

NEW YORK STATE THRUWAY AUTHORITY Traffic Data System

Designed for Future Demands

New York State Thruway Authority



Department of Planning Services
Office of Transportation Statistics

About the NYSTA

- 641 Mile Toll Road System – Longest in the World
- Opened 1954, includes I-90, I-87, I-84 & 3# interstates
- Largely Self Funding (2002 Toll Related: \$570M, \$39M Fed Aid)
- Experts with Toll Collection Issues/ Innovation/ Expectations



- Major Trade Route from Canada & USA Points West and East Coast
- Limited “Congestion Pricing” at Tappan Zee Bridge (Bridge Toll)

Tolls & NYSTA

- Congestion/Value Pricing/"Whatever You Label It" are TOLLS!!!

TOLLS = RESPONSIBILITY

NEW DATA CUSTOMERS

- Finance/Auditors

- Pricing Model

"When Money Comes into the House, Friendship Goes out the Door"

TRAFFIC DATA COLLECTION CHALLENGES

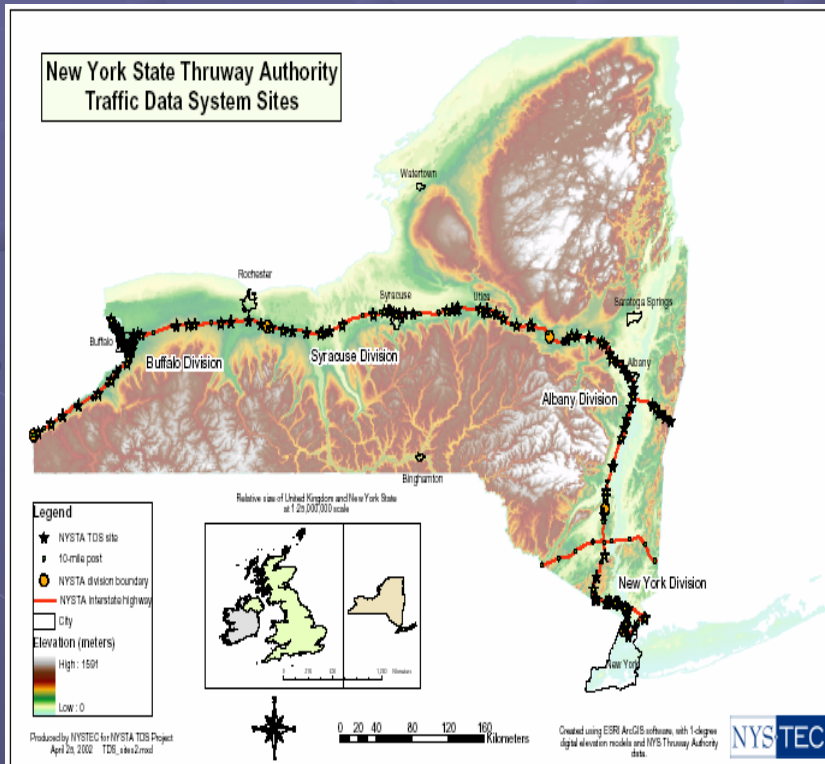
- **Accuracy – Satisfy Auditor’s Requirements**
- **Accountability – Data to Maintain Public Trust that \$ = “There”**
- **Responsiveness – Provide Finance & Model Required Data**
- **Reliability – NO “HOLES” in the Data**
(There is Serious Money and Policy Riding on This!!!!!!)
- **Timeliness – Provide Product when Required, no “if and or buts”**

**CAN YOUR MONITORING PROGRAM
SATISFY FINANCIAL AUDITORS &
PRICING MODELS ???**



ANTICIPATE YOUR CUSTOMER'S NEEDS

- Marry ITS & Planning Data Collection
- Be Demanding – Demand Data Accuracy
- Partner – Work with IT to Develop Data & Com Structure



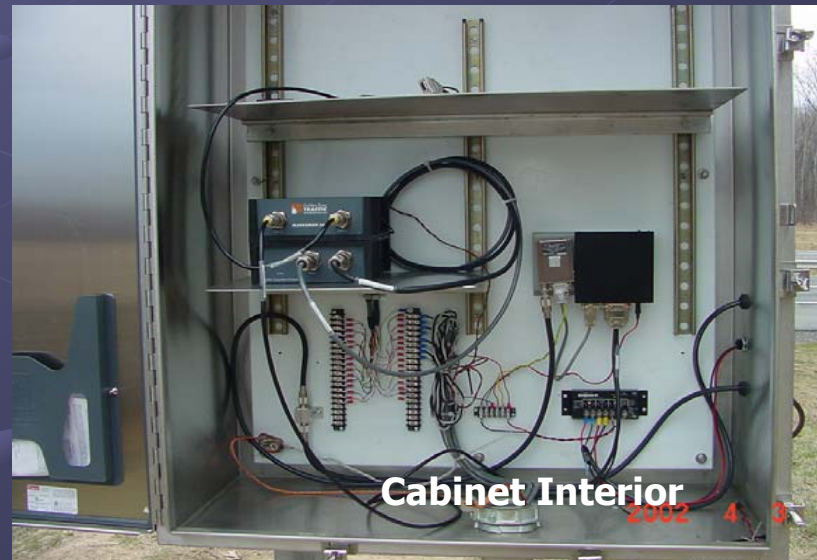
NYSTA

- 163 Functioning Monitoring Stations
- 30 Planned, Nearly Every Segment Instrumented!
- “Real Time Ready,” No Data Quality Sacrifice
- Looking Towards Future Decision Support Demands
- Employs ADUS Concepts

NYSTA TDS Monitoring Stations

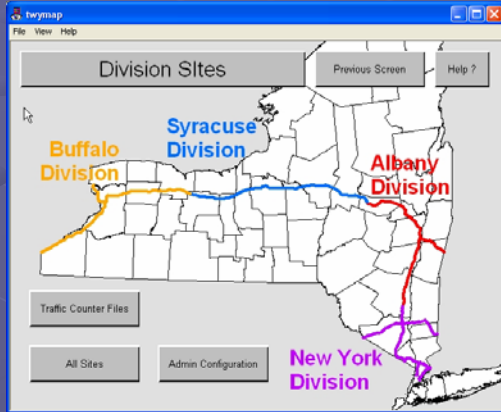
Features

- 90 % Solar Powered / 10% AC
- 100 % Cellular Communications
- “Real Time” Ready
- ITS Deployment Platform

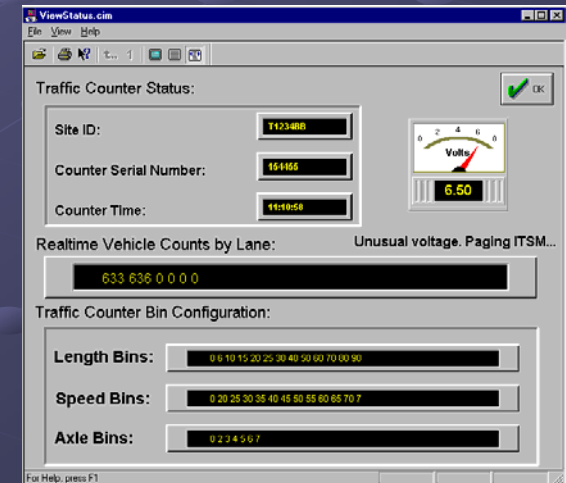
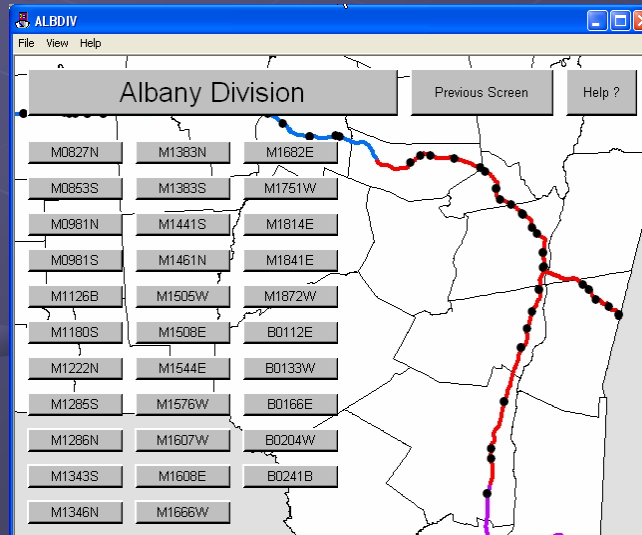


Establish Desktop Control of Sites Employs Supervisory Control and Data Acquisition (SCADA) Concepts

Some Software Screen Shots



Drill Down to Site



Select Site & Assume Control

Server Hosted Database

Database Layout



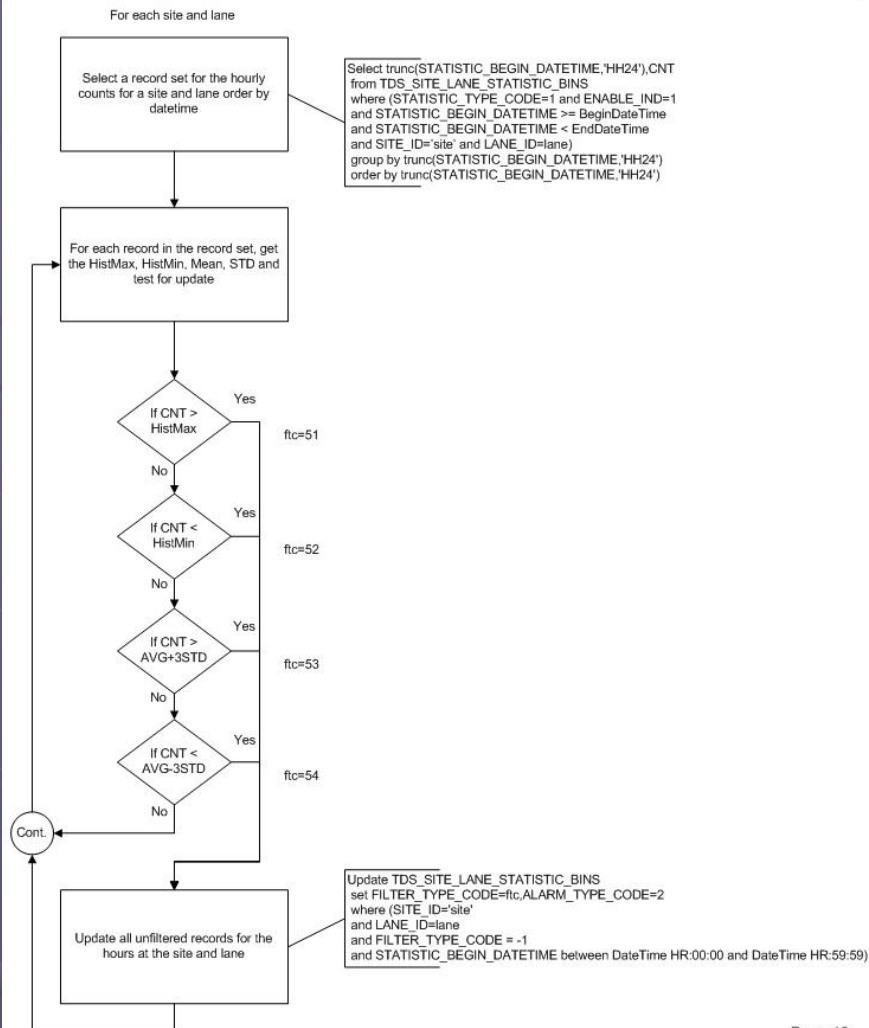
Features

- Oracle Based
- Relational Database
- Holiday & Event Tags
- “Bad” Count Tags
- “Suspect” Count Tags
- Per Lane Detail
- “Hooks” to External Database
- Speed/Length/F-Class BINS

Data Processing QA/QC CHECKS

TDS Filter #51 through #54

Friday, June 13, 2003



NOTE: The SQL is pseudo code and is intended as an informational guide.

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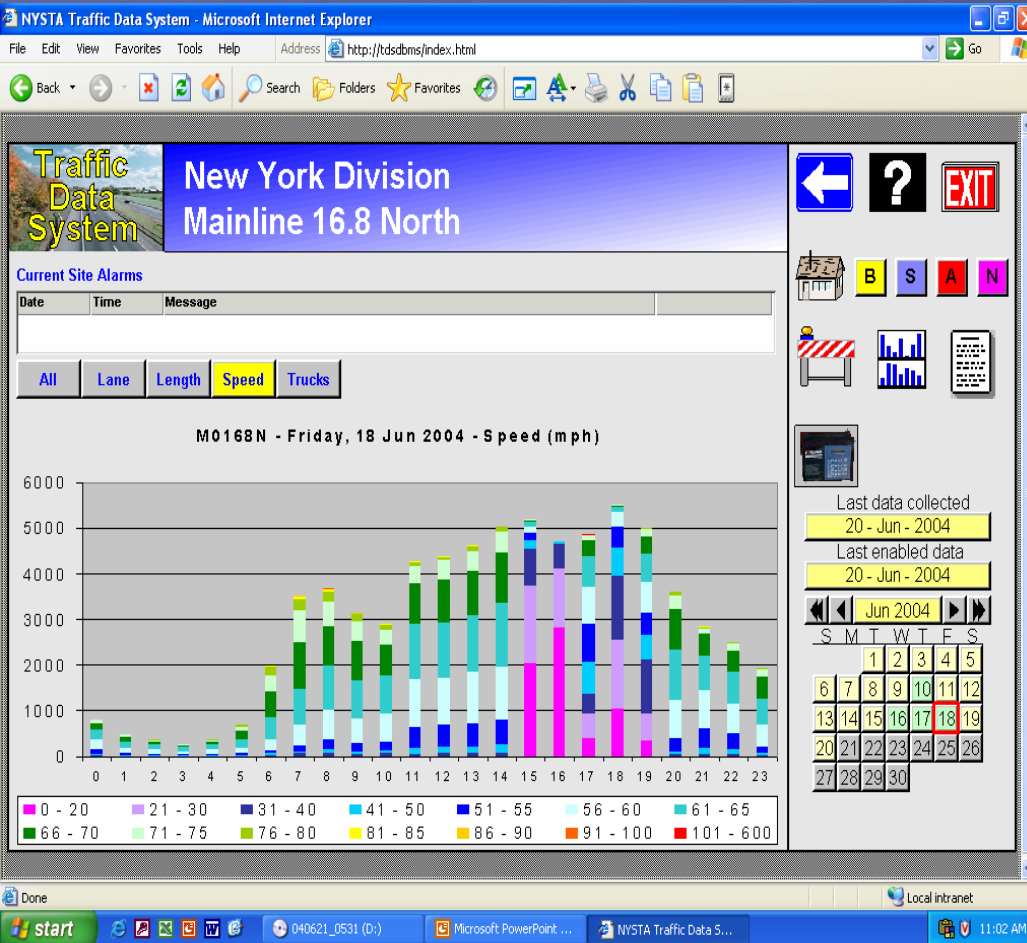
Features

- Seven “Automatic” Errors
- Eleven “Suspect” Reporting
- Daily E-Mail Summary of QA/QC Check Outcome
- Suspect Data Review Interface
- Holiday/Event ID Interface

Example QA/QC Check Flowchart

Reporting

Intranet Screen Shot

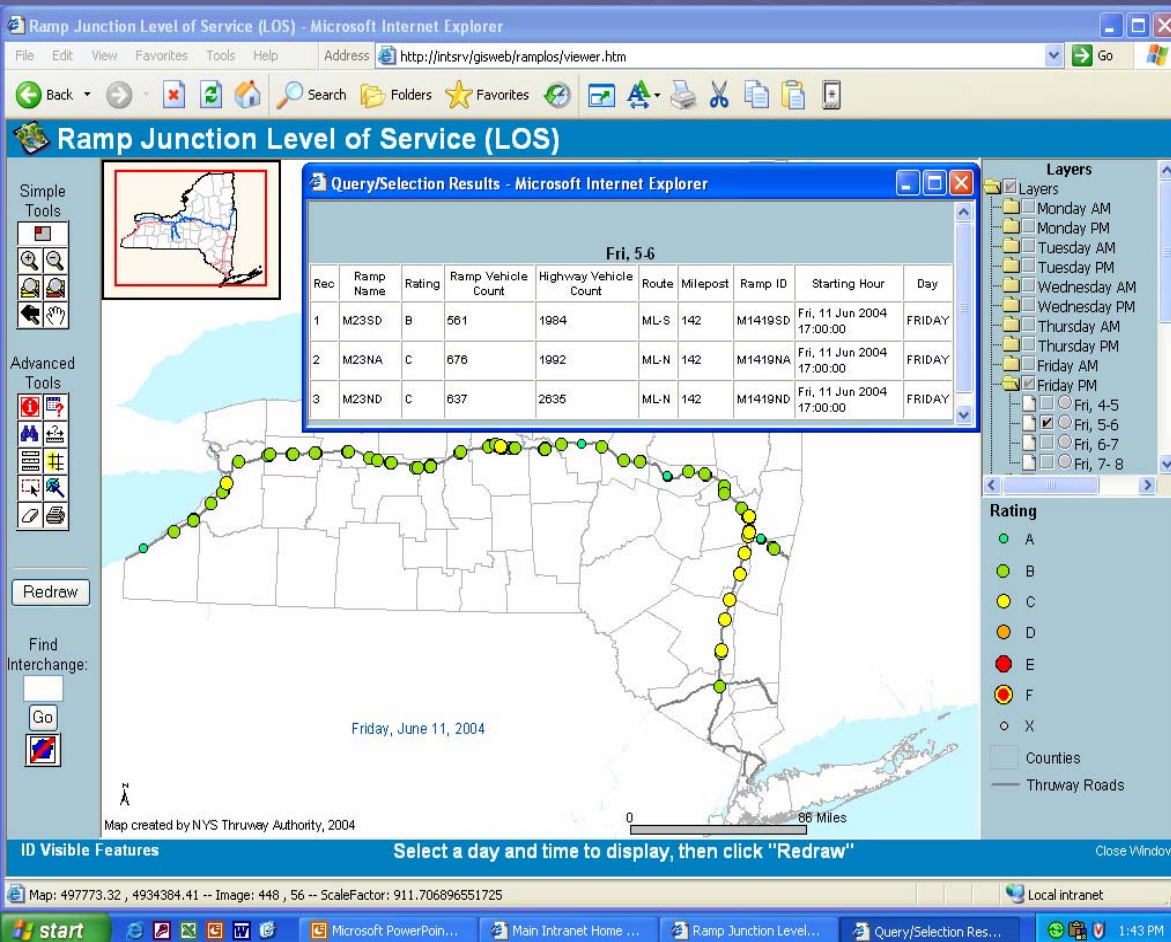


Features

- Browser Based
- Counts/Length/Speed/% Trucks
- 1, 7, 31 Day Self E-Mail Spreadsheets
- Next Day Availability
- 3 Year Full Detail On Line
- ID QA/QC Check Outcome
- Interface w/Toll Collection Data
- Counter Status & Configuration
- "Canned" Summary Reports

Metrics/Analysis

Intranet HCM LOS Screen Shot



HCS LOS Features

- Browser/Arcinfo Based
- Underlying SAS HCM Software Implementation
- Employs Tolls, TDS Counts
- Hourly LOS on 176 Ramps
- All LOS Metrics Archived

Coming Soon/Underway

- Hourly Link Level LOS
- Speed Violation & Congestion Indices
- System Reliability Indices

TDS Cost & Timeframe

- Fully Operational Q1 2004, Begun 2001
- Total Cost: \$3.1 M (Reused existing loops)
- In House Design, In House Software, Contracted Physical Construction

Improving Reliability

Reason: Construction Removes Loops, Lessening Reliability



Non-intrusive Detector Test

Challenges

- Retire Pavement Intrusive Technology
- No Departure from Loop Accuracy
- Learn New Technology Pros/Cons
- “Marry” into Existing TDS Structure

How Does This Relate to Congestion Pricing?

- **Audit and Tolling Models Require Accurate Metrics – Maintains Accountability & Trust**
- **Timely - Web Distribution, User Gets When Wanted**
- **Responsive – Metrics Support Pricing and Other Analytical Needs**
- **Reliable – Automated System Built with Low Downtime, Looking for Increased Future Reliability**

NEED TO KNOW MORE?

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