

GATEWAY SYSTEM STATUS REPORT (AS OF MARCH 9, 2010)

Prepared for the Lake Michigan Interstate Gateway Alliance

John Dillenburg, University of Illinois at Chicago, dillenbu@uic.edu

Charles Sikaras, Illinois Department of Transportation, Charles.Sikaras@illinois.gov

Jerry Hron, Illinois Department of Transportation, Jerry.Hron@illinois.gov

Introduction

Awarded ITS Midwest Project of the Year

The Expanded Regional Gateway Traveler Information System was selected as the ITS Midwest 2009 Project of the Year at the ITS Midwest 2009 Annual Meeting held in Indianapolis, Indiana on October 7-8, 2009. Five finalists were nominated for this prestigious award and the Expanded Regional Gateway Traveler Information System was chosen as the top-ranked project by the ITS Midwest Recognition Committee.

Gateway History

The Gateway system has a long history of serving as a central travel information repository for the three state Gary-Chicago-Milwaukee region. A comprehensive list of improvements made to the system since its inception would be rather voluminous. Rather than detail the changes made to the system since its inception, an overview of its current capabilities will be presented together with a list of enhancements in progress, and planned Gateway improvements. If you are already familiar with the capabilities of the Gateway, you may wish to skip ahead to the sections titled Major Enhancements in Progress and Major Planned Gateway Enhancements that begin on Page 13.

The Gateway has been maintained by the University of Illinois at Chicago (UIC) and its subcontractor, Delcan. Funding for maintenance and enhancement for the Gateway system has been provided by the Illinois Department of Transportation (IDOT).

This document is periodically updated to provide the most current status information for Gateway development/deployment.

Public Outreach

The Gateway has also been active in numerous outreach programs, targeting both adults and students:

- The role of ITS was explained to visitors at Science Chicago's Science Works program at the Museum of Science and Industry.
- Career opportunities were reviewed with middle and high school students at IDOT Career Days in both Chicago and Springfield.

- Gateway staff participated in a panel on engineering careers and explained transportation engineering to high school students at Fermi lab STEM Education Night.
- ITS was also promoted at the Engineers Week Expo at IIT-Rice Campus and at the Des Plaines Library Introduction to Technology Day.
- A tri-fold brochure was created by the Gateway staff which explains the value of the Gateway data. Pocket cards were also created that contain both telephone numbers and state web sites for the four (4) Gateway states. This material was distributed at University of Illinois Traffic Safety Conference, Midwest Trucking Association Truck Show and Convention, and the ITS Midwest Annual Meeting. Staff members were also on hand to demonstrate the features of the Gateway.

Current Capabilities

The Gateway software/hardware and equipment is currently located at the IDOT Traffic Systems Center (TSC) in Oak Park, Illinois. The Gateway operating staff is located at the IDOT District One ComCenter offices in Schaumburg, Illinois. Currently, the Gateway is operational 24/7/365 which is consistent and a natural fit with the 24/7/365 IDOT ComCenter operation.

Staffing

The Gateway senior staff includes three developers, one Senior System Engineer and one Project Coordinator from UIC and several developers from Delcan. The Project Coordinator and Gateway operations staff at the IDOT ComCenter are responsible for the following functions:

- Entering incident information into the Gateway system.
- Entering construction data into the Gateway system.
- Placing important messages on the Gateway website banner.
- Answering or re-directing e-mail inquiries to the webmaster account.
- Monitoring data feeds and other Gateway components and notifying support staff of any outages detected.
- Answering the Gateway phone number and forwarding calls to appropriate personnel.
- Preparing system performance reports and other tasks as directed by IDOT or UIC senior personnel.
- Gateway operators are pro-active and continually monitor the maps for unusual activity that could signal an unreported incident.
- During periods of inclement weather, the Gateway staff monitors road condition information provided by various State Police Departments and posts this information as Announcements or Banner messages.
- The Gateway operations staff monitors incident response and distributes information for major incidents whose impacts cross jurisdictional boundaries.

The Gateway operations staff at the IDOT ComCenter includes the full-time Project Coordinator, two other full-time employees, and four part-time employees.

Types of Data Supported

The following types of data are maintained by the Gateway system. Unless indicated otherwise, all this information is available 24/7.

Construction

The GTIS receives data for construction reports via e-mail from the Illinois Tollway, IDOT Districts One and Two, the Wisconsin Department of Transportation (WisDOT), the Indiana Department of Transportation (INDOT), the Michigan Department of Transportation (MDOT), the Chicago Department of Transportation and occasionally the Chicago Office of Emergency Management and Communications (OEMC). Typically, construction information is received and entered the day before the construction starts. Longer running construction and maintenance activities are entered when they are received and then updated as additional information is received. The construction icons and boundaries are placed on the map and detailed construction information is placed in the construction report. Construction reports for each individual project are available for each interstate including location, mile marker(s), severity (minor, medium, or high), closure details (lanes, shoulders, ramps closed), start time, end time, data source, and description. Ramp exits and entrances have been made more legible by stating "Exit ramp to XXX" or "Entrance ramp from XXX."

Major construction projects can also be displayed on the website home page, in the website banner, and in the "Projects" menu on the website menu bar. The Construction Announcements report available via the Notices Page provides comprehensive and detailed information for the major construction projects. The GTIS also allows for web based entry of construction and other announcements via a password protected website.

Travel Times

The GTIS receives travel time data from the Illinois Tollway, WisDOT, Indiana Toll Road/Chicago Skyway, INDOT, and the TSC via automated interfaces. There are currently 433 travel time reports. Downtown Chicago-oriented travel times are shown on the website map with a tear drop and link travel times with a circle. The individual travel time reports include the color-coded congestion status (none, light, medium, or heavy), the start point, end point, actual travel time, average historical travel time, distance, and speed for each segment.

Congestion

The GTIS receives congestion data from the Illinois Tollway, WISDOT and Indiana Toll Road via automated interfaces. Detector data received from the IDOT TSC and INDOT Borman Advanced Traffic Management System (ATMS) are automatically converted into congestion information by the GTIS. Travel time data from the Chicago Skyway is automatically converted into congestion data by the GTIS. The GTIS currently has 1,968 congestion reports. Congestion typically covers much smaller segments of interstates than travel time information. The map displays the color-coded congestion and the congestion report includes this same color-code along with the start point and end point for each interstate segment.

Incidents

Incident data is automatically received from the Illinois Tollway from their interface to the Illinois State Police (ISP) District 15 Computer Aided Dispatch (CAD) system. The Tollway Traffic and Incident Management System (TIMS) operators can then review the incident information and hit a "Send to Gateway" button. The Tollway TIMS sends incident information to the Gateway if the incident impacts at least one lane of traffic. The Tollway TIMS regular operating hours are 5 a.m.-8 p.m. weekdays. During hours that the TIMS is closed, incidents that involve complete road closures, accidents with fatalities and HAZMAT spills are sent to the Gateway on a 24/7 basis.

The IDOT District One ComCenter has multiple GTIS workstations. One workstation at the supervisor's desk and two at the GTIS operations desk can be used to send incident information to the GTIS. All incident information received for IDOT expressways that impact at least one lane of traffic are entered into the GTIS on a 24/7 basis. Incident information is also received from InDOT, WisDOT, and MDOT via e-mail. The GTIS operators enter these incidents into the GTIS database. Incidents are displayed on the map with a fire burst icon and the incident report provides comprehensive information including incident description, location, mile marker(s), closure details, status, start time, end time, and source. Incidents that involve segments (more than point) locations (i.e. flooding, infrastructure failures) are now displayed on the GTIS with a yellow/black striped line.

Detectors

The GTIS receives detector data from WisDOT, the TSC, and INDOT via automated interfaces. The detector report includes the status, nearest cross street, speed, occupancy, volume, and source for each detector location.

Message Signs

The GTIS receives message sign text from WisDOT, the TSC, and the Illinois Tollway via automated interfaces. The information contained in the message sign report includes the sign status, location, the text contained on the message, and source.

Special Events

The GTIS can receive and display special event information on the website. Currently, amber alerts are received this way via an automated interface with IDOT and are displayed in the website banner.

Cameras

The GTIS currently receives 66 camera snapshot images from the IDOT District One ComCenter via file transfer protocol (ftp) over the gigabit network. New camera images are added to the system as they become available. The camera report contains information on the location, description, image age, and thumbnail aerial view for each camera. The camera images are displayed by clicking on a camera icon on the website map or selecting a camera via its thumbnail image on the camera report. The camera image is accompanied by reference views so that the user can gauge which direction the camera is currently facing.

Automated Interfaces

The Gateway has a number of automated interfaces for sending and receiving traffic information. Except for camera images, data can be sent or received from the Gateway via a direct CORBA connection or over the Internet via XML files. An account with a user name and password is required to send or receive information via XML files. The Gateway currently has 87 approved accounts.

Geographic Coverage

The Gateway covers the original 16 counties of the GCM priority corridor which include:

- Illinois
 - Cook County
 - DuPage County
 - Kane County
 - Lake County
 - McHenry County
 - Will County

- Indiana
 - Lake County
 - LaPorte County
 - Porter County

- Wisconsin
 - Kenosha County
 - Milwaukee County
 - Ozaukee County
 - Racine County
 - Walworth County
 - Washington County
 - Waukesha County

The Gateway's geographic coverage has been increased to encompass southern Wisconsin from Madison to Milwaukee and down to the Illinois border, northern Illinois from the Quad Cities to Chicago, northern Indiana from Gary to the Ohio state line, and southwestern Michigan from Holland to Albion and down to the Indiana state line.

An additional 35 counties have been added to the Gateway system. This expanded region includes the additional counties covered in the Lake Michigan Interstate Gateway Alliance (LMIGA) boundaries and other counties which include:

- Illinois
 - Boone County
 - Bureau County
 - Carroll County
 - DeKalb County
 - Grundy County
 - Henry County
 - JoDaviess County
 - Kendall County
 - LaSalle County
 - Lee County
 - Ogle County
 - Rock Island
 - Stephenson County
 - Whiteside County
 - Winnebago County
- Indiana
 - Elkhart County
 - LaGrange County
 - St. Joseph County
 - Steuben County
- Wisconsin
 - Columbia County
 - Dane County
 - Greene County
 - Jefferson County
 - LaFayette County
 - Rock County
- Michigan
 - Allegan County
 - Barry County
 - Berrien County
 - Branch County
 - Calhoun County
 - Cass County
 - Eaton County
 - Kalamazoo County
 - St. Joseph County
 - Van Buren County

Additional expressways (I-39, I-74, I-180, I-280, I-69, I-96, and I-196) have been added to website report route menus. Illinois, Indiana, Wisconsin and Michigan arterial highways have also been added to the website report and these highways are displayed according to the counties that they traverse. The

county reports also include information for some major local highways. Geographic coverage enhancements have been deployed and are currently available on www.gcmtravel.com.

In addition, Gateway workstations and servers have been upgraded with additional memory to support the additional geographic coverage.

Gateway Websites

The Gateway currently disseminates traffic information through its websites at www.gcmtravel.com, www.gcmtravelstats.com and www.iltrafficalert.com.

WWW.GCMTRAVEL.COM

The gcmtravel.com website receives about 11,500 visits per day. A visit is defined as someone going to the website, looking through the data, and then leaving the website.

The web servers are located at the TSC. A high-speed, fiber optic, Optical Carrier (OC-3) connection to the Internet provides ample bandwidth for serving the website to the public. Six web servers work in tandem for the gcmtravel.com website. The six web servers are connected to a load balancer that also automatically detects failures and switches website traffic to the remaining working web servers. For this reason, complete outages are very rare occurrences.

The following pages are provided under the gcmtravel.com website:

Map Page

Eight pre-defined maps (Chicago area, City of Chicago, Gary, Madison, Milwaukee, Quad Cities, Rockford, and Southwest Michigan) are available for viewing on the website. The maps can be scrolled and zoomed to any location within the above geographic coverage area. In addition, the map on the “My Map” page will remember the user's scroll and zoom level preferences and automatically display the map at the user's preferred location upon subsequent visits.

The user can click on any map to obtain more detailed information about the travel times, congestion, construction, incidents, message signs, cameras, etc. that are displayed on the map.

Some icons on the map link to external websites such as O'Hare Airport.

Mobile Map

The GTIS website provides a smaller non-interactive version of its Chicago map at m.gcmtravel.com for customers with mobile devices with limited screen sizes (e.g., Blackberry's, iPhones, etc.).

Improved Mapping

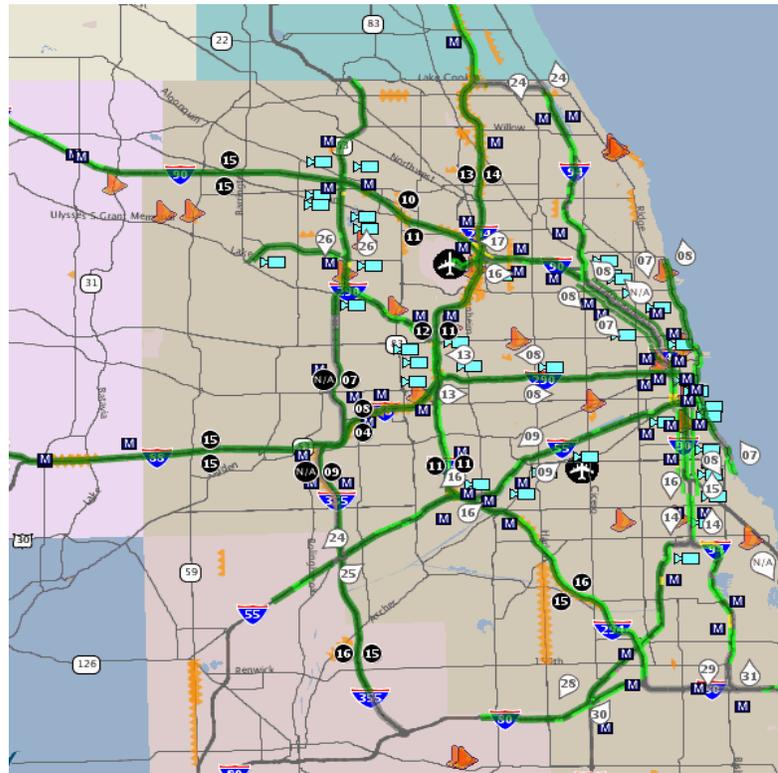
The display of the map on the gcmtravel.com website has been improved by adding additional road labels and icons. The map also has been made larger and the scrolling improved. Translucent

congestion and construction layers have been added so that the interstate shields and road names can be seen beneath these two top layers on the website maps. Also, section incident information is available on the map.

Notices Page

High Priority Announcements

- The website “High Priority Announcements” page has recent announcements displayed in both text format and Really Simple Syndication (RSS) XML format. Gateway users can subscribe to RSS feeds (a format delivering regularly changing web content) to have construction announcements and news items delivered to their individual computers.



Construction Announcements

The construction announcements page provides detailed information on current construction projects.

News Items

The news items page provides information for ongoing project activities in the LMIGA region that are not construction oriented.

Transit Incidents

The transit incident page provides reports on major transit service disruptions in the LMIGA region.

Weather Advisories

The weather advisory page provides information on major weather events that have an impact on the traveling public.

Reports Page

The website has detailed reports for all the traffic information it receives such as travel times, congestion, incidents, construction, cameras, special events, detectors, message signs, highway advisories, and weather. The locations on the construction report link to the map.

My Travel

The "My Travel" page allows frequent visitors to choose the locations they are most interested in. Other pages that display traffic reports are then filtered based on these favorite locations. The favorite locations only need to be selected once and are stored as "cookies" in the user's web browser.

Chicago Quick Traffic

The Chicago Quick Traffic report (www.gcmtravel.com/gcm/ChicagoQuickTraffic.jsp) provides users current travel times and average speeds for major segments of every IDOT and Illinois Tollway interstate in the Chicago region. This feature provides users an opportunity to retrieve specific and real-time travel times and speeds for the interstate segments that are of most interest to them.

Projects Page

The projects menu of the gcmtravel.com website contains links to information on major, on-going construction projects within the Gateway coverage area.

Help Page

The help menu provides page-by-page descriptions of the information contained on the website.

FAQ

The Frequently Asked Questions (FAQ) page contains a list of common questions (e.g., where does the data come from?) about the website and the answers to those questions.

About Page

Links

The links within the About Menu of the gcmtravel.com website contains links to other websites providing travel related information.

Traffic Information Access Policy

The process of registering to receive data from or send data to the Gateway system has been automated. A registration page prompts potential partners and users for contact information and the type of information they are interested in. The information is stored in the Gateway database and an e-mail sent to an IDOT official who approves the request, asks for more information, or rejects the request

via a separate Gateway "access approver" web page. Once the account is approved, an email is automatically sent to the user with technical instructions on how to access the Gateway. Note that a written agreement with IDOT will be necessary if entities are redistributing or earning revenue from the provided traffic information.

Accounts that pre-dated the deployment of the new traffic information access registration policy/procedure and contained insufficient contact information were purged. Officials for other existing accounts were contacted and asked to update their registration information and comply with the new registration procedure.

GCM Travel User Survey

A GCM Travel User Survey and an administration site Survey Results page to review the results have been implemented. This survey gathers relevant information from site users to enhance Gateway features and performance.

Other Features (Pages)

Incident Entry Web Page

A password protected web page has been deployed that allows remote systems and authorized users to quickly and efficiently enter incidents into the Gateway system. LMIGA members can register at www.gcmtravel.com/gcm/incidentEntryRegistration.jsp and then log on to enter incidents by going to <https://www.gcmtravel.com> (note the "s" is necessary in https). A total of fifteen (17) individuals have registered to enter incidents into the Gateway system.

Announcement Entry Page

A password protected web page allows remote systems and authorized users to quickly enter announcements into the Gateway system for display on an announcements report. A link is provided between the announcement entry page and the construction report for individual construction projects.

Improved Website Banner Message Entry Page

A preview button is available for the website banner entry page.

Upgraded System Database

In mid-December 2008, the Gateway software was ported to work with newly acquired hardware. The Gateway database has also been upgraded to a modern SQL compliant database.

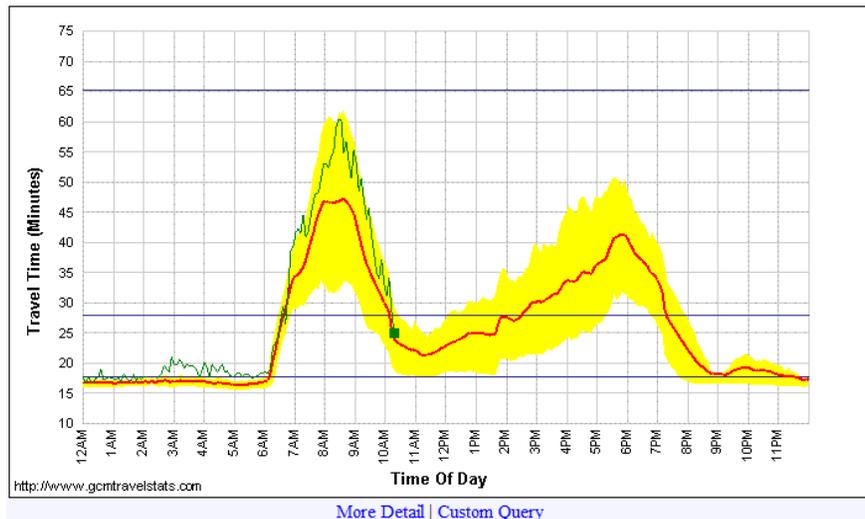
WWW.ILTRAFFICALERT.COM

The [iltrafficalert.com](http://www.iltrafficalert.com) website allows users to register to receive traffic information on their desktop or on their cell phone or other device. Users can choose up to six pre-defined routes from an available list of 72 routes within the Chicago region in Illinois. Users can choose one or two time periods per day that they wish to receive these notifications. Notifications can be sent once per time period or up to once

every 15 minutes. Users can also limit notifications to when the average speed on their selected route is less than a speed limit they choose. Users can choose to receive travel time, congestion, construction, and/or incident reports in their notification.

WWW.GCMTRAVELSTATS.COM

The www.gcmtravelstats.com website allows users to view historical travel time statistics. Nearly five years worth of historical information is available on this website. The website is maintained by Roadstats, LLC and is funded through the IDOT/UIC Intergovernmental Agreement. Statistics available include the average travel time by time of day, the overall average for a given week day, and the standard deviation by time of day. Custom reports are also available that allow one to view statistics for a specific range of dates and to also compare statistics for two travel time routes and/or two sets of week days. The gcmtravel.com website is fully integrated with the gcmtravelstats.com website. For instance, users can click on a travel time icon on any of the gcmtravel.com maps to view its historical information on gcmtravelstats.com.



Additional Operational Characteristics of the Gateway System

Improved Secure Site Access Control

Access restriction data for management of the administration menus and certain other sensitive pages are stored in the Gateway database and provide a web interface for making changes to the Gateway's access policies.

TSC Environmental Sensors

Environmental sensors at the TSC monitor the temperature, humidity and other ambient conditions of the TSC telemetry room. The Gateway automated monitoring system (Nagios) periodically checks these sensors and sends warnings to appropriate personnel in the event of a problem. Nine sensors monitor temperatures in the following areas:

UPS room (One sensor)

Telemetry room (Two sensors)

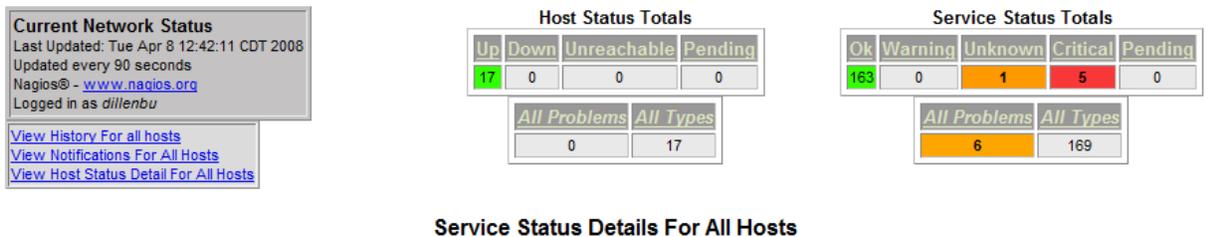
Dell Gateway cabinets (Six sensors)

Quality Control

The Gateway system and its associated websites are monitored 24/7 by an automated monitoring system. The monitoring system checks nearly 297 different aspects of the system operation every 5 to 60 minutes. Monitoring includes connections to external data sources, the quality of data coming from external sources, disk space, CPU usage, databases, web servers, mail servers, network connectivity and more.

Any outages that are detected are sent to Gateway support staff automatically via e-mail notifications. Outages that are not corrected within one hour of occurrence are automatically escalated and support personnel are then called on the phone or paged. IDOT personnel are also notified if the outage is escalated.

The monitoring system keeps statistics on outages so that patterns can easily be discerned and dealt with.



Service Status Details For All Hosts

Host ↑↓	Service ↑↓	Status ↑↓	Last Check ↑↓	Duration ↑↓	Attempt ↑↓	Status Information
application-server	/home Disk Space	OK	04-08-2008 12:20:49	7d 20h 1m 6s	1/4	DISK OK - free space: /home 22473 MB (80% inode=98%):
	/tmp Disk Space	OK	04-08-2008 12:22:29	7d 20h 26m 26s	1/4	DISK OK - free space: /tmp 13352 MB (99% inode=99%):
	/usr Disk Space	OK	04-08-2008 12:28:07	7d 20h 17m 21s	1/4	DISK OK - free space: /usr 21488 MB (34% inode=97%):
	/var Disk Space	OK	04-08-2008 12:29:39	7d 20h 17m 21s	1/4	DISK OK - free space: /var 71908 MB (75% inode=99%):
	Backup of development-server/home	OK	04-08-2008 06:30:22	30d 5h 50m 20s	1/2	FILE_AGE OK: /usr/local/BACKUP/development-server/home_daily.dump is 23097 seconds old and 56913920 bytes
	Postgresql	OK	04-08-2008 12:34:38	7d 20h 9m 35s	1/4	OK - database gateway (0 sec.)
development-server	/usr Disk Space	OK	04-08-2008 12:36:50	7d 20h 17m 21s	1/4	DISK OK - free space: /usr 27942 MB (27% inode=98%):
ens1@tsc	/ Disk Space	OK	04-08-2008 12:40:43	25d 12h 14m 45s	1/4	DISK OK - free space: / 3405 MB (88% inode=98%):
	/boot Disk Space	OK	04-08-2008 12:13:43	25d 12h 13m 0s	1/4	DISK OK - free space: /boot 168 MB (93% inode=99%):
	CPULOAD	OK	04-08-2008 12:34:57	7d 20h 12m 10s	1/4	OK - load average: 0.00, 0.00, 0.00
	HTTP	OK	04-08-2008 12:32:29	25d 12h 36m 31s	1/4	HTTP OK HTTP/1.1 200 OK - 11821 bytes in 1.649 seconds
	Network Connections	OK	04-08-2008 12:37:29	7d 20h 12m 10s	1/2	OK: connections=18, waiting=2
	Sendmail	OK	04-08-2008 12:40:29	7d 20h 17m 20s	1/4	SMTP OK - 0.000 sec. response time
ens2@tsc	/ Disk Space	OK	04-08-2008 12:29:39	7d 19h 58m 5s	1/4	DISK OK - free space: / 56710 MB (98% inode=99%):
	/boot Disk Space	OK	04-08-2008 12:30:47	7d 19h 58m 5s	1/4	DISK OK - free space: /boot 168 MB (93% inode=99%):

Amber Alerts

Statewide amber alerts are being displayed in the Gateway website banner so they are visible on all Gateway web pages.

Gateway Statistics

- 99.273% uptime during 2009 for the new GCM web site that was successfully deployed on December 8, 2008. The high uptime rate is derived by Nagios (Network Monitoring System).
- 433 Travel Time Reports.
- 1,968 Congestion Reports.
- 4,111 ENS Subscribers.
- 87 approved Gateway accounts that receive traffic information via CORBA/XML.
- 11,500 site visits per day.
- Average of 300 construction and incident entries are made daily.
- 17 individuals are registered to enter incidents into the Gateway system.

Major Enhancements in Progress

Parallel Redundant Gateway System (Improve Reliability of Gateway System)

A fully parallel and redundant Gateway system is being setup at UIC. This system, when fully deployed, will be configured to automatically take over for the primary Gateway system should any major failures be detected by the external automated monitoring system. The system has been set up for a manual failover. The process to provide for an automated failover is still in progress. This task is included in the FY 2009-2010 IDOT/UIC Intergovernmental Agreement.

Lake County Incidents

Incident data from the Lake County TMC will be displayed on the Gateway website and be available in the Gateway CORBA and XML feeds. This Lake County interface has been deployed on a development website and is currently being tested. Traffic signal malfunctions will be considered an incident. Also, a Lake County report location has been added to all web site report menus.

Lake Michigan Interstate Gateway Alliance Notification Service

Remaining work elements for this task include:

- Design and implement a registration page for Traffic Operations staff and a mechanism for controlling access to a page.
- Develop an INS (Interagency Notification Service) tailored to the needs of Traffic Operations Center Staff.
- Determine the feasibility of publishing low confidence events to Traffic Operations staff only.

Lake Michigan Interstate Gateway Alliance Website

The Gateway website will be "re-branded" as an LMIGA website with:

- A new logo and LMIGA header.
- Reorganized menus.
- More readable and attractive reports.
- A links page with logos and other LMIGA links.

This task has started under the current IDOT/UIC Intergovernmental Agreement. A Request for Information was distributed and comments received. Several LMIGA members offered suggestions on the new website design and provided additional feedback.

A Graphics Artist in coordination with a web developer have been making progress on the specifics of the new redesigned website. A draft mock up is going to be provided to the LMIGA work groups in late March 2010. After comments are received from the LMIGA work group members, the final design will commence and a full scale demonstration will be delivered to the work groups. Three domain names have been procured for use in the future rebranded LMIGA web site. These domain names include www.travelmidwest.com, www.travelmidwest.org, and www.travelmidwest.net.

Major Planned Gateway Enhancements

Enhanced Illinois Tollway Congestion Data

Finer grained Illinois Tollway congestion data will be displayed on the Gateway website maps only. More accurate travel times will also be made available on the maps and via the Gateway data feeds. It is expected that deployment will occur under the IDOT/UIC Intergovernmental Agreement. A draft design has been transmitted to the Illinois Tollway for their review and approval.

Quad Cities Integration

Requirements analysis and design of an interconnect between the Gateway and the upcoming Quad Cities TMC will begin shortly and is included in the current IDOT/UIC Intergovernmental Agreement. The completion timetable is dependent upon the status of the Quad Cities ITS initiative.

Automated Illinois Tollway Construction Feed

Testing of an automated interface with the Tollway TIMS that receives Tollway construction reports, processes them, saves them to Gateway database, and forwards them to other Gateway subscribers is expected to be completed under the existing IDOT/UIC Intergovernmental Agreement.

Recent Gateway Accomplishment Highlights (December 24, 2009-March 5, 2010)

This section summarizes Gateway system accomplishments since the previous Gateway System Status Report was published.

- The Uninterruptible Power Supply (UPS) at the TSC was removed and replaced with a newer unit with additional capacity. This procurement and installation was coordinated by the UIC Office of Project Management-Facilities working in conjunction with IDOT. The new UPS became operational at TSC on January 30, 2010.
- Several tasks were completed for the Lake Michigan Alliance Notification Service including determining requirements for a system to notify Traffic Operations Center staff of events of interest via email, reaching a consensus on roadway areas of influence for Traffic Operations Centers to determine event severity and adding these areas of influence to the notification system, and working with Lake Michigan Interstate Gateway Alliance members to increase Gateway incident coverage. Also, a high-level design document was prepared and draft set of system requirements distributed to the LMIGA Traffic Center Communications Work Group.
- DMS sign icons were added to the maps for northbound and southbound I-355 (Veterans Memorial Tollway) at 127th and 167th streets.
- Links were added to the Projects menu for the Wacker Drive Reconstruction and Congress Parkway Bridge project web sites.
- A transit incident announcement type was added to enter transit incidents and a web page was designed and implemented to display current transit service disruptions and incidents.
- An approach was added to allow users to pan the web site maps by dragging an image with a mouse.
- A City of Chicago map was added.
- An RSS icon and link were added for all four announcement pages.
- The camera report was redesigned with a far more concise format. Also, the map resulting from clicking on a location link in the Camera Report now zooms to the camera.
- An announcement category “Weather” was added, the category “Home Page” was changed to “High Priority Announcements”, and the order of the announcements on the announcements page was adjusted.
- The Gateway now possesses the capability to support landmark locations.
- The number of subscribers that have an automated interface with the Gateway increased from 84 to 87.

Summary of Earlier Gateway Accomplishments

This section summarizes Gateway system accomplishments achieved from all earlier report periods (through December 24, 2009).

- Named 2009 ITS Midwest Project of the Year.
- Receiving travel time data from the Indiana Toll Road/Chicago Skyway and INDOT.
- Receiving congestion data from Indiana Toll Road and InDOT Borman Advanced Traffic Management System.
- Camera icons for InDOT cameras have been added to the maps. Clicking on these icons takes the user to the TrafficWise website.
- Implemented approach to display segment incident data on the GTIS.
- Expanded geographic coverage of Gateway east to Ohio and west to Iowa. Southern Michigan has also been added. The Gateway coverage area now includes twenty (21) counties in Illinois, thirteen (13) counties in Wisconsin, ten (10) counties in Michigan, and seven (7) counties in Indiana.
- The Gateway is receiving sensor data from InDOT and making this data available to subscribers. Sensor data is converted into congestion and travel time data by the Gateway. The geographic coverage includes I-90/94 from the Illinois state line to the Lake Station interchange and I-65 from US-30 to I-80/94.
- The Gateway was upgraded to support the new Tollway mile markers on I-88, I-355, I-94 and I-294.
- Illinois, Indiana, Wisconsin, and Michigan arterial highways have been added to the website report and are displayed within each county they traverse.
- The Cook County Arterials report location was divided into a Chicago Arterials report location and a Suburban Cook County report location.
- The road network and county polygons for Calhoun and Branch counties in Michigan were added to the Gateway. Calhoun and Branch county were added to the “Michigan Arterials” report location menu for all event and traffic reports.
- Events and incidents which close entire segments of a roadway are also graphically depicted on the Gateway system.
- A news items link has been added to the Gateway Notices Page for ongoing project activities in the LMIGA region that are not construction oriented.

- A GCM Travel User Survey and an administration site Survey Results page have been implemented.
- A link has been added between the announcement entry page and the construction report for individual construction projects.
- A link to bridge information in Illinois has been added to the “Links” page.
- Redesigned Web Site Construction Reports.
- Mile marker locations are displayed for construction, incident, and special event reports.
- Improved report location selection options.
- Redesigned camera report.
- Locations listed in the camera, incident and special event reports were made clickable and will now take the user to the map page with the map centered and zoomed on the event. The event is highlighted to distinguish it from other graphics on the map.
- Amber Alerts added to Web Site banner.
- Improved Web Site Banner message entry page.
- Completed deployment of incident entry web page.
- Major discussions of upcoming projects, current operations, and notable activities are posted in the Construction/News Item sections of the gcmtravel.com web site under the Notices Menu Bar.
- The home page was changed to the “My Map” page.
- A special event layer with its own icons was added to the maps. The map legend has also been modified to reflect the new icons: ,  and .
- The Help Screens have been expanded so that Gateway users have the most comprehensive information available.
- Traffic Information Access Policy. Designed and implemented a web page for registering to receive Gateway traffic information (data and camera feeds).
- Improved operator construction entry interface.
- Improved secure site access control. (Improve Administration page for defining access roles and associating them with web pages).

- Completed survey page regarding usefulness of information on the Gateway system.
- Web based incident entry-authorized users can log onto Gateway website and submit incident information.
- Added message sign and travel time icons to map for I-355 extension.
- Two DMS signs on eastbound and westbound I-88 at I-39 were added to the maps and reports.
- Integrated additional CCTV cameras into Gateway.
- Implemented new Gateway System which included a new Gateway server and upgraded data base. The new Gateway system was successfully deployed on December 9, 2008.
- Navteq DB upgraded.
- Lake County TMC integration. Design, install, and configure network to connect Lake County TMC to Gateway.
- Three (3) additional environmental sensors have been added at the IDOT TSC for a total of nine (9) environmental sensors.
- Completed numerous programming changes, updates, and enhancements as part of UIC's PCR (Project Change Request) system.
- Hired and trained two (2) full-time and three (3) part-time Gateway Operators.
- Hired Senior System Engineer.
- Hired one additional part-time Gateway operator.

Conclusion

The ITS Program Office can provide interested parties with annual highlights of Gateway system accomplishments for calendar years 2009 and 2010.