TR-040293 (AF)

UTILITIES & TRANSPORTATION COMMISSION

GRADE CROSSING PROTECTION FUND

APPLICATION FOR FUNDING

Applicant name:	David Lervik, P.E., Project Manager
Organization:	CITY OF MARYSVILLE
Address:	80 Columbia Avenue
	Marysville, WA 98270
Office Phone:	360.651.5161
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Fax Number:	360.651.5099

Type of Application:

- ☐ Private crossing safety improvements
- ☐ Trespass prevention
- ☑ Miscellaneous

Project Information – Please attach additional information if needed.

1) Hazard being addressed:

Within the City of Marysville there are five traffic signals that are interconnected with the BNSF crossing signals. In the event of a power outage, the BNSF signals automatically transfer to a battery back-up unit to continue operations. The City's signals, however, will become dark resulting in hazardous conditions.

The hazard centers around the preemption phase that provides a 20-second green phase allowing the lanes across the tracks to empty before the crossing arms are lowered. During power outages the City's signal, which is functioning as an all-way stop, does not have the ability to provide the preemption phase.

2) Project description:

The City of Marysville has identified five intersections susceptible to problems associated with power outages. The project will improve the overall safety of the intersections identified, with the principal benefit being achieved during power outages when the City's signals shut down while the BNSF signals remain operational.

The proposal involves upgrading the City's signals to ensure continuous operation and improve overall safety of the grade crossings and intersections. This is accomplished by:

- *Installation of battery back-up units to provide uninterrupted interconnected operation of the traffic signals during power failures.*
- *Upgrading of all signal heads to a uniform 12" lens for improved visibility.*
- *Upgrading all signal heads from incandescent to LED. This not only improves visibility, but also provides longer battery life and lower operating cost due to the lower, more uniform power consumption provided by identical lights.*

3) Cost estimates:

See attached spreadsheet.

4) Estimated timeline:

The project will commence upon notification of funding.

5) Measurement of success:

The success of the project will be evident whenever power fails and traffic operations continue uninterrupted. Additionally, the improved visibility of the upgraded signal heads (size and light type) will increase safety of the intersections during normal day-to-day operation.

6) Other comments:

- *We feel that the cost-benefit ratio of this project is very high. One significant accident could easily have costs in excess of the project cost.*

- *Roadway classification and estimated daily traffic volumes are:*

4th Street	Principal arterial	21,900
80th Street	Collector	4,400
88th Street	Minor arterial	26,600
116th Street	Minor arterial	12,000
136th Street	Collector	9,400

- *The City is concerned with possible liability issues if the project is not completed as a whole. In the event that not all identified signals are upgraded, and an accident occurs at an "unimproved" location, the City may be placed in an untenable position of defending the lack of improvement at <u>all</u> identified problem locations.*

- *The City has approximately $20,000 in FY2004 to complete this project. The matching funds from the UTC could help complete all five projects.*

- *The installation of the LED lights will extend the life of the battery back-up unit by providing lights with the lowest power usage. In addition, a mix of incandescent and LED lights causes the power draw to vary as the lights switch, which can lead to strain on the electrical system.*

- *Installation of LED lights will result in reduced long-term maintenance cost and reduced power consumption cost.*

- *In addition to improving safety at grade crossings during power outages, the overall traffic system on these roadways will be improved during power outages.*

- *Please see the attached letter from Snohomish County PUD regarding power outages at these locations.*

CITY OF MARYSVILLE
GRADE CROSSING PROTECTION FUND

PROJECT COST ESTIMATE

Location	Units	Qty	Unit Price	Cost
4th Street @ Cedar Avenue				
Upgrade incandescent to LED	Each	12	$ 150	$ 1,800
Battery Back-up Unit	Lump Sum	1	$ 5,500	$ 5,500
Concrete pad, conduit, installation, etc.	Lump Sum	1	$ 1,500	$ 1,500
	4th Street @ Cedar Avenue Total			**$ 8,800**
80th Street @ State Avenue				
Upgrade signal heads - 8" to 12"	Each	8	$ 400	$ 3,200
Upgrade incandescent to LED	Each	8	$ 150	$ 1,200
Battery Back-up Unit	Lump Sum	1	$ 5,500	$ 5,500
Concrete pad, conduit, installation, etc.	Lump Sum	1	$ 1,500	$ 1,500
	80th Street @ State Avenue Total			**$ 11,400**
88th Street @ State Avenue				
Upgrade incandescent to LED	Each	8	$ 150	$ 1,200
Battery Back-up Unit	Lump Sum	1	$ 5,500	$ 5,500
Concrete pad, conduit, installation, etc.	Lump Sum	1	$ 1,500	$ 1,500
	88th Street @ State Avenue Total			**$ 8,200**
116th Street @ Smokey Point Blvd				
Upgrade signal heads - 8" to 12"	Each	12	$ 400	$ 4,800
Upgrade incandescent to LED	Each	12	$ 150	$ 1,800
Battery Back-up Unit	Lump Sum	1	$ 5,500	$ 5,500
Concrete pad, conduit, installation, etc.	Lump Sum	1	$ 1,500	$ 1,500
	116th Street @ Smokey Point Blvd Total			**$ 13,600**
136th Street @ Smokey Point Blvd				
Upgrade incandescent to LED	Each	8	$ 150	$ 1,200
Battery Back-up Unit	Lump Sum	1	$ 5,500	$ 5,500
Concrete pad, conduit, installation, etc.	Lump Sum	1	$ 1,500	$ 1,500
	136th Street @ Smokey Point Blvd Total			**$ 8,200**
			Grand Total	**$ 50,200**

February 12, 2004

Mr. Tom King
City of Marysville
Marysville, WA 98270

Dear Mr. King:

In regards to your question about outages at railroad crossings in the City of Marysville, following are the outages that have occurred in the area in the past year:

Location	Date	Duration
4th & Cedar	Oct. 28, 2003	154 minutes
	Oct. 28, 2003	10 minutes
	Oct. 28, 2003	15 minutes
	Oct. 28, 2003	25 minutes
80th St NE & State	Oct. 28, 2003	154 minutes
	Oct. 28, 2003	10 minutes
	Oct. 28, 2003	15 minutes
	Oct. 28, 2003	25 minutes
88th St NE and State	Dec. 27, 2002	1 minute
116th St NE & State	No recorded outages at this location	
136th St NE & State	Oct. 28, 2003	250 minutes

Please note that all of these outages occurred during wind storms, which typically means they were the result of tree contact with overhead power lines. None were caused by animals, car-pole accidents or equipment failure.

Thank you for your question. If you have any other questions or comments, please contact me at 425-783-4351.

Sincerely,

Derek Backholm, P.E.