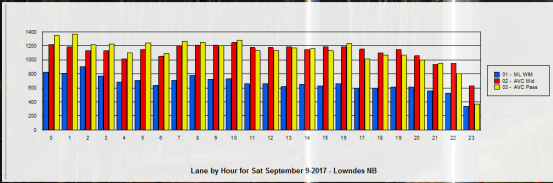


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Virtual Weigh Station Data Reporting

Case Study: Georgia DOT traffic monitoring using IRD's Virtual Weigh Station system during the 2017 hurricane evacuation.

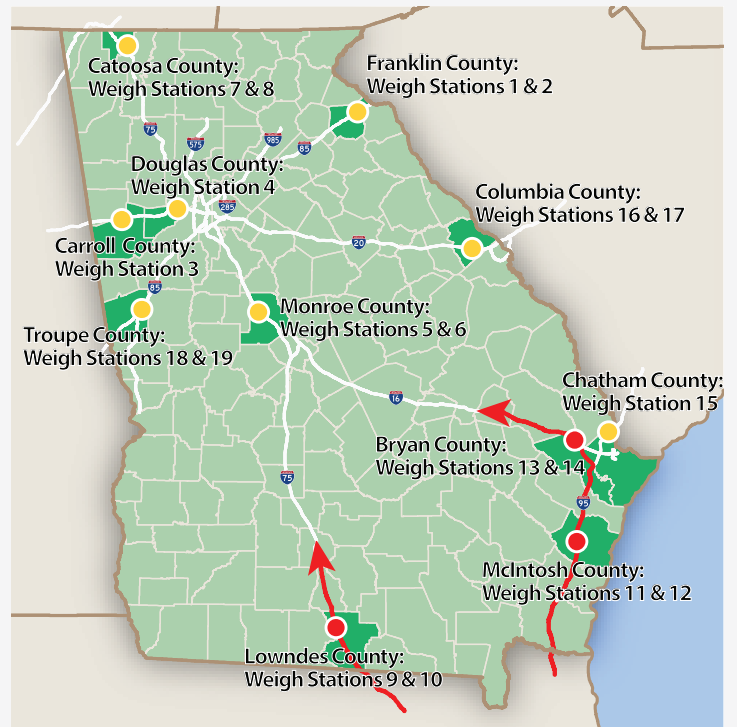
Monitoring the Effect of a Massive Evacuation utilizing IRD's VI²M™, a web-based information management platform

Georgia Motor Carrier Compliance Division (MCCD), the agency responsible for weight and safety enforcement in Georgia, contacted IRD in advance of Hurricane Irma's landfall in order to see what features they could use to monitor the traffic at their weigh stations and provide useful information to internal and external stakeholders. MCCD indicated they were already watching the IRD Virtual Weigh Station (VWS) websites very closely.

MCCD was interested in other ways to further monitor traffic flow and volumes in preparation for evacuation management along Georgia's eastern coast. MCCD indicated that they were interested in the Bryan WB, McIntosh NB, and Lowndes NB sites. These locations are the evacuation routes on I-16 (Bryan WB), I-95 (McIntosh NB) and I-75 (Lowndes NB).

Real time traffic data is what MCCD hoped to glean from the system during this event. Commercial Motor Vehicle (CMV) counts are a great piece of information to have for "downstream" planning. MCCD can look at DOT traffic cameras, but that is no indication of vehicle speed.

MCCD could see the speeds indicated on the VWS webpage with the CMV pictures. MCCD felt it was a decent indicator of traffic speed, at that moment in time, at that location. However, they were looking for more information on the number of vehicles and/or CMVs travelling by the stations. After consulting MCCD, IRD determined that a useful tool could be activated on the VWS webpage that would provide traffic volume, occupancy and speeds, in addition to the other information available already on the VWS per vehicle screens.



IRD Weigh-In-Motion Sites in Georgia



Monitoring the Evacuation – Hurricane Irma

Utilizing VI2M, IRD activated the Volume Occupancy and Speed (VOS) application on the iSINC roadside controller for the Bryan WB commercial vehicle screening site to see if it would be useful to MCCD. The VOS display was also turned on the VWS page as the Summary tab.

The VOS application calculates Real Time Statistics (RTS) based on vehicle data collected over a user-specified time window. It provides this data for all the lanes instrumented at the weigh station. The systems deployed in Georgia have sensors in all of the Mainline highway lanes. At the Bryan, McIntosh and Lowndes sites the weigh stations are across the road from each other and therefore provide data for all lanes of traffic. MCCD indicated that the Summary tab showed good information for them.

MCCD requested the ability to review traffic counts in given periods. For example, from 8 am to noon a certain number of vehicles passed this location as compared to noon to 4 pm. During the evacuation period, traffic flow increased by a certain number of vehicles. This would give MCCD an indication of how many vehicles were travelling which direction during the crisis period, including both evacuations and return trips.

IRD then concluded that the information related to traffic increase was better suited to what could be obtained from the Central Reporting Software. Sample reports were sent to MCCD for the traffic on Monday, August 28th versus Monday, September 4th to demonstrate traffic pattern change on a typical Monday versus a long weekend Monday.

MCCD reviewed the sample reports and agreed that it would provide useful information that they could use over the period of the evacuation.

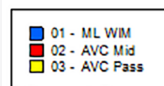
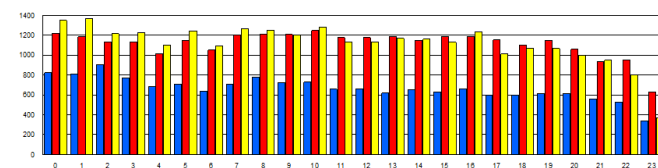
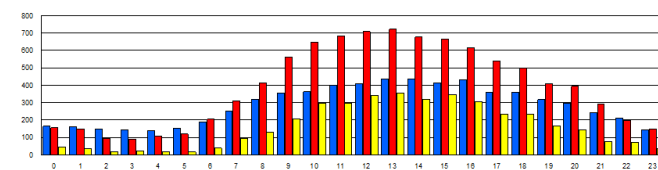
Reports were produced for the Lowndes NB site comparing the traffic September 8 to 10 versus the last previous 3 weekends for comparison. The reports indicated that there was a dramatic increase in traffic at Lowndes NB on Friday, September 8th and Saturday, September 9th. The reports also indicated at Lowndes NB that there was a dramatic decrease in traffic on Sunday, September 10th.

In summary, during a period of great public concern for traffic volume and safety, IRD's VI2M software offered MCCD the data needed to reassure all stakeholders. This response to an extreme weather event also introduced MCCD to the advanced real-time data capabilities of their commercial vehicle screening systems that have the potential to assist them with observing traffic patterns and speeds when other events, such as holidays or construction, affect traffic.

VWS Summary: Volume, Occupancy, Speed

Bryan WB	Average Speed	Average Occupancy	Vehicle Count
Main Drive	59.93 mph	5.75 %	1003
Main Pass	67.55 mph	6.41 %	1521
Ramp Exit	0.00 mph	0.00 %	4
Byp Drive	66.35 mph	5.68 %	1058
Byp Mid	0.00 mph	0.00 %	0
Byp Pass	73.14 mph	4.16 %	1468
Ramp Sensor	0.00 mph	0.00 %	4
Ramp	0.00 mph	0.00 %	4
Scale Report	0.00 mph	0.00 %	0
Scale Bypass	0.00 mph	0.00 %	4
Scale Sensor	0.00 mph	0.00 %	0
Lane 15	0.00 mph	0.00 %	0

Lane by Hour Graphs



"Thank you for the tutorial this past Friday. The traffic flow / count report that you were able to build for us is great. We will eventually request that we have access to this report for each of the 19 fixed locations and the virtual location once it is established."

– Captain Daniel W. Carroll, Georgia MCCD



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