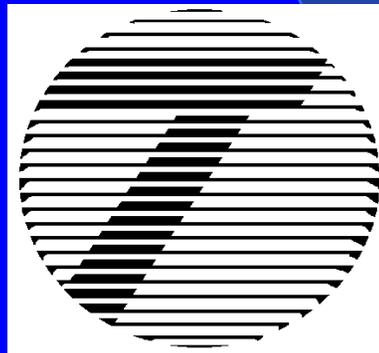


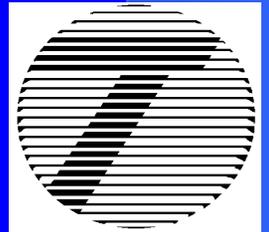
Traffic Monitoring System Statewide Expansion

Traffic Monitoring Unit
Highway Data Services Bureau
NYSDOT
NATMEC 2002



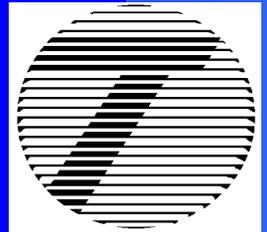
Why Does NYSDOT Contract For Data?

- Data needs are growing
- Public sector staffs are shrinking



“Furnish, Install and Maintain Permanent Traffic Count Sites”

- Continuous count system expansion including construction and maintenance of sites
- Three contractors in three ‘Zones’



Contract Zones

Zone 1 – International Road Dynamics

- Regions 1, 2, 7, 8, 9

Zone 2 – Planert Utility

- Regions 3, 4, 5, 6

Zone 3 – ERES Consultants

- Regions 8, 10, 11



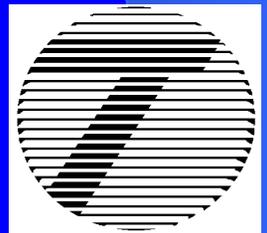
Continuous Count System Prior To Expansion

- 75 Continuous Count (CC) Sites
- 19 Automatic Vehicle Classification (AVC) Sites
- 6 Weight-In-Motion (WIM) sites



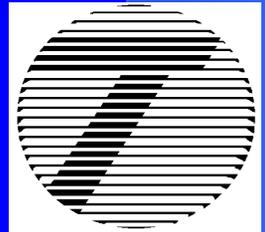
Previous System Problems

- Poorly placed sites
 - Historically “slipped” into capital program projects
 - Not necessarily the best location for the system
- Poor quality of construction
 - Last priority on larger projects
 - Inspections not conducted
- Lack of maintenance staff
 - Public sector “downsizing”



Objectives of the Expansion

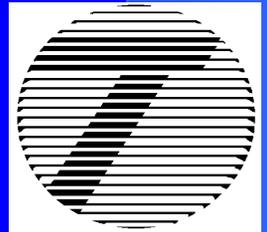
- Increase coverage of the Interstate System (including volume, class, and speed)
- Improve coverage across NYSDOT Regions to allow differentiation and identify trends
- Improve coverage on the Federal Aid System



Expansion – Phase I

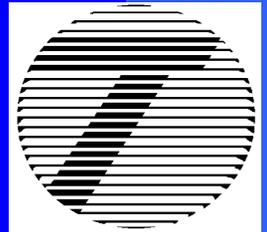
Installation of 57 New Sites

- Contractor paid for installation or upgrade of sites
- Two year warranty on sites
- Contractor paid “per day of data” based on the performance of each site



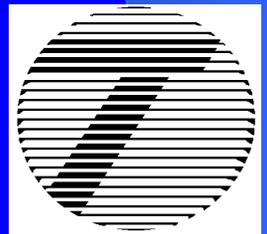
Expansion – Phase I

- Contractor submitted standard configuration drawings for all types of sites and lane configurations IAW NYSDOT specs
- “As built” drawings and sensor test results submitted as part of acceptance process



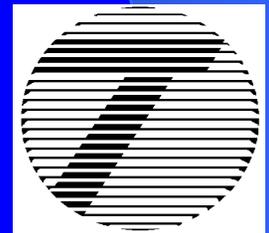
Expansion – Phase I

- Joint site visits conducted to assess baseline condition of existing sites and plan construction of new sites
- Material and equipment submitted to NYSDOT for acceptance testing prior to installation



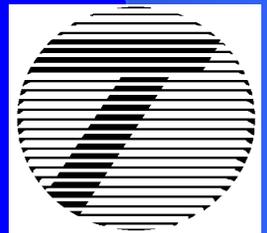
Expansion – Phase II & III

- II – Repair and Maintenance of 94 Existing Sites
- III – Repair and Maintenance of Sites Installed Under Phase I After Expiration of the Warranty Period



Expansion – Phase II & III

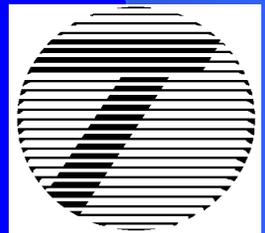
- NYSDOT retains ownership of permanently fixed equipment
- NYSDOT gains ownership of upgraded equipment as technology changes
- Contractor paid a maintenance fee plus “per day of data”
- Right to remove or add sites to the system at any time



Per Day of Data

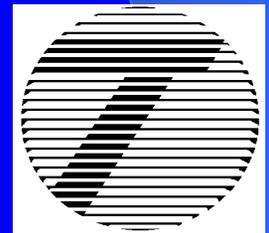
“The Carrot”

- Price for “per day of data” is a firm fixed price for each day for which 24 hours (midnight to midnight) of acceptable data is received via telemetry by NYSDOT from each site



Maintenance Fee

- Bidders proposed an annual maintenance price per site
- Cost of all parts and labor for one year as well as two site inspection/maintenance visits per year
- Annual maintenance price per site cannot exceed 20 percent of the total of the annual maintenance price per site plus the annual total price for “per day of data”



Liquidated Damages

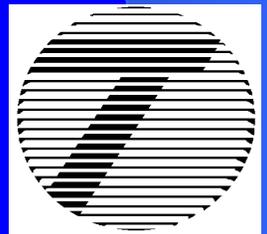
“The Stick”

- Contractor must achieve 95% operational readiness within their Zone or liquidated damages are assessed
- Liquidated damages assessed if site is down (not collecting data) for more than seven consecutive days



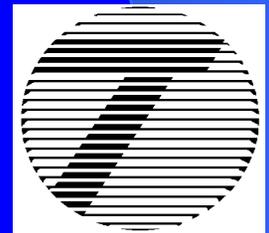
Site Acceptance

- Construction inspections for compliance with NYSDOT specs and special provisions
- Final inspection
- Collect and transmit via telemetry accurate volume, speed and classification data for at least one continuous 30 day period



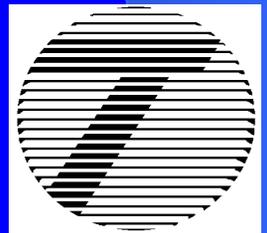
Equipment

- IRD TCC-540, Peek 241, Peek ADR 2000 and Peek ADR 3000 ATRs
- Dataremote CDS-8800/5 cellular modems
- Trafmate digital pagers
- Measurement Specialties Roadtrax BL axle sensors
- Powered by Siemens 36 or 50 watt solar modules and two 100 Ah deep cycle batteries



Software

- Sites polled on 2-3 day cycle with Diamond Edge Technology's Telecom v. 3.74 and Trafman v. 5.10 supported by Peek TDP v. 3.32
- Trafman includes automatic data integrity checks
- Polling report produced by Trafman and distributed to contractors after each poll



Phase I – New Construction

Region	New Sites	Region	New Sites
1	1	6	6
2	5	7	5
3	9	8	7
4	7	9	9
5	7	10	1



The Results ...





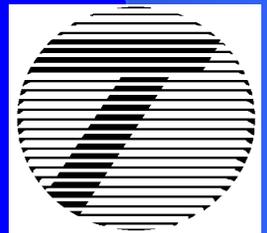






Additional Sites

- Provisions in contract for additional sites to be built at a later date at firm fixed prices using Over and Above Requirements
- Allows flexibility to construct site that meets specific needs
- Site construction no longer must be “slipped into” Capital Program construction
- Two year warranty on sites

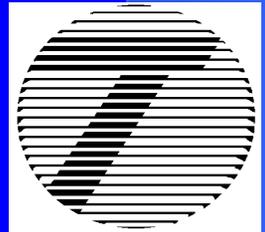


Upgraded Sites – FY 2001

Region	Location	Upgrade
1	Rt. 4, RC 18	AVC-WIM
5	I-86, RC 52	CC (Class)
7	I-81, RC 73	AVC-WIM
8	I-84, RC 82	AVC-WIM
9	Rt. 17, RC 96	AVC-WIM
10	Rt. 25, RC 07	AVC-WIM
11	I-295, RC 05	AVC-WIM
	Five additional	AVC-WIM (T)

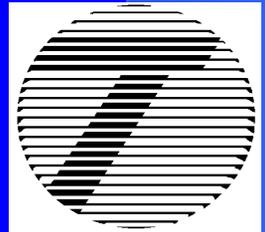
Benefits

- Routinely exceed 96%+ site readiness (average for all three zones)
- Rapid response for correction of problems to avoid liquidated damages and lost data payments
- Robust data set reviewed for accuracy at multiple levels



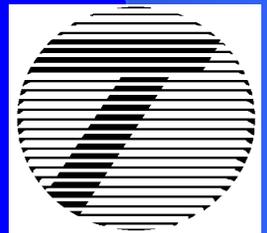
Costs

- Cost of “per day of data” ranges from \$5.50/day to \$30.83/day, zone and site type dependant
- Cost range for complete site installations:
 - \$34,000 for 2 lane, loop-piezo-loop (CC)
 - \$136,300 for 6 lane, loop-piezo-loop (CC)
 - Zone dependant



Lessons Learned

- Liquidated damages assessed for sites not constructed and accepted within X number of days from contract award date
- No data payments for data received after 10 days from the end of a calendar month
- Contractor must keep an established amount of spare parts and equipment in inventory



Lessons Learned

- Contractor must have Project Manager or field technician based in zone of responsibility
- Contractor must demonstrate as part of the contract award process, a fully operational proposed system to be installed in sites
- Mandatory monthly status report with updated schedule from Contractor's Project Manager



Questions ??

Thank you for your interest.

- NYSDOT Traffic Monitoring Unit

