

A Real - Time Weather Responsive System

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We present a prototype of a real-time weather-responsive traffic signal control system with the intent to improve the efficiency and safety of traffic signal operations during inclement weather. This system receives and uses weather information from FHWA's Clarus system to adapt signal timing in response to inclement weather. The Clarus is an FHWA R&D initiative that provides near real-time atmospheric and pavement observations from participating states' environmental sensor stations (ESS). The proposed system operates and achieves its potential using current traffic controller and controller cabinet technologies and is compatible with future applications within the Federal Highway Administration's IntelliDrive initiative. Computer driven algorithms implement traffic signal control decisions using Clarus data. The software design incorporates self diagnostic techniques for fault detection and recovery to maximize security and minimize cost.