

State of Minnesota

Office Memorandum

DEPARTMENT: of Transportation - Operations
Rochester - District 6

DATE: April 15, 1996

TO: Paivi Martikainen
Research Engineer - Kelly inn

FROM: Dave W. Redig
Maintenance Superintendent

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SUBJECT: **Funding for Auto-Flaggers**

Paivi, this memo is a request for funding for the "Auto-Flaggers" automated traffic control trailers. The funding request is for \$23,483.25. This amount would include the cost of the Auto-Flaggers, radio-remote option B and sales tax, (See pricing on back page of "Auto-Flaggers" brochure - attached.)

Project Background

About three years ago, I was introduced to Chuck Fanslow of Safety Technologies, Inc., out of Red Wing, through Jon Jackels. Jon was at that time with the traffic division in St. Paul. He explained that Chuck had an interesting idea and asked if District 6 would be interested in seeing it through. My discussions with Chuck revealed that he was a fledgling inventor/entrepreneur with an idea to take some or most of the risk for a flagperson out of the flagging task. His idea was to remove the flagman from the roadway and get him/her away from traffic, thereby reducing their risk.

Following my discussions with Chuck and a letter from the traffic office (attached) allowing us to use them on the roadway, Chuck built the first proto-type. It was archaic compared to the final version and included simple controls operated out of a suitcase type console and was connected to the sign trailers with cables we had to string down the roadsides. Since that initial version was introduced, Chuck has revamped his product no less than six times as a result from suggestions and comments from our maintenance and bridge forces. The result is the final product which we all feel is ready to be used safely and efficiently on the roadways.

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• Operator Safety

The "AutoFlaggers" are designed to remove the flagperson from the dangers of traffic control on two-lane roadways. It is well known that flagging on the highways is a dangerous occupation with several incidents in recent years where the flagperson has had to jump out of the way of moving traffic to keep from being involved in a potentially fatal accident. The safety of the flagperson is constantly in jeopardy, as well as that of the crew he is protecting. With this system, a single operator is positioned in the center of the work zone. Not only does the operator control the flagging operation, but since he or she has clear visibility of each end of the work zone, the operator can also monitor and advise or warn his/her coworkers of any potentially hazardous situations. The option B controller is equipped with an emergency horn to be used when alerting others on the job site to danger.

Economic Considerations

Besides the obvious safety advantages this system provides, there is a not so obvious economic advantage associated with it. This system is ideal for bridge and other maintenance operations that are stationary. We most always use two flagpersons on projects in good weather and three or four when weather is not conducive to being out in it for extended periods of time. With the "Auto-Flaggers," one person can flag from the safety of a position on the roadside or from the comfort of a pickup or car out of the elements. The crew size can be decreased and individuals used on other projects, or can be used on the task at hand helping to get the project done quicker and return the road or bridge back to the motorists sooner. There have been times on our four-person bridge crews when we have had two people flagging and two people working. If one person calls in sick, the project has to be scrapped.

Using a bridge workers salary, which is \$16.38 per hour, multiplied by four flagpersons on a crew for eight hours the costs without labor additions is \$524.16 per day. If that number is reduced by three to one person using the "Auto-Flaggers, the costs are reduced to \$ 131.04, a savings of \$393.12 per day. By dividing the \$393.12 savings into the \$23,483.25 cost, the "Auto-Flaggers" will pay for themselves in just 59.74 days. I fully expect the costs savings associated with the "Auto-Flaggers" will be realized within the first year.

Motorist Safety

Due to the physical size of a flag person holding a standard paddle, they often cannot be seen by the motorists. If we factor in the effects of weather, natural lighting aberrations, drugs, alcohol, windshield glare or any other normal vehicular distractions the stage is set for worker and/ or motorist injury and, of course, lawsuits. You will note in the attached brochure that this product has several design features to enhance motorist safety, most noticeably its commanding physical presence. It clearly looks as if it belongs on the road surface.

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Since its operating height is about 11 feet, approaching vehicles can see it clearly and should not creep into the opposing traffic lane. Additionally, four-wheel drive pickups and vans do not block trailing motorists' view of the device as happens with a flagperson.

Additional Considerations

We could have come to you for funding three years ago, but Chuck preferred to work on his own and as a result had to foot all associated costs. As stated above, many of the ideas and safety devices included are a result of our workers using the trailer on the roadways. Chuck has painstakingly used the best available materials and the latest technology to build the units to last for many years to come.

The State Patrol had a hand in the development also. The original design used for towing had a hitch on the front and back and one trailer was towed behind the other. The final version is a nested design which when locked together makes the units act as one, this does not violate the double trailer laws.

Please take the time necessary to view the attached brochure. Pay close attention to: Rotary stop/slow sign. This is a patented design which rotates one sign in front of the other when switching messages.

Red stop light above sign - This approved stop light is an additional safety measure intended to get the motorists' attention.

Sign - 36" diamond grade sheeting covered and protected by a sheet of 3/16" Lexan polycarbonate. When transporting, the rectangular informational sign: folds up over the stop/slow sign to further protect it.

Trailer - Built of rectangular tubing and has six outriggers to provide the most in stability and assurance that it will stay where put.

Power - The warning lights and rotary sign is powered by solar energy, the strobe lights on each side of the signs are an added extra safety measure.

Safety design - The sign head and stand are designed to collapse upon impact if struck.

Quality of paint - The trailers are extremely well constructed and have a finish finer than I have ever seen on Mn/DOT equipment. They are sandblasted and primed with a self-etching primer, The final coat is DuPont Centari orange paint with an epoxy hardener. The finish is said to be "bullet proof" and is high gloss.

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I am very proud to have been associated with Mr. Fanslow in the development of the "Auto-Flagger." I feel that these units have a very practical and safe use statewide and would be a good investment for Mn/DOT. Please give this request for funding your utmost consideration.. I would be more than happy to answer any questions you may have and would also volunteer Mr. Fanslow's time should you desire a hands on demonstration.

Thank you.

Attachments

c: Dick Klobuchar
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