# Monitoring Mobility: Utilizing Weather & Traffic Data

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# Presentation Overview

System Overview

System Operations

Data Archiving and Analysis

Data Uses

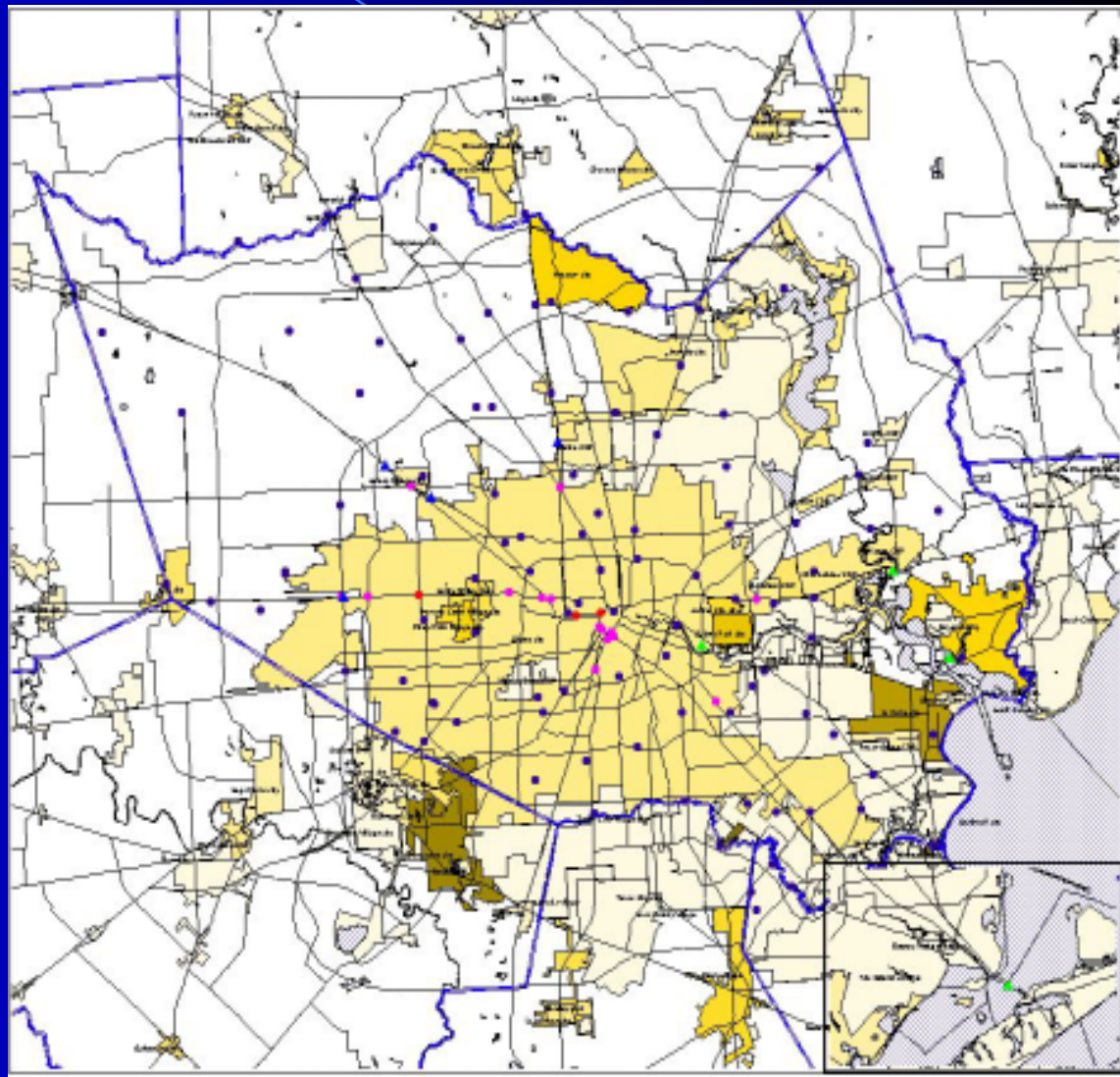
The Future

Challenges

Tropical Storm Allison

# The System

- 27 TxDOT Stations
- 118 Harris County OEM Stations
- 342 Sensors



# TxDOT Environmental Monitoring System

- 19 Roadway Flood Sensors with Rain Gauges
- 4 Ice Sensors on Bridges
- 4 Full Weather Stations on Bridges
- 1 Stream Velocity Gauge for U.S. Coast Guard to Halt Shipping

# System Operations and Event Notification

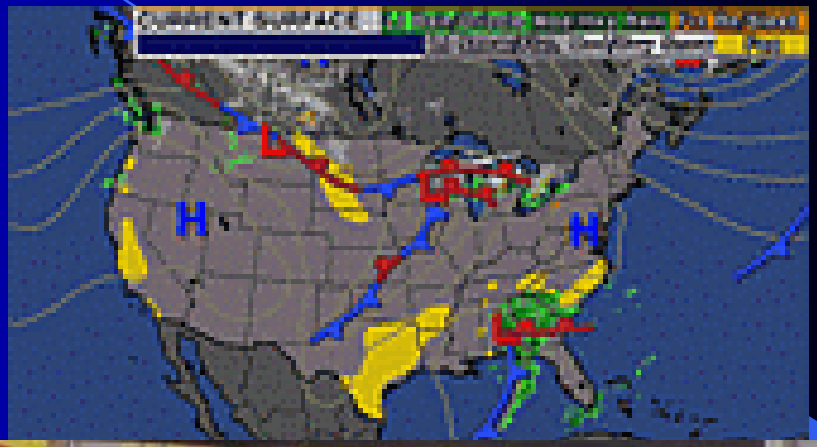
- Text Pages
- Email Alert
- Active Warning Signs
- Verification
- Record Deficiencies
- Notification of TxDOT Staff, Agency Partners, and the Public Through the Public Information Officer

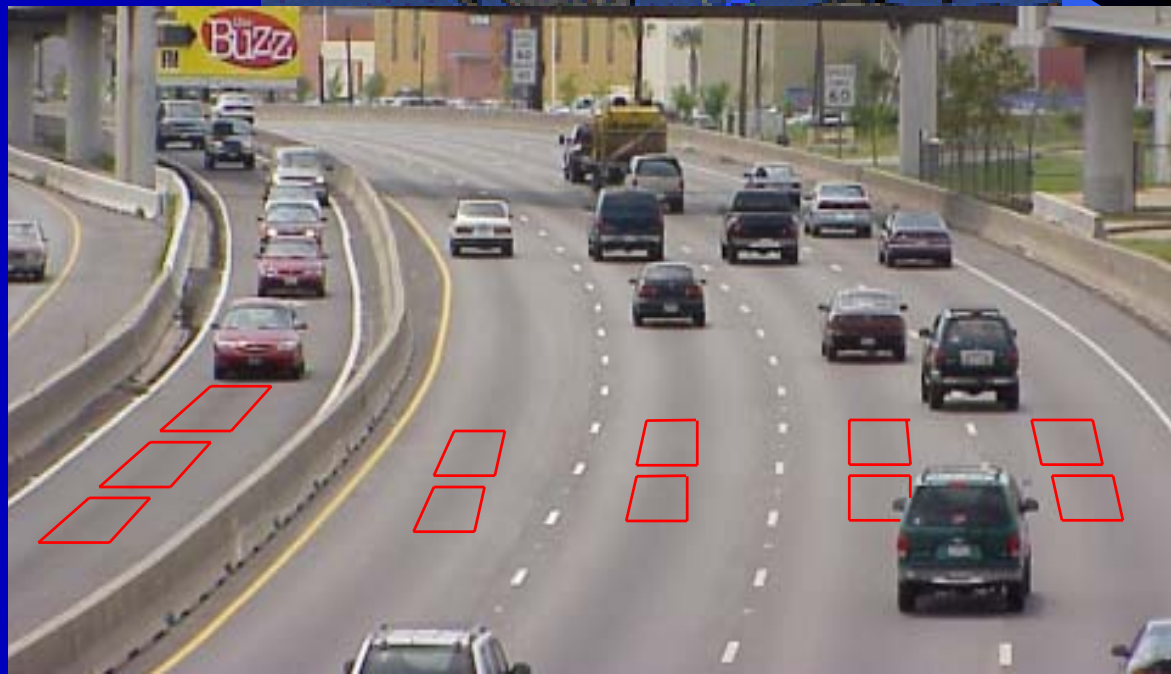
# Data Archiving

- TranStar Traffic Operations and Emergency Management Center
- Traffic and Environmental Data
- Real-Time Logging
- Post Processing of Archived Data

# Data Types

- Weather Data
  - Rainfall Rate
  - Rainfall Accumulation
  - Roadway Water Level
  - Air Temperature
  - Road Temperature
  - Wind Speed
  - Other
- Traffic Data
  - Volume
  - Speed
  - Occupancy



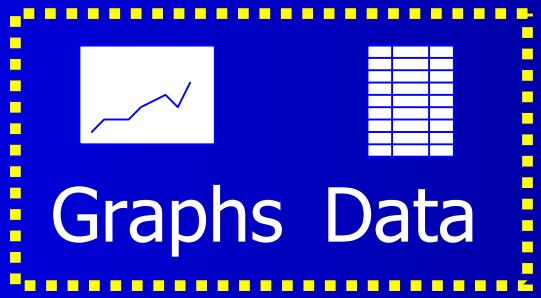



# Other Traffic Data Capabilities

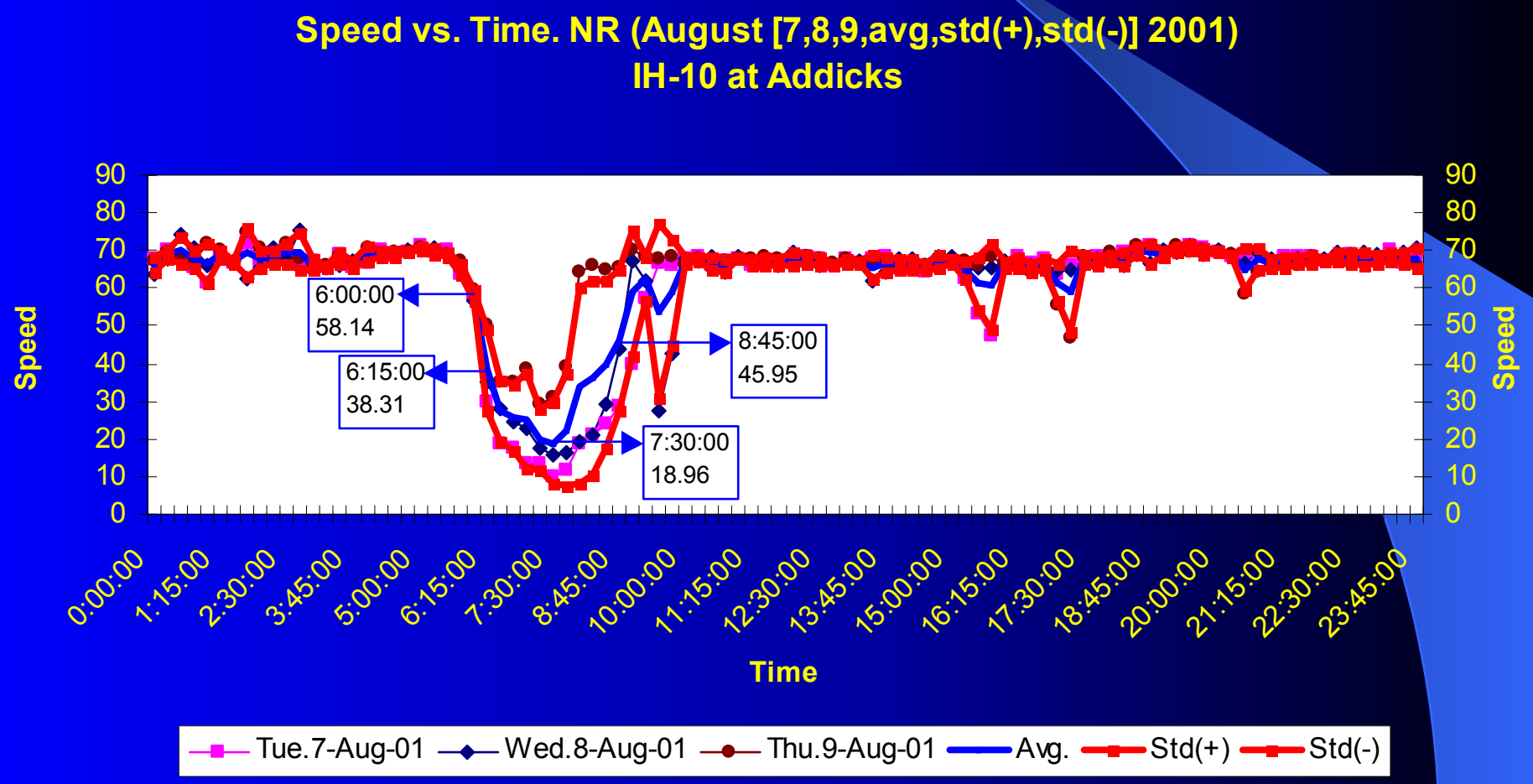
- 300 + Cameras
- Over 3,500 Loops
- 300 +AVI Segments
- 160 Miles Of Fiber
- 100 Dynamic Message Signs
- 24 Hour Operations

# Data Analysis

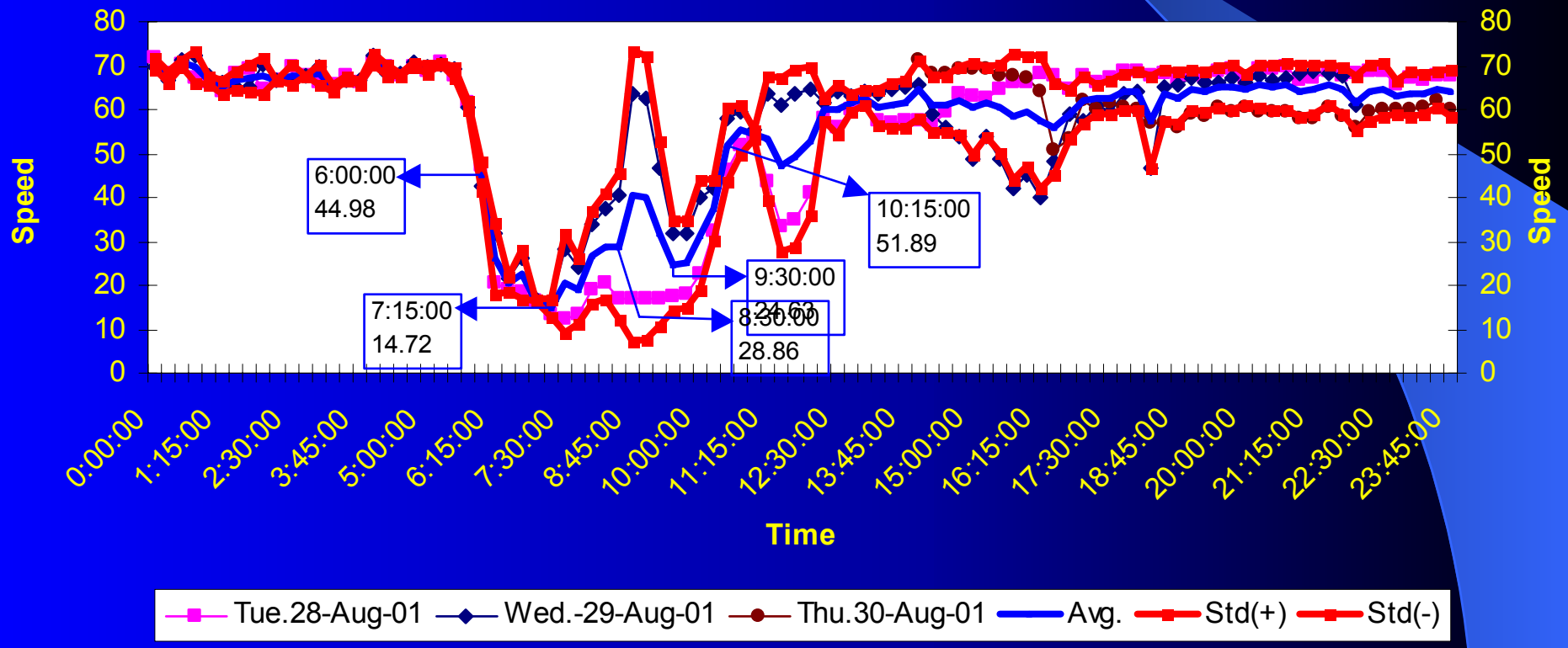
- Data Screening
- Traffic Aggregation
- Comparisons
  - Tables
  - Graphs



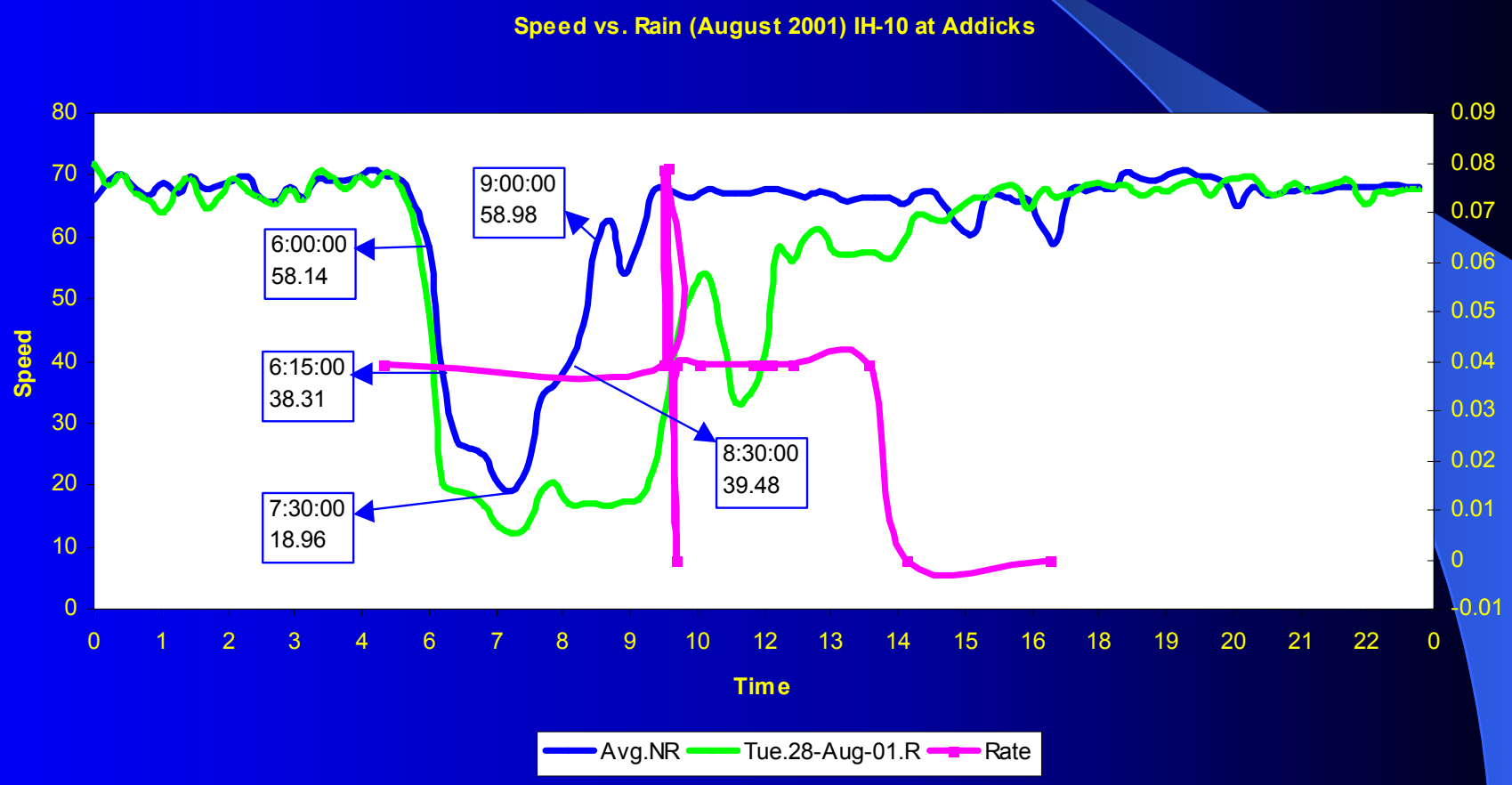
# Traffic No Rain



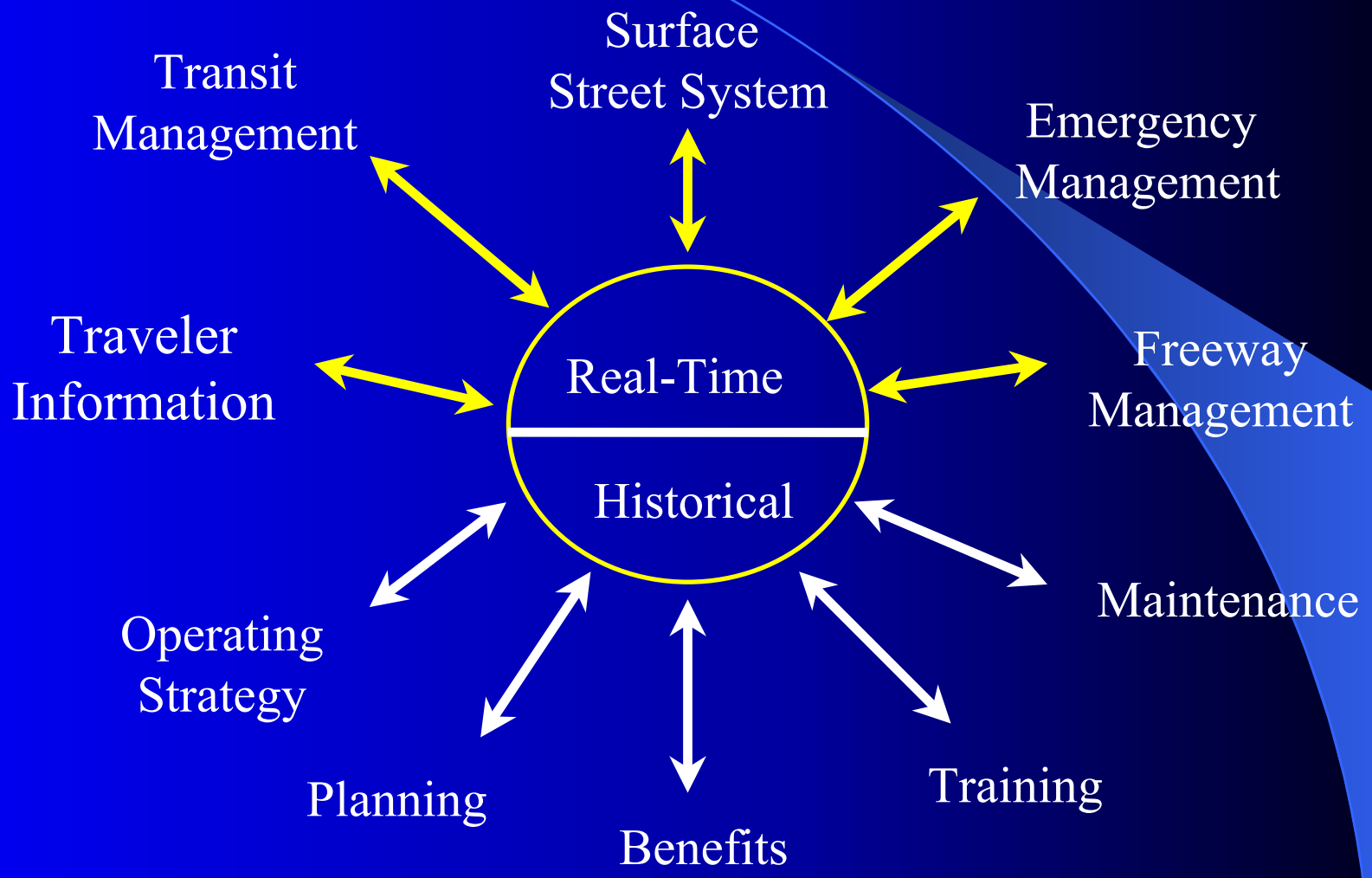
# Traffic with Rain



# Typical Freeway Segment



# Data Uses


Surface
Street System
Transit
Management
Emergency
Management
Traveler
Information
Real-Time
Historical
Freeway
Management
Maintenance
Operating
Strategy
Planning
Benefits
Training

# The Future

Future Expansion
11 New Sites

Web Based Integration

Operations
Plan

Automation

Training

# Challenges

- Evolving System
- Institutional Issues
  - Support for Operations and Maintenance Staff
  - Access to the System
- Inter-Agency Issues
  - Consensus Building and Priorities of Many Different Agencies
- Scheduled and Unscheduled Maintenance
- Continual Preparedness and Training
- Archiving Issues

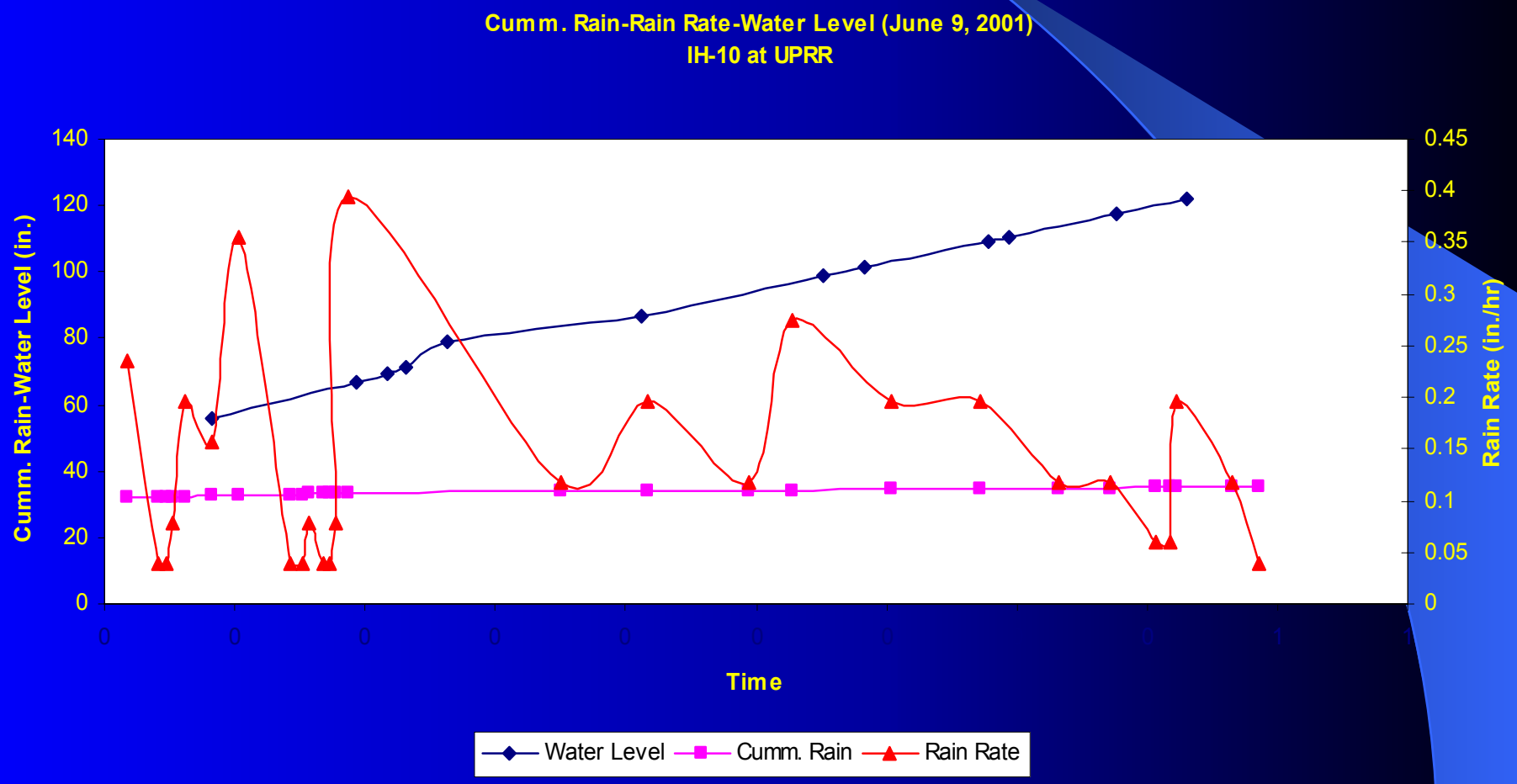
# Tropical Storm Allison

# I-10 @ IH 610
# During Tropical Storm Allison

Copyright Houston TranStar 6/09/2001 7:38 AM

Copyright Houston TranStar 6/09/2001 12:10 PM

# Tropical Storm Allison



# Questions ?