

MINNESOTA DEPARTMENT OF TRANSPORTATION

# INTELLIGENT WORK ZONE (IWZ) SYSTEM PROVIDER QUALIFICATION AND ACCEPTANCE PROCESS

## INTRODUCTION

The Intelligent Work Zone (IWZ) System Provider Qualification and Acceptance Process has been developed and implemented to insure that quality IWZ System Providers are pre-approved to design, deploy, operate, and maintain IWZ Systems on Mn/DOT highway projects.

There are six major parts to this process:

1. Submittal of an "IWZ System Provider Application" by the company/partnership/individual who wishes to be considered for QPL approval an IWZ System Provider for one or more categories of IWZ Systems.
2. Review of the application and references of the provider for basic system design, component sources, quality control, testing, servicing, and technical support. This evaluation includes a provider written statement agreeing to the conditions of the approval program.
3. Inclusion of the provider on the Qualified Products List with "Provisional Approval" for each qualifying IWZ System Category.
4. Successful bidding and deployment of an IWZ System for use on a Mn/DOT project.
5. Successful review of the IWZ System by Mn/DOT based upon recorded field performance data and/or field reviews.
6. Inclusion of the provider onto the Qualified Product List for that IWZ System Category.

## SCOPE

This Process applies to all IWZ System Providers deploying IWZ systems on Mn/DOT highways. Participation in this program is also required to be considered for Minnesota's cooperative purchase contracts for IWZ Systems. Other political subdivisions are encouraged to review these requirements for adoption by their agency. Technical assistance by Mn/DOT is available on request to other political subdivisions in Minnesota.

## INTELLIGENT WORK ZONE SYSTEMS QUALIFIED PRODUCTS LIST

Three major categories of IWZ System Providers are listed under the Qualified Products List for Intelligent Work Zone Systems and the listing may expand as needs are found. The IWZ System examples listed within each category are considered complete "Stand-Alone IWZ Systems" with all detection, device communications, data computations and real-time messaging (as required) with minimal Mn/DOT services and/or equipment required for deployment. For further explanation of the system categories and the various IWZ Systems that fall within each category, please refer to the IWZ Toolbox which can be found online at: <http://www.dot.state.mn.us/trafficeng/workzone/index.html> The IWZ Toolbox is constantly being updated to include additional IWZ Systems and information as the systems continue to evolve and are refined.

The current list includes (but is not limited to) the following Categories of IWZ Systems:

- **IWZ Conflict Warning Systems**  
These systems provide high priority information to warn motorists of eminent traffic and roadway hazards. These systems may include:
  - **Stopped Traffic Warning**
  - **Trucks Entering/Crossing/Exiting Warning**
  - **Excessive Speed Warning**
  - **Work Space Intrusion Warning**
  - **Over Dimension Warning**
  - **Hazardous Roadway Warning**

**Revision Date: December, 2007**

- **IWZ Traffic Control Systems**

These systems provide important driving information such as advisory speeds, merging instructions, and lane control directions. These systems may include:

- **Dynamic Late Merge**
- **Dynamic Advisory Speed Warning**
- **Changeable Speed Limit**
- **Automated Lane Control**

- **IWZ Travel Information Systems**

These systems provide information which the motorist may use to make route decisions, such as travel times, advanced congestion, alternate route information, incident warnings and work zone staging information. These systems may include:

- **Travel Time**
- **Travel Delay**
- **Stopped Traffic Advisory**
- **Route Management Information**

It is desired that each of these IWZ Systems should be capable of being integrated into a networked IWZ System consisting of multiple types of systems, but it is not required for QPL approval. Individual project special provisions will specify whether multiple systems on a project need to be integrated and/or compatible with other systems.

## **PROVIDER QPL APPLICATION SUBMITTAL**

Consideration of "IWZ Systems QPL Approval" is initiated by the provider by completion of the "***Preliminary Information for Traffic Control and Safety Product Information***" form and submittal of the form with all required documentation as listed below:

### **Availability and Experience**

Demonstrate the ability to provide the equipment necessary to deploy any IWZ System listed within the various IWZ System Categories. Previous performance reports and references should be submitted.

### **Quality Control**

A provider's written quality control program/process that monitors the typical IWZ system shall be submitted for Mn/DOT approval. This written program/process shall detail the frequency and types of tests anticipated to be performed on each IWZ system produced for Mn/DOT projects.

### **Manufacturing/ Testing/ Servicing Capability**

The provider must state, in writing, that it has in operation a site adequate for, and devoted to manufacturer/testing/servicing of the specific IWZ System components. This statement must include assurance that the provider is capable of providing and servicing IWZ System components consistent with the quantities to be delivered for multiple IWZ System projects. This statement must also contain information that it has produced similar IWZ Systems over the past two (2) years with a successful record.

### **Technical Assistance**

The provider shall have at least one technical representative available to instruct Mn/DOT personnel, prime contractor personnel and others as needed in the application of the IWZ System. The technician shall be familiar with the IWZ System and all related components, and shall have successful experience in IWZ Systems. The provider shall also have at least one technical representative available to provide assistance to Mn/DOT personnel engaged in quality assurance operations. The provider shall provide the name(s) and telephone number(s) for these representatives.

### **Letter of Understanding**

The provider shall submit, in writing, a letter containing all of the above criteria, all support documentation, and a statement agreeing to the provisions of this Intelligent Work Zone System Qualification and Acceptance Program.

### **QPL PROVISIONAL APPROVAL**

Upon receipt of the application submittal the work zone standards section of OTSO will review the documentation. The provider will be informed in writing of the results of this review, which will either deny the application or the provider will be placed on the Qualified Products List (QPL) with Provisional Approval Status for each of the qualified categories.

QPL Provisional Approval indicates that the review has concluded that the provider has successfully performed IWZ System deployments similar in design of those listed in the IWZ System Category, has in place an adequate quality control program, adequate production facilities, adequate technical support, has agreed to the IWZ Qualification & Approval Process (as outlined in this document) and has permission to bid and provide its services on Mn/DOT construction projects.

### **FINAL QUALIFICATION**

Mn/DOT will specify the performance specifications for IWZ Systems in the Special Provisions for a construction project, and the IWZ System Provider must succeed in being part of the successful bid for the construction project. The provider must deploy and document a successfully operating IWZ system meeting the Special Provisions of the construction project and performance criteria. The IWZ System provided shall be subject to monetary deductions for any deficiencies in the system. Failure to successfully correct deficiencies may terminate project with the IWZ System Provider.

“Approval of the Provider” is based on the provider’s self-certified data and verified by Mn/DOT on-site operational reviews and spot checks on event log data obtained from provider from on-site and/or remote data loggers. Mn/DOT’s review is for verification of the provider’s quality control testing. Mn/DOT reserves the right to determine the duration and type of the evaluation needed for each IWZ System category. This acceptance program requires the provider to:

- **Provide System Event Log Data for Mn/DOT verification.**  
The event log shall include date/time stamps for system activation and traffic data records pertaining to the IWZ System deployed as verification of performance. These event logs shall be submitted to Mn/DOT along with a certification stating the sample is representative of the IWZ System’s operation. Mn/DOT will review the event log data, and compare the results to operational field reviews of the IWZ system.
- **Provide provider’s quality control test results.**  
The provider shall provide test results verifying the system’s accuracy and dependability. These test results shall be submitted to Mn/DOT along with a certification stating the results are representative of the IWZ System’s operation. Mn/DOT will review the quality control results, and compare the results to operational field reviews of the IWZ system.
- **Provide timely technical response and resolve to system problems.**  
A record of technical assistance calls, action required and time required for problem correction, shall be supplied at the completion of the deployment period.

Upon successful completion of the required evaluation the IWZ System deployment, the provider will be placed on the QPL as an “Approved Provider” under the appropriate category.

**Revision Date: December, 2007**

### **COMPLIANCE TO REQUIREMENTS**

- For non-compliance to the provisions of this program, the provider will be removed from “Provisional Approval Status” for **all** “QPL IWZ System Provider Categories”.
- For failure to provide a successful IWZ System, the provider will be removed from “Provisional Approval Status” for the particular “QPL IWZ System Provider Category”.

### **MN/DOT CONTACT INFORMATION**

All required information for provisional approval and other inquiries on the qualification and acceptance program can be sent to:

Marvin L. Sohlo P.E.  
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Work Zone Standards Engineer  
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