



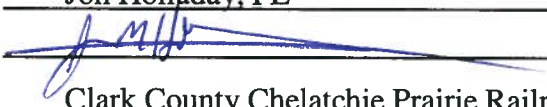
1300 S. Evergreen Park Drive SW  
PO Box 47250  
Olympia, WA 98504-7250  
(360)664-1257 or (360)664-1100  
Fax: (360)586-1150  
Web: [www.utc.wa.gov](http://www.utc.wa.gov)  
E-mail: [records@utc.wa.gov](mailto:records@utc.wa.gov)

**GRADE CROSSING PROTECTIVE FUND  
2011 – 2013 GRANT APPLICATION  
OPEN CALL FOR PROJECTS**

The Washington Utilities and Transportation Commission (Commission), through its Grade Crossing Protective Fund (GCPF), provides grants for projects that eliminate or mitigate public safety hazards at railroad crossings and along railroad rights-of-way in Washington State. Any public, private or non-profit entity may submit an application to the Commission for a GCPF grant.

**To apply for a grant to eliminate or mitigate a public safety hazard at a railroad crossing or along a railroad right-of-way, complete the following information and submit it and any attachments to the Commission.**

**Applicant Information**

Applicant Name: Jon Holladay, PE  
Signature:   
Organization: Clark County Chelatchie Prairie Railroad  
Address: 1300 Franklin Street Suite 650, Vancouver, WA 98660  
Phone: 360-600-5720  
Email: jon.holladay@clark.wa.gov  
Fax: 360-397-6027

**Project Information**

Attach additional sheets as necessary that provide the following:

1. A detailed summary of the hazard being addressed. Include any information about accidents or incidents at the site and photographs, drawings or other materials that support the application.

Clark County wishes to enhance the visibility, reliability, and energy efficiency of grade crossing flashing warning lights on the County's 33-mile shortline railroad by replacing traditional incandescent lamp bulbs with LED (light-emitting diode) technology. Incandescent bulbs and glass lenses are being phased out of the railroad industry for use in grade crossings. They have several inherent flaws that make them less desirable than LED technology, including:

- a. Much shorter life spans than LED technology
  - b. Single point of failure (i.e. the lamp blacks out) versus the redundancy of LED units that allow portions of the lamp unit to remain lit even when damaged
  - c. Narrower bands of visibility, especially at high skew angles
  - d. Energy efficiency roughly 3 times less than LED's
  - e. Less resistance to vandalism
  - f. Instances of "phantom signal", or a false appearance of illumination in certain sun conditions
2. A detailed summary of the proposed project and how it will eliminate or mitigate the hazard. Include any drawings or construction plans for the proposed project.

LED units will be installed at as many of the 18 signalized grade crossings as possible based on the amount awarded. The County estimates a maximum award of \$20,000 will replace 121 of 196 lamps still using incandescent bulbs. LED lamps offer the following advantages over traditional incandescent:

- a. Solid-state electronics eliminate the fragile glass and filament of a traditional bulb
- b. Alignment and focus issues with traditional bulbs are largely eliminated due to LED's having a more generous angular broadcast range. Traditional bulbs must be individually focused and can move out-of-focus over time. LED's typically do not need to be focused.
- c. Interchangeability – Since traditional bulbs are restrictive in their viewability, they are manufactured individually for several angular swaths. A particular bulb/lens is chosen based on the direction and distance desired for viewing which can vary for each lamp-head at a crossing. LED lamp systems typically have much more generous viewing angles and are more interchangeable. This decreases the variety of parts kept on hand and the possibility that the right part is not in inventory.
- d. Life-cycle maintenance savings – LED's typically last at least 10 times longer than incandescent lamps (Source: Progressive Railroading magazine, Feb 2008), improving reliability for motorists and reducing the

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likelihood they will see a dark lamp. Several manufacturers state even longer life spans for their products.

- e. Less prone to failure - Only the individual LED's that are damaged in the 12" assembly go dark while the others continue functioning. Traditional bulbs have a single failure point that causes a total outage of the lamp.
  - f. Reduction of "phantom signal" – A phenomenon that occurs with traditional bulbs/lenses where sunlight can enter the lamp and be reflected back out, giving the impression that the signal is dimly lit. This is most common at dawn and sunset.
  - g. Energy efficiency – LED's are approximately 3 times more efficient at producing electricity than incandescent bulbs.
3. A list of all other companies, organizations, state agencies or local governments that may be involved in implementing this proposal, and the contact name, address and phone number for each (if known).

No involvement by other entities is required to proceed. Clark County will notify the two rail operators (Columbia Basin RR and Chelatchie Prairie excursion train) of the County's intent to upgrade signal lamps.

- 4. A cost estimate, including:
  - a. An itemized list of the total costs of the project.

Since the project is scalable to any grant award amount, the County will purchase and install as many LED units as possible per the amount awarded. The price per unit shown below is based on inquiries made by County staff to vendors.

Table: Cost Estimate based on a maximum \$20,000 award

Item	Unit Cost	Quantity	Total Cost
12" LED Lamp Assemblies	\$149 each	121	\$18,029.00
Shipping	\$400 total	1	\$400.00
Subtotal			\$18,429.00
State Sales Tax @ 7.7%			<u>\$1,419.03</u>
<b>Total Project Cost</b>			<b>\$19,848.03</b>

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- b. Names of parties contributing to the project, including the applicant, and the amount each is contributing.

Clark County will provide all labor and on-track safety measures to install the LED units.

5. The name of the party responsible for long-term maintenance, such as repair of fencing.

Clark County is responsible for the maintenance and inspection of railroad grade crossing signals on its 33-mile shortline.

6. An estimated timeline of the project.

Clark County staff estimate the time to install the LED units will be 6 months or less.

7. A description of how the project's success would be measured.

The project will be considered successful if:

- Occurrences of lamp outages due to normal wear and tear (i.e. causes other than vandalism or collisions) decrease after the installation of LED units.
- If the LED's live up to the manufacturer's claims and warranties in terms of lifespan, energy efficiency, etc.
- Visibility at grade crossings is significantly enhanced, especially where viewing at high angles is required or during inclement weather. It has been the experience at Clark County with LED units already in service that this is accomplished.

8. Any other information the applicant believes would be useful to the Commission in considering the project.

Clark County technicians have installed LED's at about one-third of the crossings starting 5 years ago. In addition, it is the current construction standard of the railroad that LED technology be installed with all new crossing signal devices. It has been the experience of the County's signal technicians that the LED technology has lived up to its claims of reliability, lifespan, superior visibility, and durability.

**Railroad Commitment**

If the applicant is not the railroad owning the crossing or the tracks, the applicant must submit the attached Railroad Commitment form completed by the railroad owning the crossing or tracks.

Not applicable.

**Submitting the Application**

After completing the application, please send the original to:  
Washington Utilities and Transportation Commission  
Attention: Grade Crossing Protective Fund  
1300 S. Evergreen Park Drive SW  
PO Box 47250  
Olympia, WA 98504-7250

A signed application may be filed electronically at [records@utc.wa.gov](mailto:records@utc.wa.gov). When filing electronically, please specify “Grade Crossing Protective Fund” in the subject line.

**Assistance**

For questions or assistance, please contact:

- Kathy Hunter at (360)664-1257 or by email at [khunter@utc.wa.gov](mailto:khunter@utc.wa.gov)
- David Pratt at (360)664-1100 or by email at [dpratt@utc.wa.gov](mailto:dpratt@utc.wa.gov)