,000	0	0	180,000	120,000	0
VARIANCE	0	0	0	0	0	0

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EXECUTIVE SUMMARY:

This request is for the replacement of the Tower Lighting systems at KRNE (Merriman) and K33AC (Pawnee City). Federal Aviation Administration guidelines require structures that exceed 200 feet above ground level or are sufficiently close to an airport runway must be lit to set specifications. The KRNE tower is 1022 feet tall and the K33AC tower is 499 feet tall. All towers require that they be lit at night and during inclement weather. If the project is not completed, NET will be required to paint the towers to remain in compliance with FCC and FAA rules with regard to tower marking. Total estimated costs for the project is \$300,000; \$180,000 for KRNE and \$120,000 for K33AC. KRNE would be completed in FY 2022 while K33AC would be completed in FY 2023.

The existing incandescent lighting system at KRNE is at least 50 years old and K33AC is nearly 25 years old. NET intends to purchase new LED tower lighting systems which meet the requirements set forth by the Federal Communications Commission and Federal Airline Authority. The LED systems are energy efficient, more reliable, has better visibility, and does not require NET to paint the towers as part of required maintenance. These are high priority capital construction projects related to complying with federal regulations that need to be completed in the coming Biennium, FY 2022 through FY 2023. This is part of continuing effort to replace all systems with LED lighting on all NET towers.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

The following is overall goal of the project. Replacement of the Tower Lighting systems in Merriman and Pawnee City will fulfill NET's obligation to the Federal Aviation Administration regarding structures that exceed 200 feet above ground level to be lit to set specifications. New LED tower lighting systems are energy efficient and more reliable which will save operation and maintenance costs. NET intends to purchase and replace existing lighting systems with new LED tower lighting systems that meet the requirements set forth by the Federal Communications Commission and Federal Aviation Administration.

The measurement and assessment methods will be remote monitoring and metrics of the systems via NET NMCS (Network Management Control System) 24X7 monitoring system during all types of weather and times of day. The reduction in the overall annual maintenance budget for this site will also be an indicator of success as well as regular electricity costs.

This project adopts NET's plan to be a more efficient organization through technology. With this project NET will recognize efficiencies in routine maintenance and utilities.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

The aging lighting systems have become very unreliable and costly to maintain as well as continued painting of towers. The LED system NET intends to purchase and install is energy efficient and will greatly increase reliability and reduce maintenance costs. NET has implemented comparable LED systems in place at other sites and the LED lighting

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systems have proven to be very reliable.

NET reviewed High Voltage Strobe systems and found similar complaints and issues we are currently experiencing at KRNE & other sites. NET also reviewed standard incandescent lighting systems, but found the maintenance costs extremely high.

If NET did nothing the FAA would require a written explanation and plan to repair or replace the system that is creating the numerous NOTAMs (Notice to Airmen). If the plan is not accepted the FAA will require NET to remove or lower the tower structure to less than 200 feet above the ground. This would significantly impact the broadcast signal that serves the region.

The project is in direct response to the Code of Federal Regulations 14 Part 77 and AC 70/7460-1K Chapter 2-23 "Light Failure Notification".

TECHNICAL IMPACT (20 PTS):

The project will replace current strobe technology that has not fulfilled expectations concerning maintenance cost and reliability. The more current LED (Light Emitting Diode) technology has shown to be more reliable, energy efficient and cost effective. This is a hardware purchase.

The LED tower lighting systems are the industry standard for replacement of Incandescent and High Voltage Strobe systems. The LED technology has made great strides in initial cost, reliability, and maintenance savings.

This system is the industry standard for replacement for Strobe technology and other systems.

This system is completely compatible with existing power and physical construction of NET's tower.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

NET is planning to purchase, install and operate LED Tower Lighting systems for KRNE and K33AC towers. NET is the project sponsor and the NET Television viewers, NET Radio listeners, and NOAA Weather Radio users in the KRNE & K33AC coverage areas of the State of Nebraska are the stakeholders.

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NET will enter into contract with a qualified insured tower maintenance contractor to install the new lighting system.

NET will act as the project manager for this project.

The major deliverable for this project is the removal of the old system and replacement of the new system. The time frame for this work is (14) days from receipt of system and getting the tower crew on site. This is a high priority capital construction project related to complying with federal regulations that needs to start as soon as possible. NET plans to replace KRNE lighting system in FY 2022 and K33AC lighting system at FY2023.

One day of on-site training is required and included. Operations will be seamless to present day workflow.

No additional support is required, other than routine operational maintenance.

RISK ASSESSMENT (10 PTS):

The lighting system needs to be replaced soon or the FAA will require a formal plan with expected completion dates. If the tower lights are not replaced the FAA may require NET remove or lower the tower structure until the total tower height is less than 200 feet.

This purchase will be made under the State Purchasing Guidelines to minimize risk. Any assistance with contractual parties will have bonding and insurance requirements to assure protection to the State of Nebraska.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

Total Cost is estimated at \$300,000. \$180,000 in FY2022 and \$120,000 in FY2023. See details in Financial Tab above. Also under Capital Construction Projects of this Budget System.