

**IT Project Proposal Report - Detail**  
**Agency: 047 - EDUCATIONAL TELECOMMUNICATIONS COMM**  
**Budget Cycle: 2017-2019 Biennium**                      **Version: AF - AGENCY FINAL REQUEST**

**IT Project : KHNE Tower Lighting System**

**General Section**

<b>Contact Name :</b> Ling Ling Sun	<b>E-mail :</b> lsun@NETnebraska.org	<b>Agency Priority :</b> 3
<b>Address :</b> 1800 North 33rd St	<b>Telephone :</b> 402-472-9333	<b>NITC Priority :</b>
<b>City :</b> Lincoln		<b>NITC Score :</b>
<b>State :</b> Nebraska	<b>Zip :</b> 68503	

**Expenditures**

IT Project Costs	Total	Prior Exp	FY16 Appr/Reappr	FY18 Request	FY19 Request	Future Add
<b>Contractual Services</b>						
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
<b>Subtotal Contractual Services</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Telecommunications</b>						
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
<b>Subtotal Telecommunications</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Training</b>						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
<b>Subtotal Training</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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**Expenditures**

<b>IT Project Costs</b>	<b>Total</b>	<b>Prior Exp</b>	<b>FY16 Appr/Reappr</b>	<b>FY18 Request</b>	<b>FY19 Request</b>	<b>Future Add</b>
<b>Other Operating Costs</b>						
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
<b>Subtotal Other Operating Costs</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Capital Expenditures</b>						
Hardware	119,000	0	0	0	119,000	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	6,000	0	0	0	6,000	0
<b>Subtotal Capital Expenditures</b>	<b>125,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>125,000</b>	<b>0</b>
<b>TOTAL PROJECT COST</b>	<b>125,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>125,000</b>	<b>0</b>

**Funding**

<b>Fund Type</b>	<b>Total</b>	<b>Prior Exp</b>	<b>FY16 Appr/Reappr</b>	<b>FY18 Request</b>	<b>FY19 Request</b>	<b>Future Add</b>
General Fund	125,000	0	0	0	125,000	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
<b>TOTAL FUNDING</b>	<b>125,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>125,000</b>	<b>0</b>
<b>VARIANCE</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

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**IT Project: KHNE Tower Lighting System**

**EXECUTIVE SUMMARY:**

This request is for the replacement of the Tower Lighting system at KHNE (1105 W 6 Road Giltner NE 68841). 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 KHNE tower is 1240 feet, which requires it to be lit at night and during inclement weather. The existing incandescent lighting system is 48 years old. NET intends to purchase a new LED tower lighting system which meets the requirements set forth by the Federal Communications Commission and Federal Airline Authority. The LED system is energy efficient, is more reliable, has better visibility, and does not require NET to paint tower as part of required maintenance.

This is a high priority capital construction project related to complying with federal regulations that needs to start as soon as possible. Delaying the work heightens the risk that tower crews will be difficult to schedule and may be more expensive due to anticipated demand related to spectrum repacking adjustments on television towers and a nationwide shortage of tower crews.

**GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):**

Replacement of the KHNE Tower Lighting system 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. The KHNE tower is 1240 feet, which requires it to be lit at night and during inclement weather. New LED tower lighting system is energy efficient, is more reliable which will save operation and maintenance cost. NET intends to purchase and replace existing lighting system with a new LED tower lighting system meets the requirements set forth by the Federal Communications Commission and Federal Airline Authority.

The measurement and assessment methods will be visual inspections and remote monitoring of the system during all types of weather and time 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 current Lighting system at KHNE is original to the tower of 1968 that has become very unreliable and costly to maintain. The LED system NET intends to purchase and install is energy efficient and will greatly increase reliability and reduce maintenance cost. NET has had implemented a comparable LED system in place at most other sites and they have proven very reliable.

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NET reviewed High Voltage Strobe systems and found similar complaints and issues we are currently experiencing at KHNE. 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 is the industry standard for replacement of 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.

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

**PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):**

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NET is planning to purchase, install and operate a LED Tower Lighting system for KHNE. NET is the project sponsor and the NET Television viewers, NET Radio listeners and National Weather Service users in the KHNE coverage area of the State of Nebraska are the stakeholders.

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 eight (8) 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 (early fiscal year 2019)

No additional training or staff development is required. 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.

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**FINANCIAL ANALYSIS AND BUDGET (20 PTS):**

Total Cost is estimated at \$125,000 in FY2019. See details in Financial Tab above. Also under Capital Construction Projects of this Budget System.