

Traveler Information as Congestion Mitigation

Work-Zone ITS on the Sagamore Bridge



Sagamore Bridge Deck Repairs

\$5.5M Project to repair both the Sagamore and Bourne bridge decks. (\$2.0M Army Corps, \$3.5M ARRA)

- **40 foot deck – 4 lanes**

- **25,000 ADT**

- **Autumn/Spring Work (mid September – mid May)**

- **Autumn**

- Reported 3-4 hour delays
- Dozens of complaints each day

- **Spring – Work-Zone ITS with 3 Message Boards**

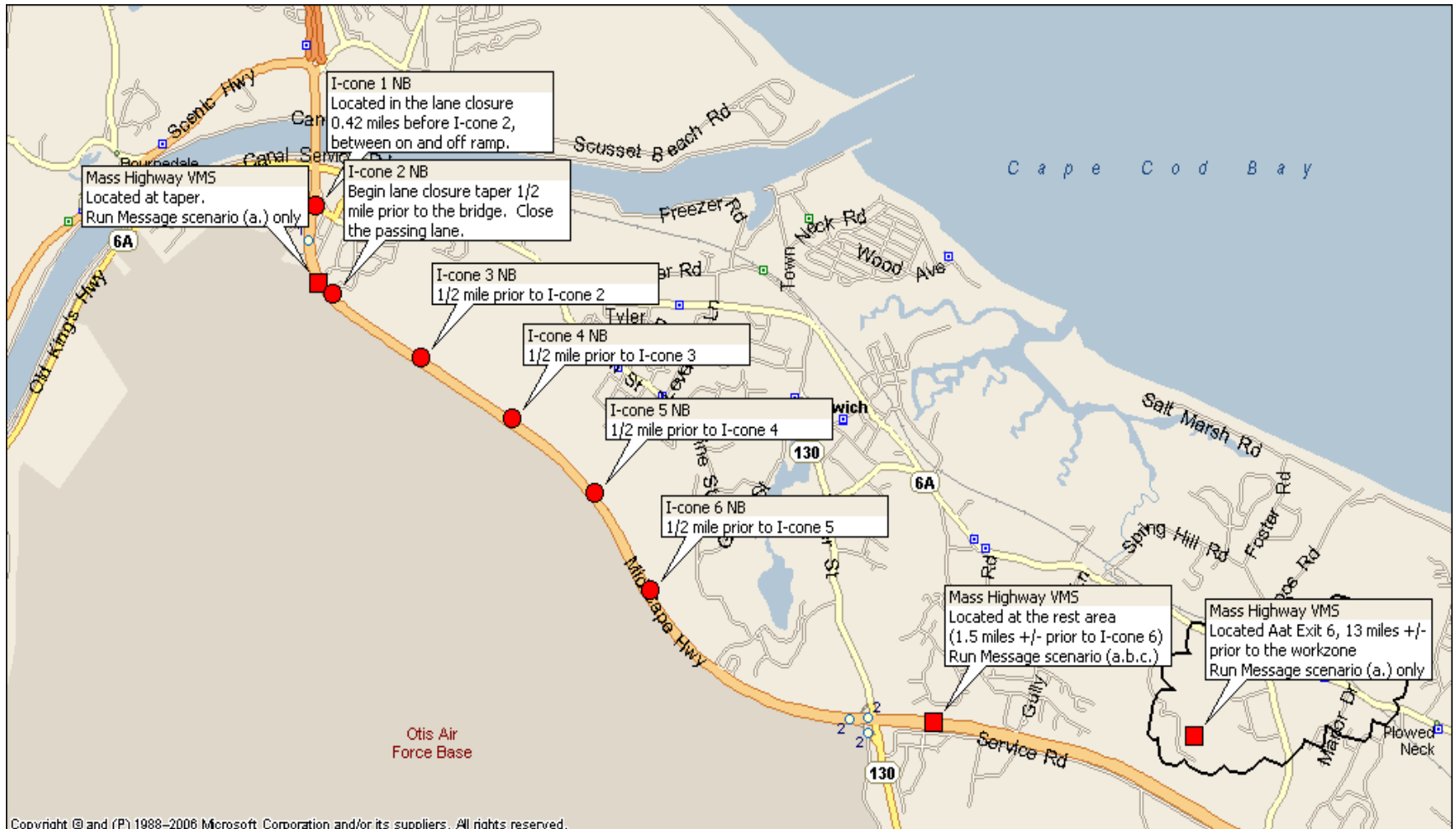
- Recorded delays >2 hours
- 2-3 complaints each day



- Self-networking speed sensors
 - MUTCD Compliant
 - NCHRP 350 Cat 2 Certified
 - Automatically networked to...
 - Web application – iConeTraffic.com
 - Operate message boards
 - Speed and queue alarms
 - Archived for analysis
 - XML stream to TMC



MassHighway, Army Corps, and iCone designed TCP in a one hour pre-deployment meeting.



If the current speed on the approaching roadway segment is > 55 MPH...
the upstream VMS will display the message.

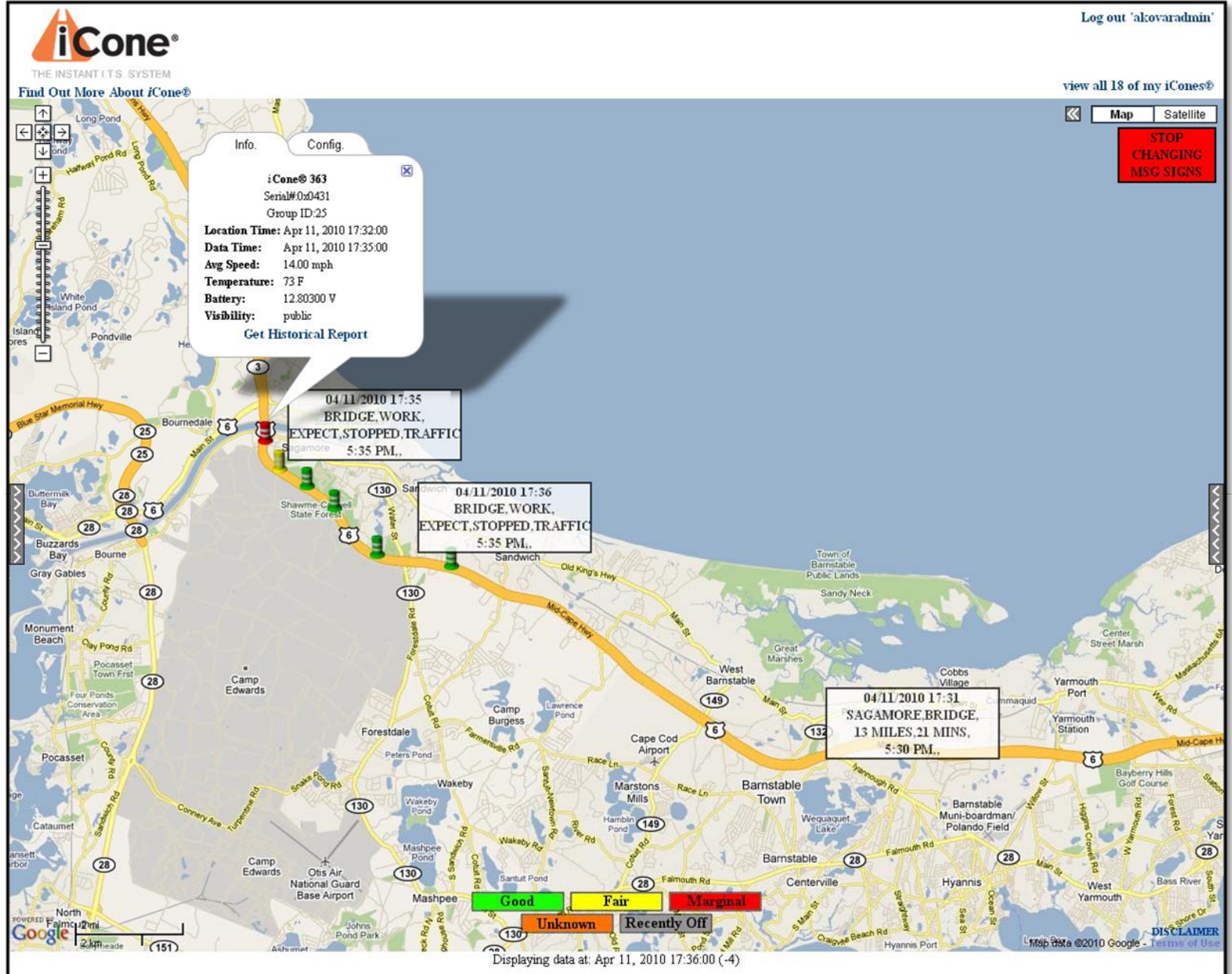
SAGAMORE, BRIDGE
XX MILES, XX MINS
00:00PM (current time)

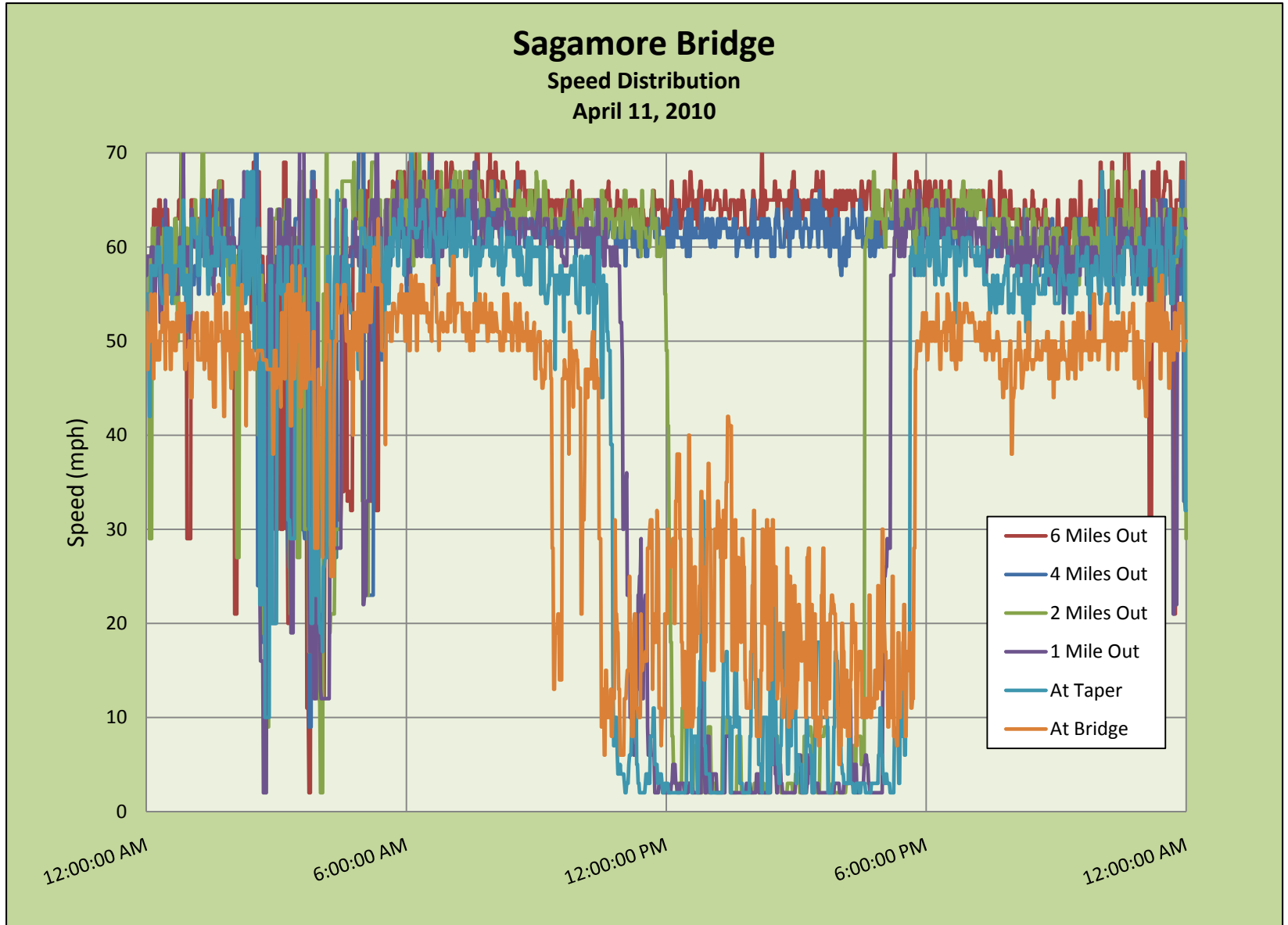
If the current speed < 45 MPH and > 16 MPH...
the following message will be displayed on the approaching VMS.

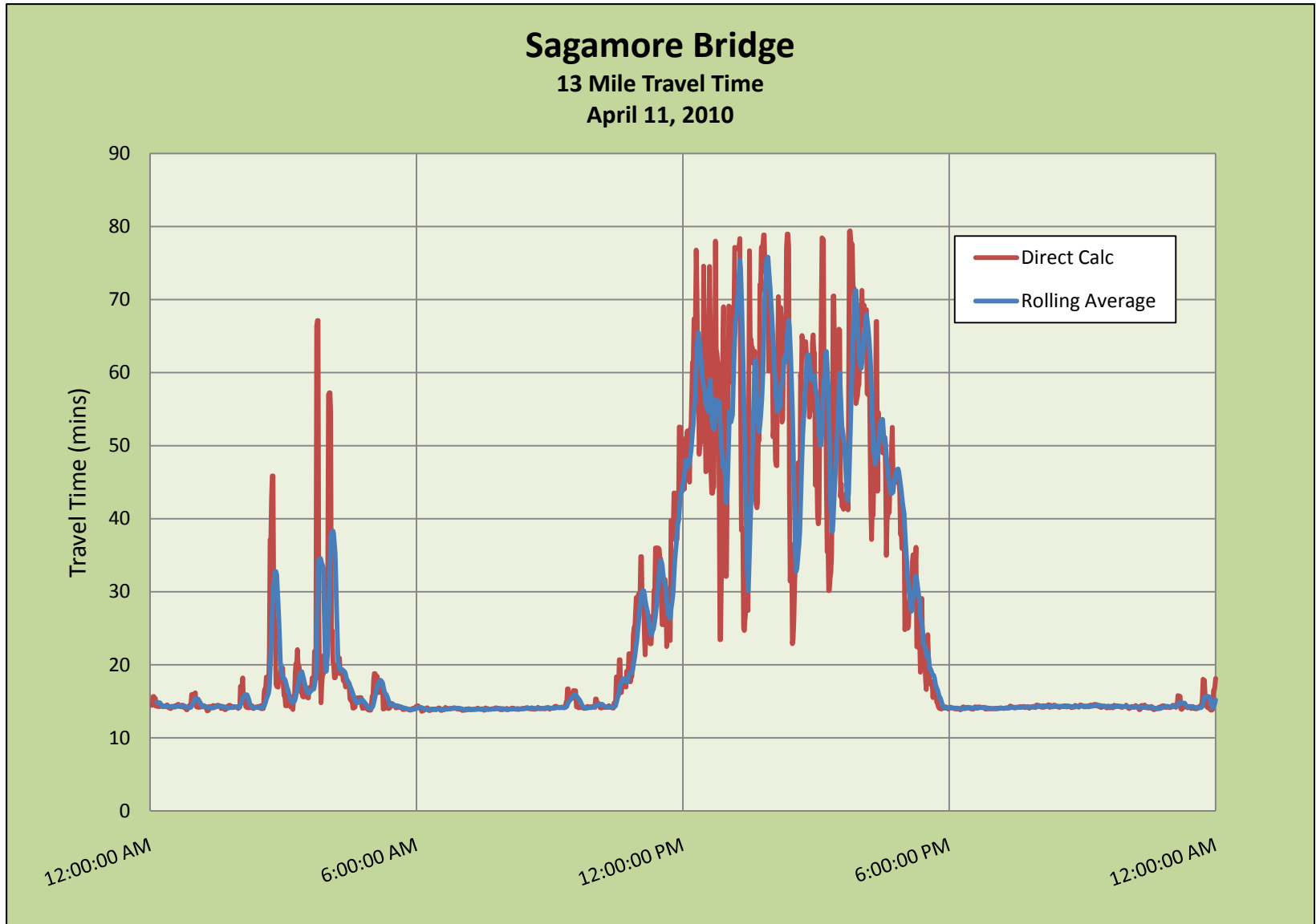
SLOW, TRAFFIC, AHEAD
BRIDGE, XX MILES, XX MINS
00:00PM (current time)

If the current speed on the approaching roadway < 15 MPH...
the following message will be displayed on the VMS.

STOPPED, TRAFFIC, AHEAD
PREPARE, TO, STOP
00:00PM (current time)



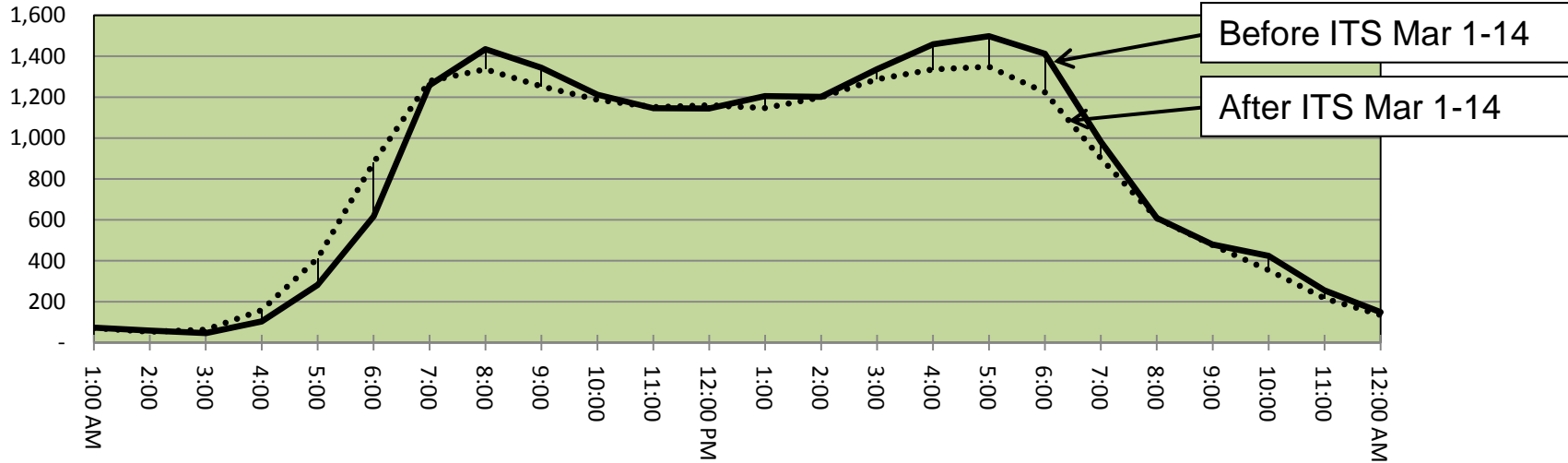




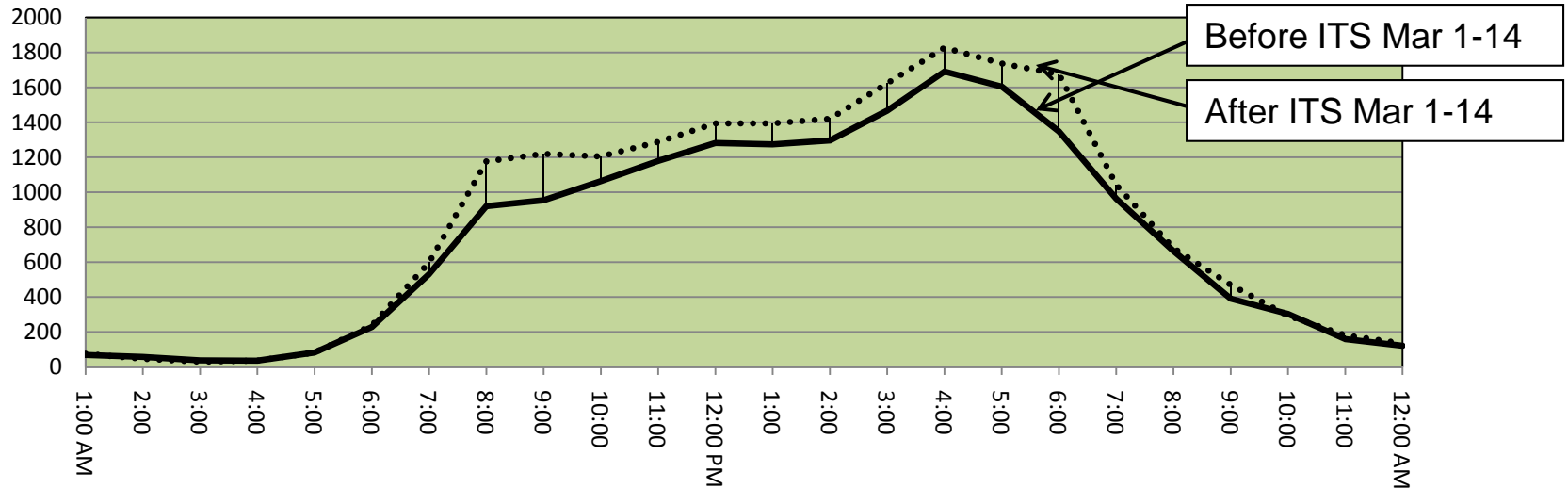


Results – Traffic Diversion

SAGAMORE BRIDGE HOURLY TRAFFIC VARIATION - WEEKDAY



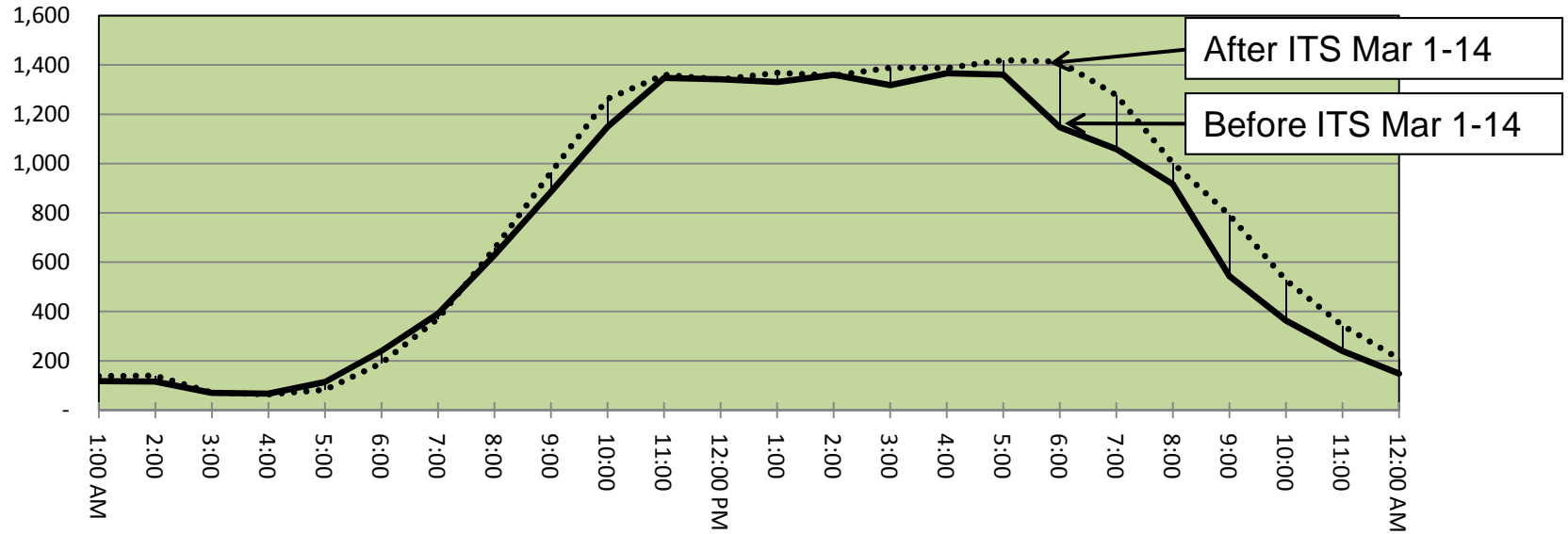
BOURNE BRIDGE HOURLY TRAFFIC VARIATION - WEEKDAY



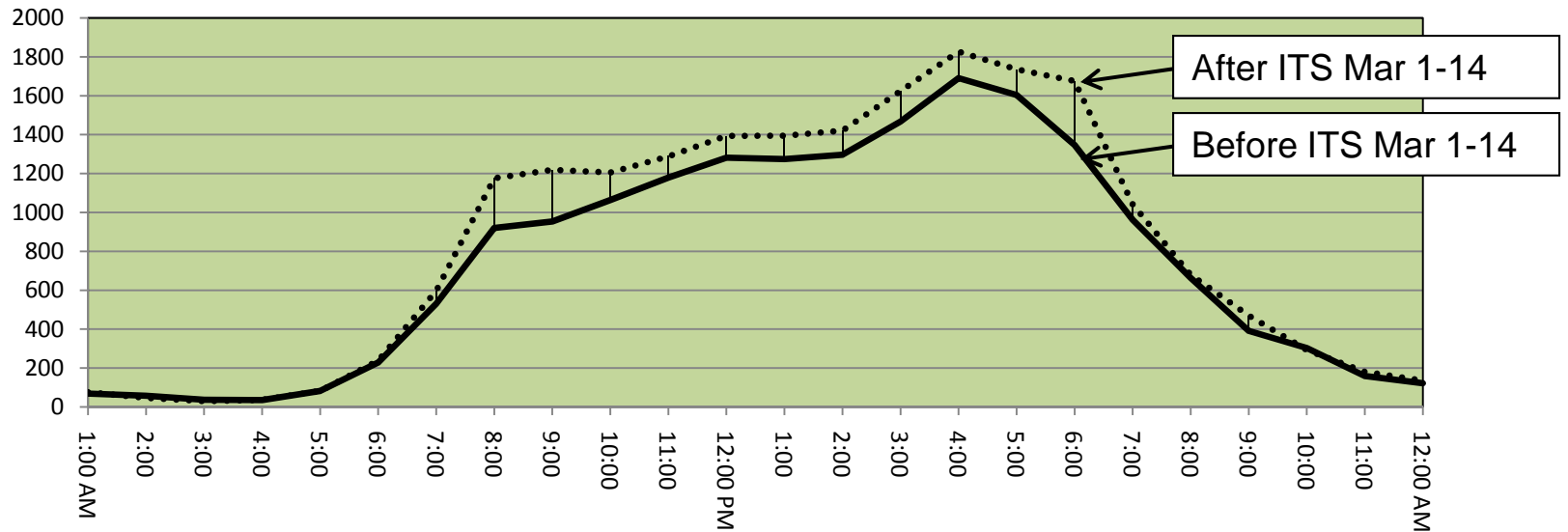


Results – Traffic Diversion

SAGAMORE BRIDGE HOURLY TRAFFIC VARIATION - WEEKEND



BOURNE BRIDGE HOURLY TRAFFIC VARIATION - WEEKEND



- Performance Based Design Build
 - Work-zone traffic performance is being pushed by FHWA in Subpart J
 - Improve traffic control designs through analysis of the data from previous jobs.
- Flexible Lane Closure Windows
 - Negotiate lane closure timings with current data
 - Give DOT engineers confidence through data availability and queue warning systems
- Improved Traffic Reliability
 - Reduced traffic incidents equates to reduced time lost on the job
- Reduced Speed Enforcement Budgets
 - Using speed data as a strategic tool can make the hours that a patrol car spends on the work-site more effective

