

Web Enabled Remote Controlled Gate Arm for Transportation Enhancement

Do you need to control certain intersections of traffic due to special events, weather conditions, or emergency situations? Would you like to improve your ability to save lives and money, when weather conditions make travel on interstate highways extremely dangerous? If the answer to either of these questions is YES, then you should seriously consider the **Web Enabled Remote Controlled Gate Arm for Transportation Enhancement (WERC-GATE) patent no.6,696,977.**

The **WERC-GATE** combines the latest technology with reliable hardware for enhancing traffic safety. Our newest innovation allows transportation and security personnel to **monitor and control the closure and opening of highway intersections from a secured web site.** This enables agencies to control important avenues of egress for sensitive evacuation routes during all types of emergencies.

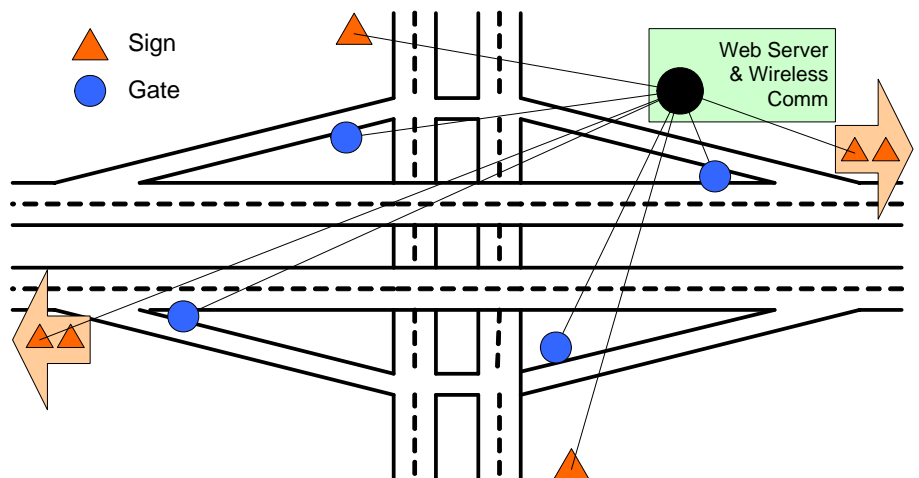


SYSTEM OPERATION

The baseline **FEATURES** of the **WERC-GATE** system include:

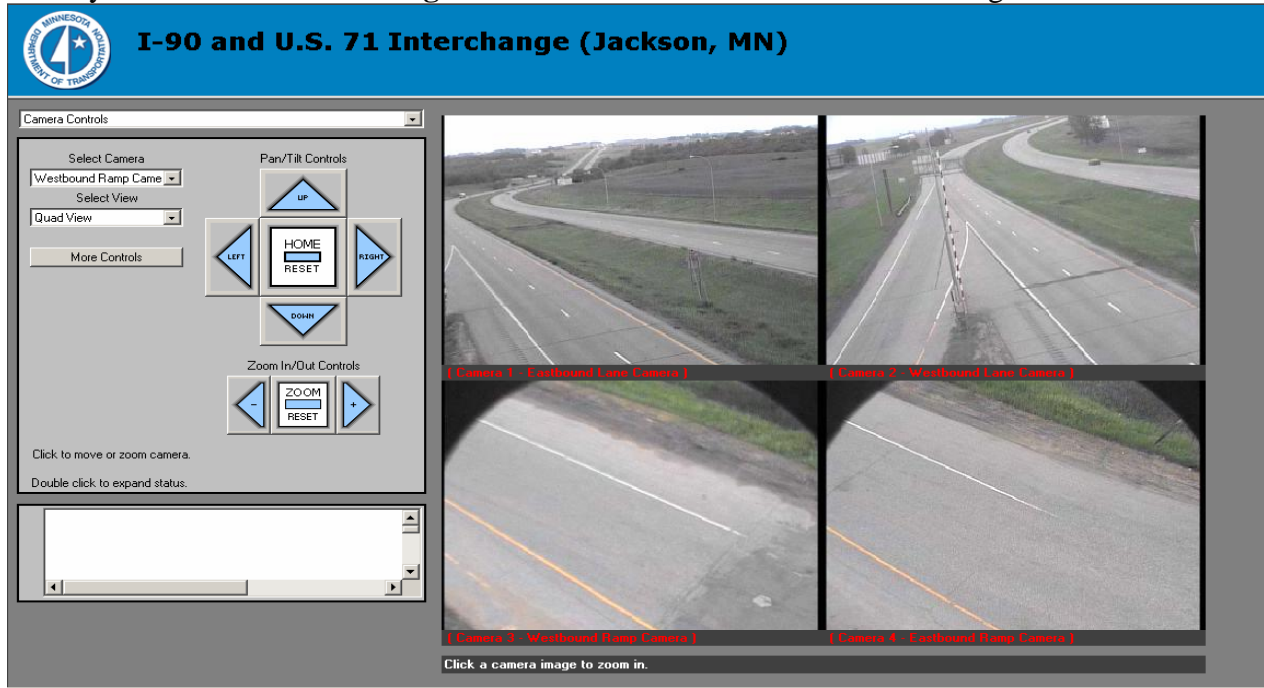
- **Closure and opening of freeway gates.** This includes lane gates (to force drivers off the Interstate) and ramp gates (to prevent drivers from entering the Interstate). The gate has been crash tested for FHWA approval by Wyoming DOT and approved by Minnesota DOT and South Dakota DOT.
- **Advance notification signs.** The baseline system allows the operator to enable/disable up to 8 flashing advanced warning message signs placed well in advance of the interchange.
- **Real-time Video Surveillance.** Allows for visually monitoring the site in real-time. Each gate is monitored by a surveillance camera with digital video feed to the web site. Cameras are available with pan/tilt platforms, which are controlled from the web site.
- **Wireless Technology.** All devices are controlled via wireless modems. There are **FIVE (5)** actual methods of controlling the **WERC-GATE** system: (1) at gate push button, (2) manual (power failure), (3) handheld remote, (4) web site (includes real-time video), & (5) emergency vehicle. The figure below provides a block diagram of the system.

- **WERC-GATE** combines cutting edge technologies, including real-time digital video, open architecture Internet application & development, high-speed wireless communication.
- This provides an excellent solution to the potentially daunting task of freeway access control. Further, **WERC-GATE** has many potential applications beyond traffic control, limited only by the imagination of the user & the world-wide reach of the Internet & wireless infra-structure.



The **WERC-GATE** system has a number of **ADDITIONAL FEATURES**.

- **Violation Detection**, which will alert a dispatcher if a vehicle has driven around the gate. The system will also record a time tagged snapshot of the vehicle to provide visual verification of the violation.
- A **Report generator**, which can be used to verify gate closures, violations, and other events.
- The system can be **custom designed** to fit the needs of the end user. See Figure below.



Camera Control Screen



BENEFITS & EXPERIENCE

- We successfully deployed a prototype system for the Minnesota DOT (MN/DOT) at the Interstate 90 & US-71 intersection near Jackson, MN. This site has four gates, four surveillance cameras (two w/PanTiltZoom), and eight advanced warning signs (variable message signs).
- In addition, we have another system deployed at exit 65 on Interstate 90 in Rapid City, SD. This site is controlled by **Handheld Radio Remotes** employed from the supervisor's vehicle.
- See our latest installation for Wyoming DOT in Cheyenne, WY using handheld & manual.
- To operate gates, control video cameras, and change variable message signs, the dispatcher logs onto the Internet and goes to the web page for the intersection desired. (see Figure above for a screen shot of the Operator Interface – **Camera Control Screen**). All hardware devices are controlled via wireless modems, with the receivers connected to the web server & device controller. The real-time digital video is transmitted over a wideband wireless point to point link.
- The dispatcher can activate the advanced warning signs, use the cameras to view the area, and scan the vicinity with the pan/tilt function, and open or close the freeway access and lane gates. In the event of a gate violation (drive around), the dispatcher can relay the vehicle information to law enforcement agencies and Department of Transportation crews. During an emergency, this information is very valuable in avoiding accidents involving snowplows and stranded vehicles. The **WERC-GATE** is a must when the need for controlling transportation routes occurs.

• **FOR MORE INFORMATION CONTACT:**

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