



FDOT DISTRICT 4 ITS

District 4 Performance Measures Program and Their Uses

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FDOT District 4

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Cambridge Systematics

ITE District 5 Annual Meeting

April 4, 2006

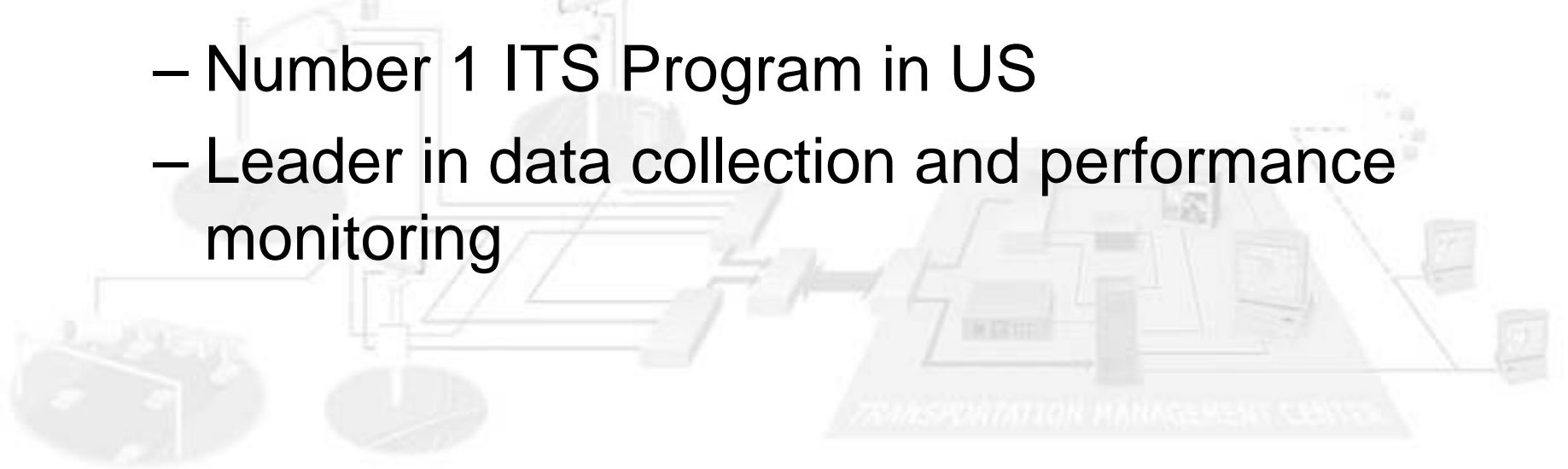


FDOT DISTRICT 4 ITS

District 4 Performance Measures Program

District 4 ITS Vision:

- Number 1 ITS Program in US
- Leader in data collection and performance monitoring





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District 4 Performance Measures Program

- Purpose: Measure outcomes and activities that are responsibilities of District Traffic Operations staff
- Measures are part of District's accountability assessment program
- Measures are tied to the District Traffic Operations Business Plan goals



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District 4 Performance Measures Program

- Outcome Measures
 - Congestion and Reliability
 - Incident Duration
 - Customer Satisfaction
- Benefit/Cost Measure





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District 4 Performance Measures Program

- Output Measures
 - System Coverage
 - Traffic Flow
 - Incident Management
 - System Performance
 - Traveler Information
- 60 measures tracked





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District 4 Performance Measures Program

- Functional requirements for data archive identified
- District's SMART software has been collecting incident data since January 2005 and reporting Incident Duration measures since July 2005



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District 4 Performance Measures Program

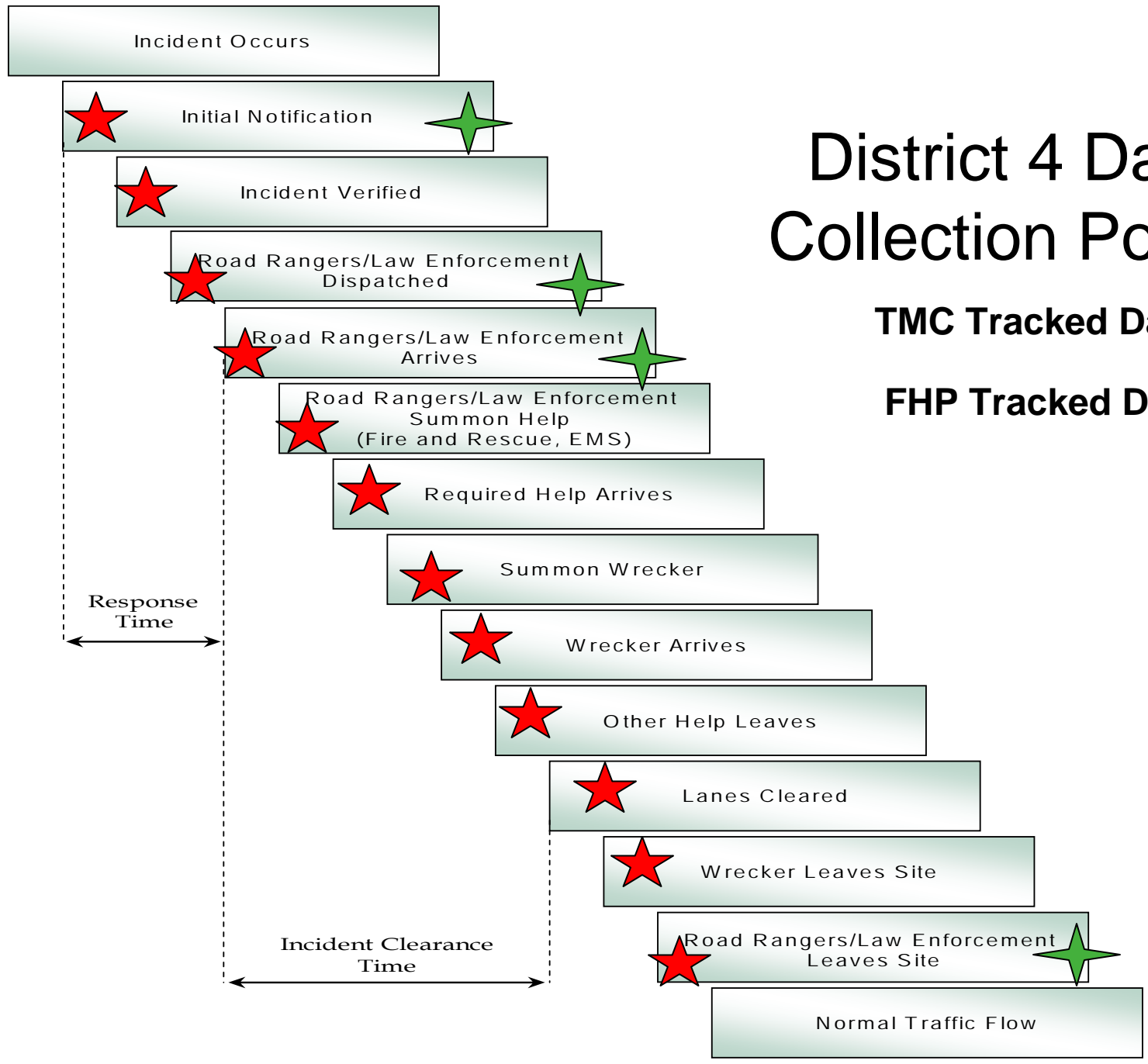
- Speed / travel time data to be collected and reported by SunGuide software, Fall 2006
- Weekly, monthly, quarterly and annual report formats
- Second Annual Report produced in January 2006



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Incident Duration Performance Measures

- SMART collects and automatically time stamps all incident timeline data points
- TMC operators note each FHP incident ID during incident
- FHP provides incident timeline data to TMC weekly
- Actual first incident notification time and agency is determined



District 4 Data Collection Points

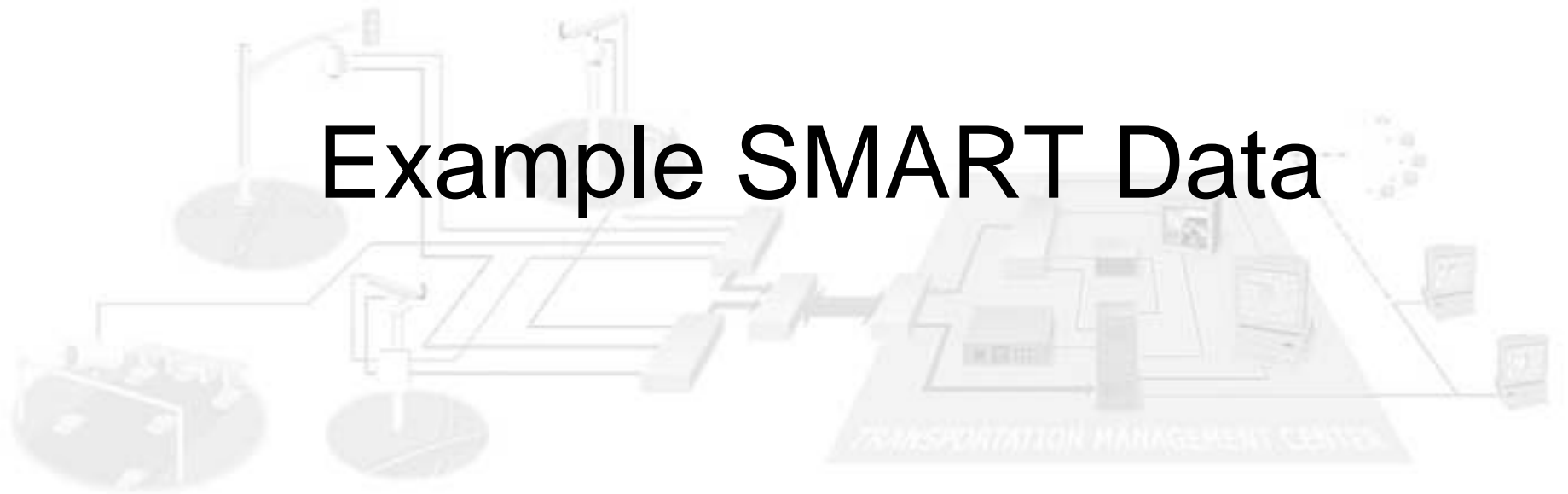
TMC Tracked Data ★

FHP Tracked Data ☆



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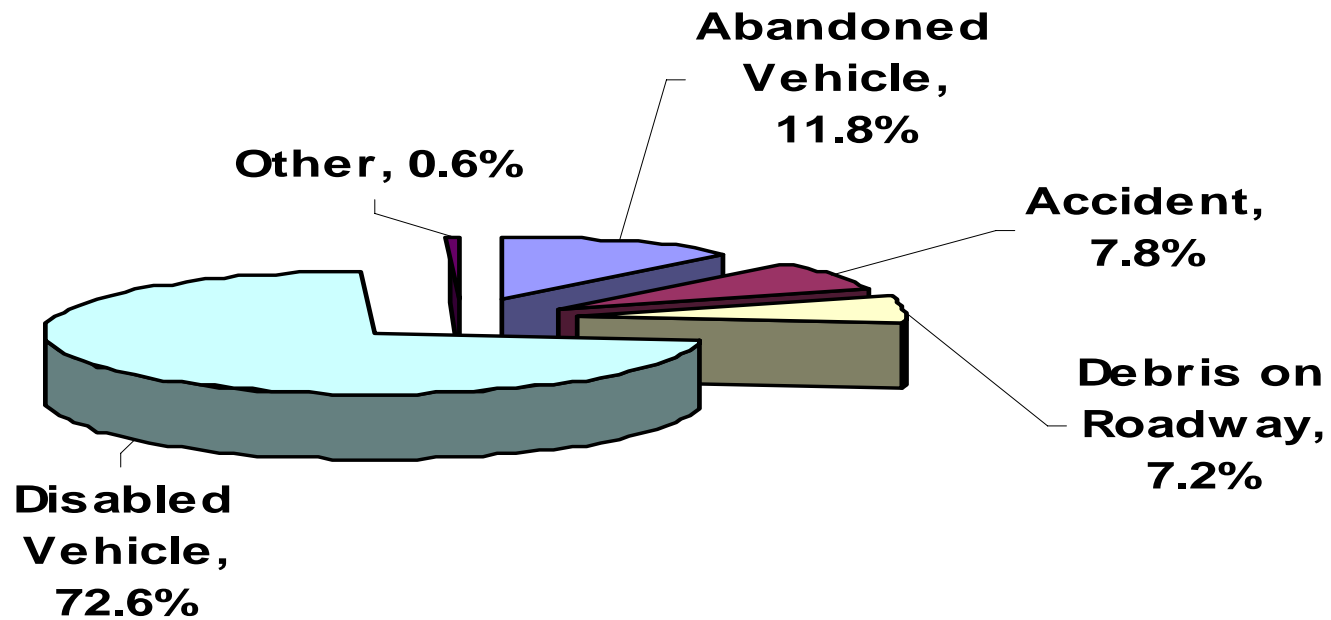
Example SMART Data





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2005 Events by Type



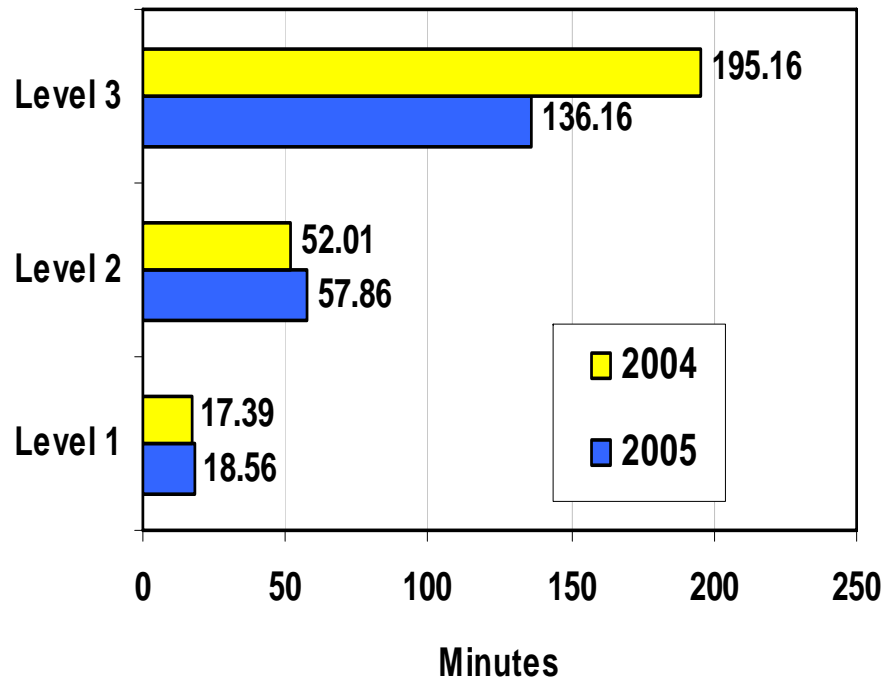
40552 Total Events

Figure 5 – 2005 Events by Type

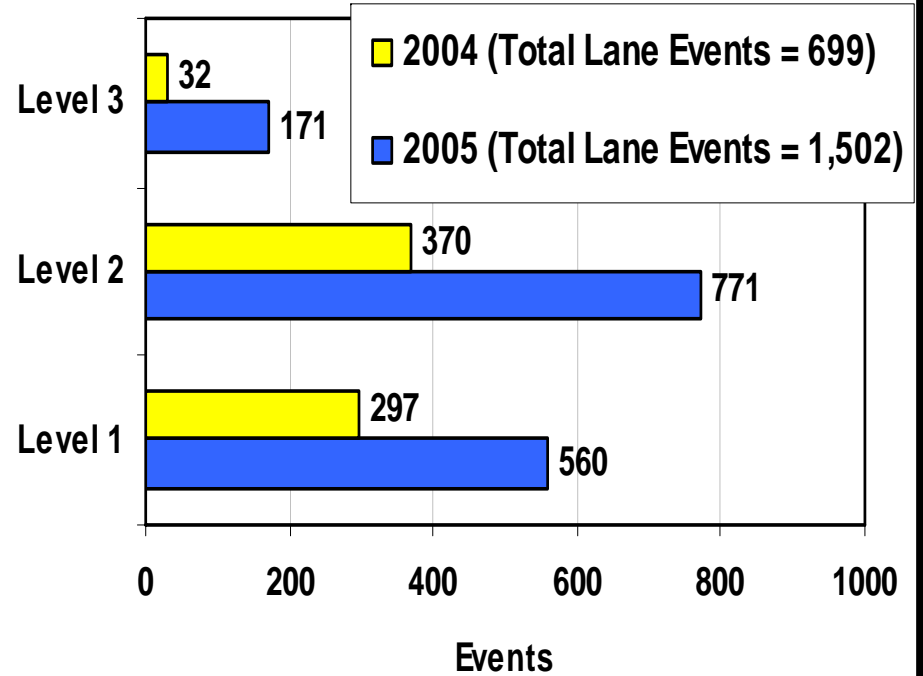


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Average Lane Blockage Times



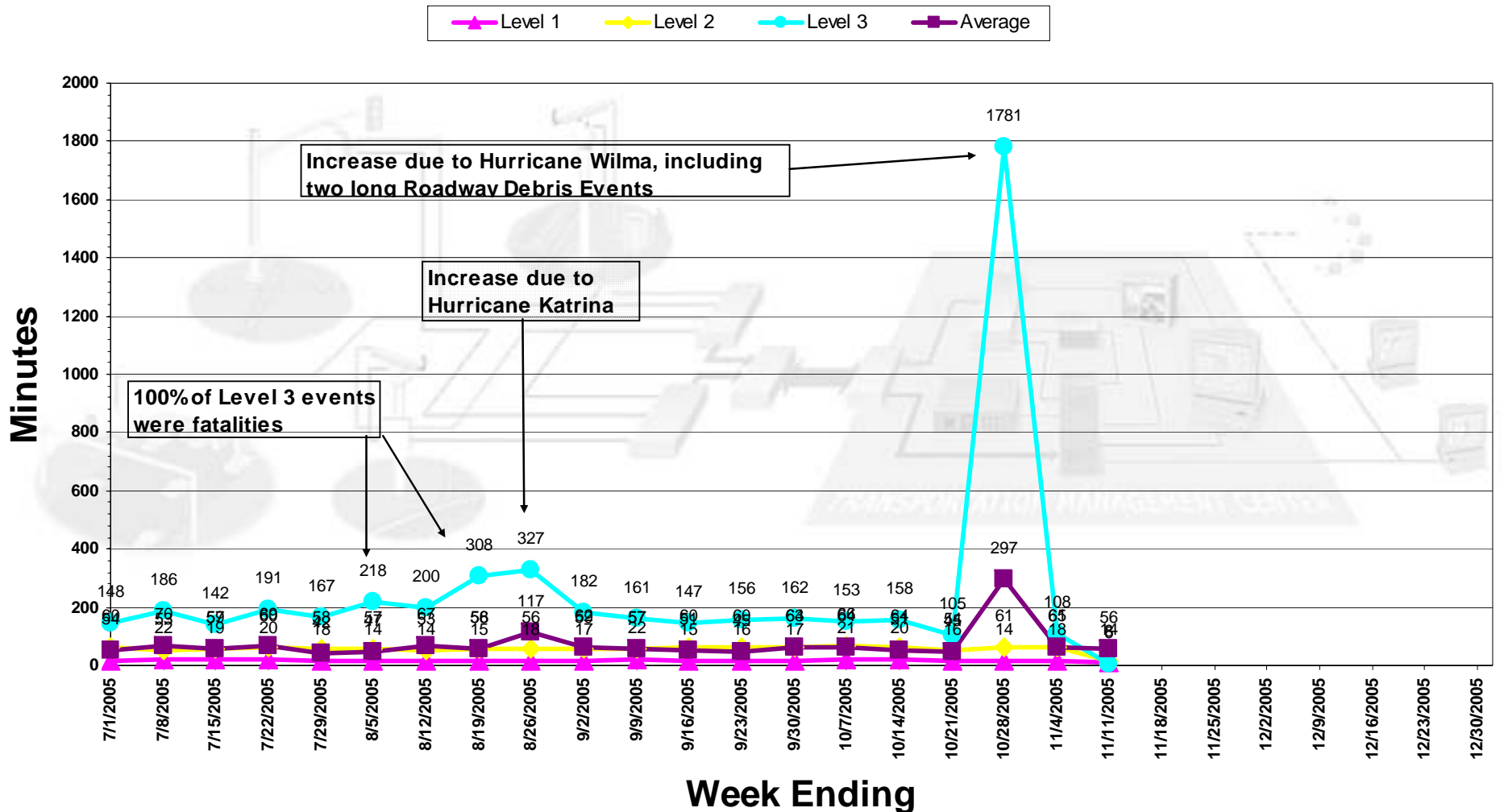
Total Lane Events by Level





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Incident Durations (Weekly Trend)



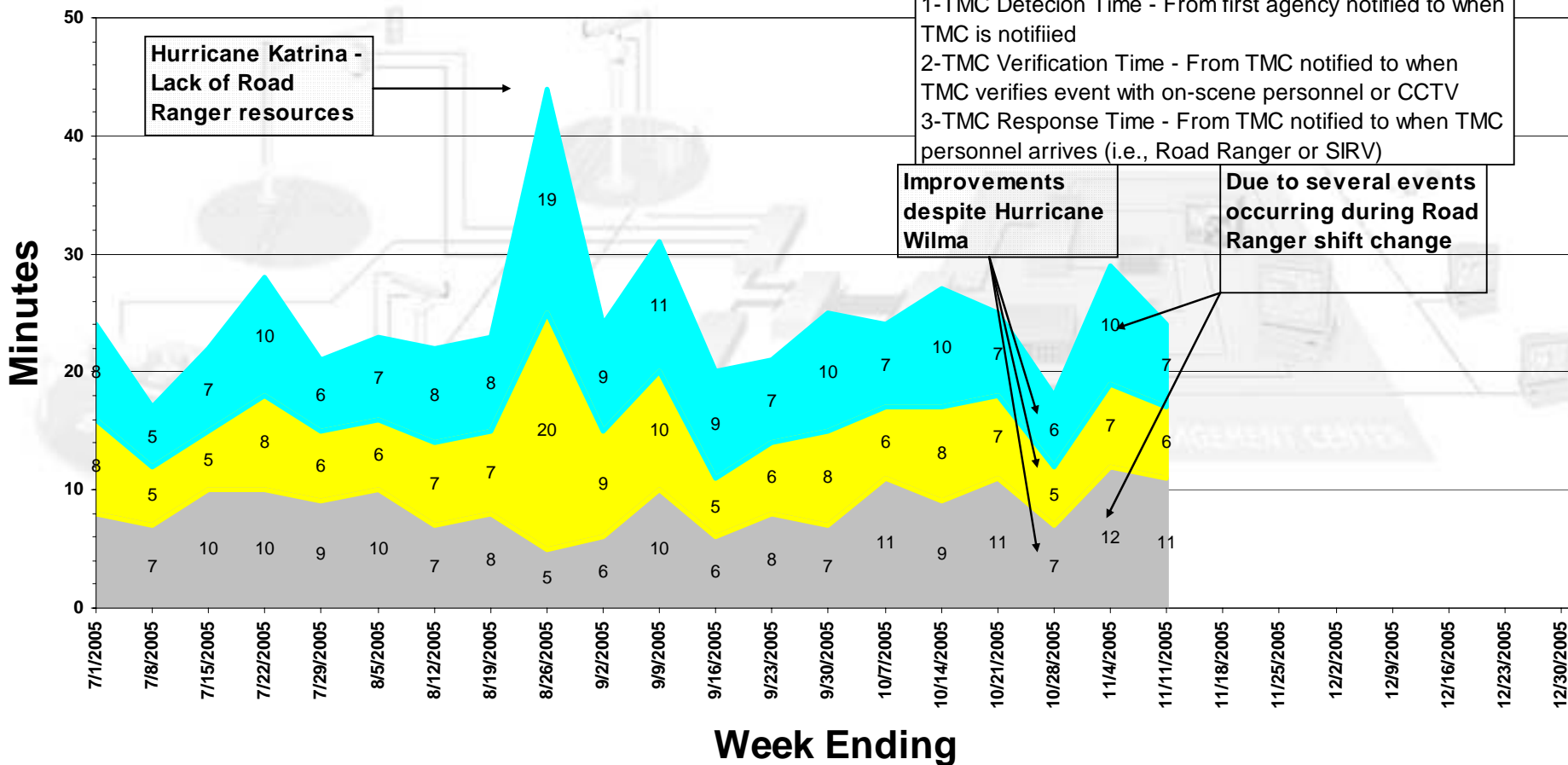


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TMC Durations (Weekly Trend)

TMC Detection Time
 TMC Verification Time
 TMC Response Time

Notes:
 1-TMC Detection Time - From first agency notified to when TMC is notified
 2-TMC Verification Time - From TMC notified to when TMC verifies event with on-scene personnel or CCTV
 3-TMC Response Time - From TMC notified to when TMC personnel arrives (i.e., Road Ranger or SIRV)



Hurricane Katrina - Lack of Road Ranger resources

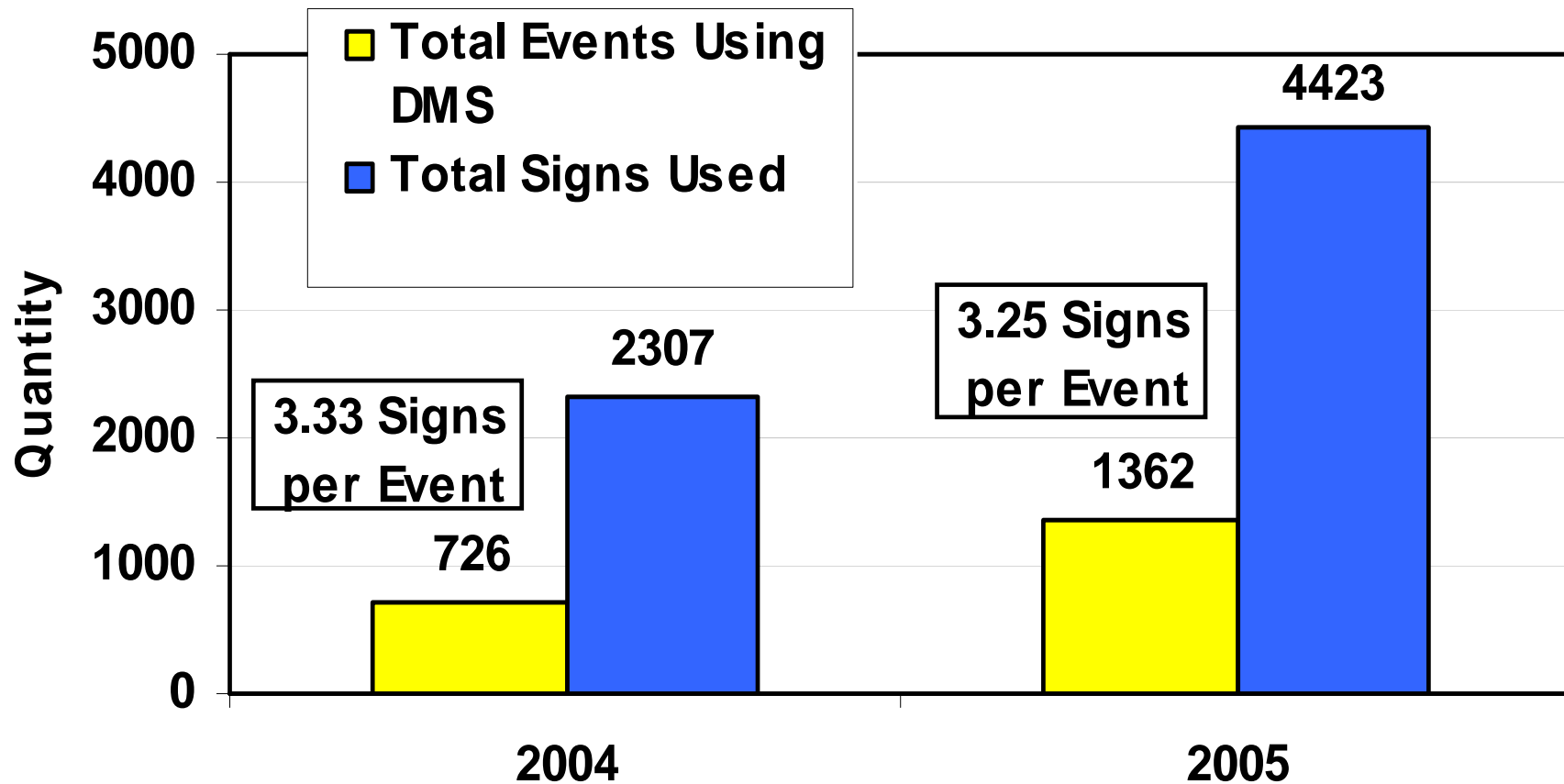
Improvements despite Hurricane Wilma

Due to several events occurring during Road Ranger shift change



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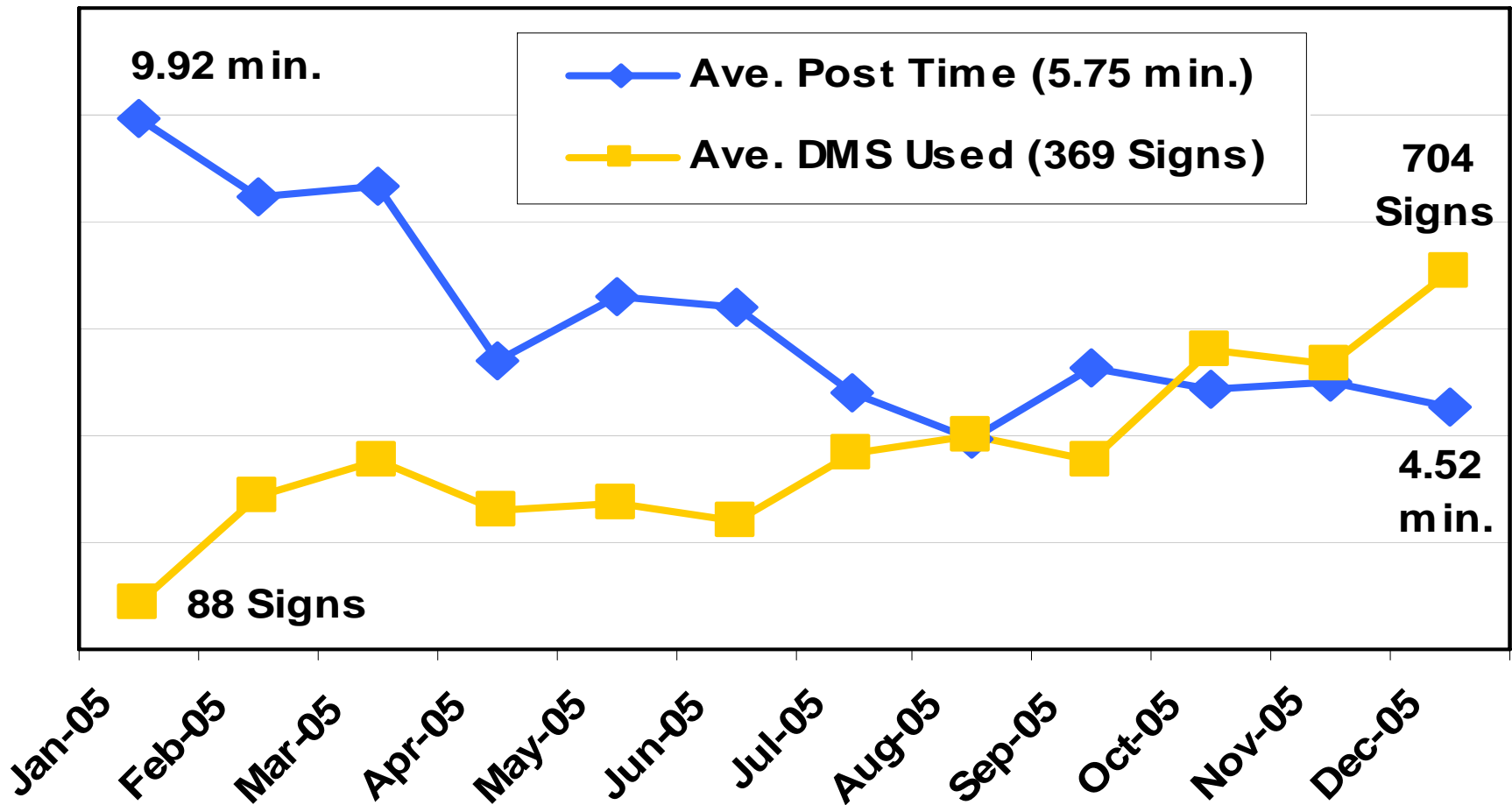
2005 Dynamic Message Sign (DMS) Data





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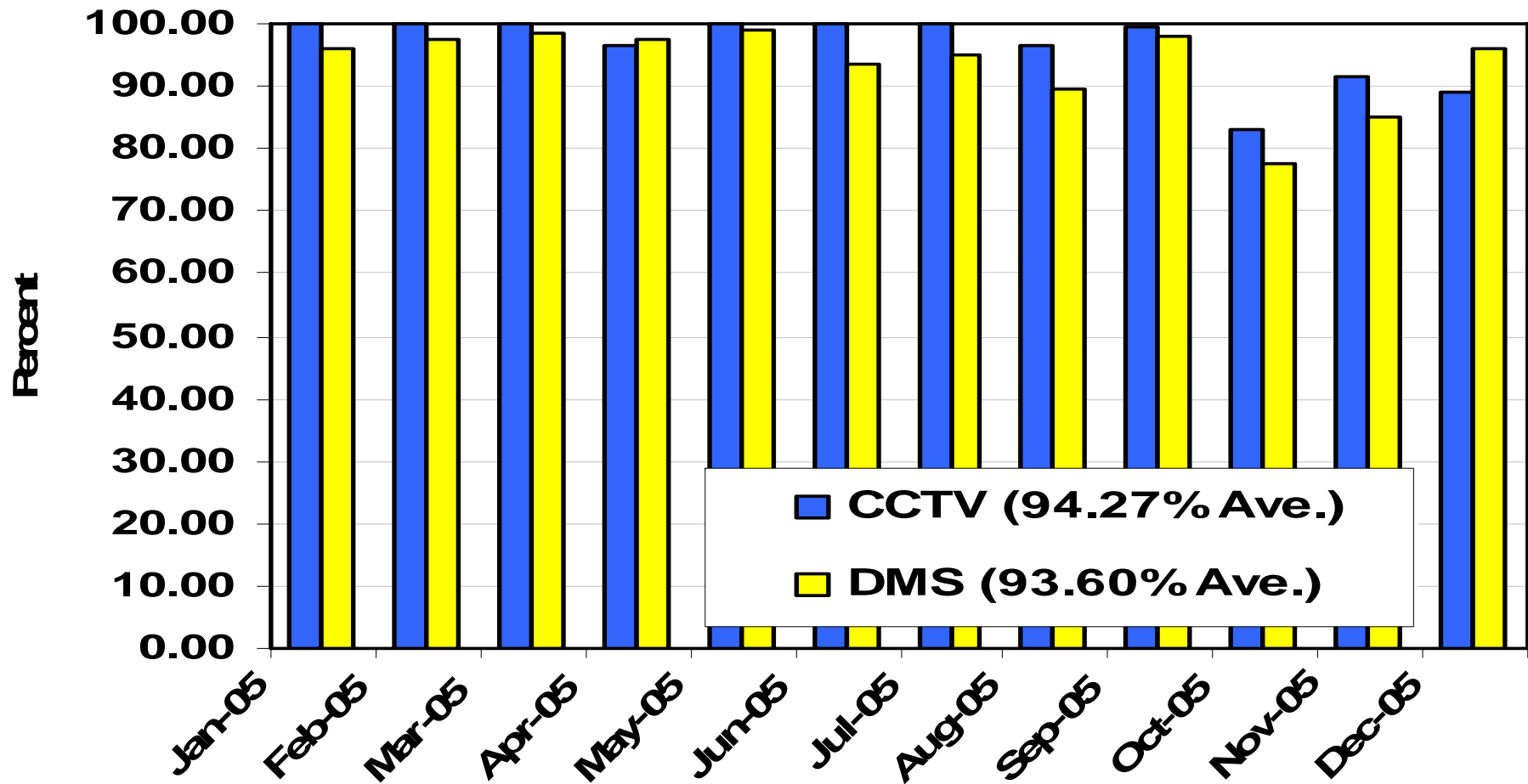
2005 Dynamic Message Sign (DMS) Posting Times





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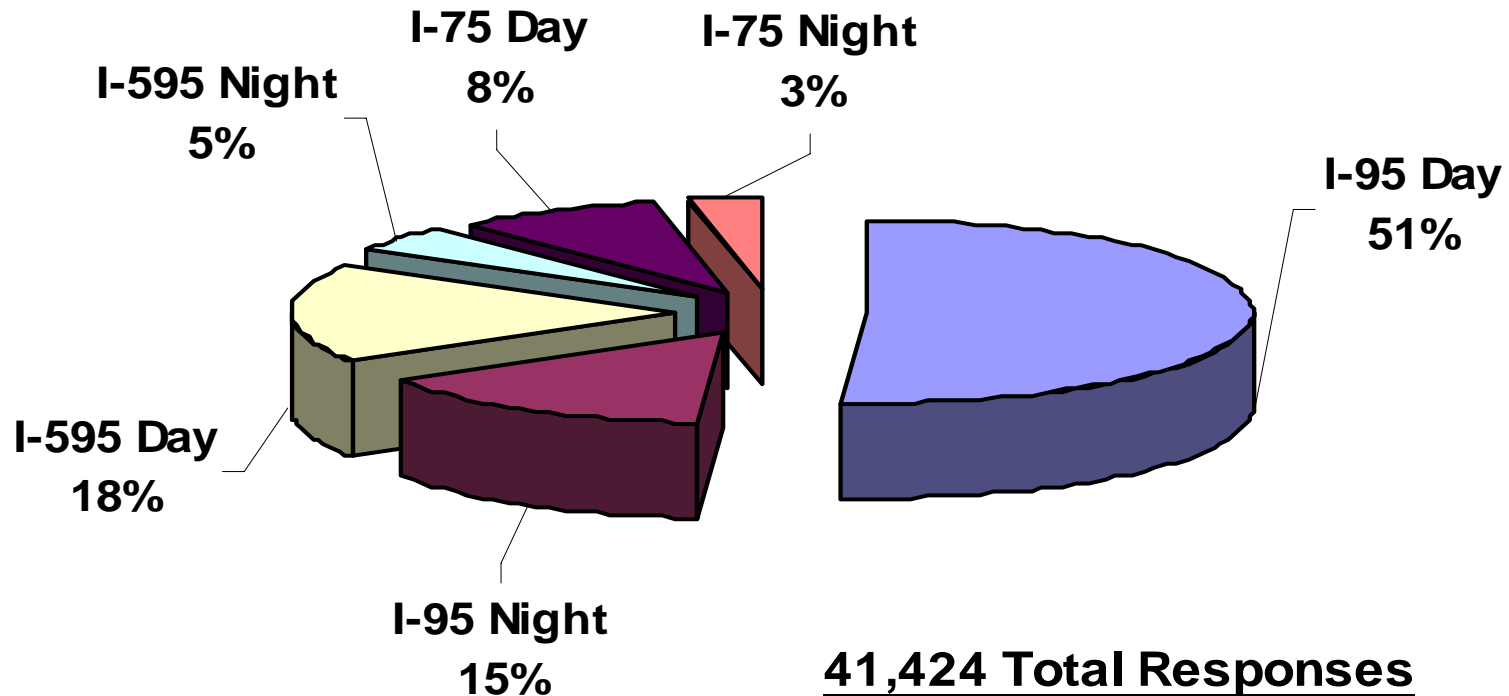
2005 System Availability - ITS Devices





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2005 Road Ranger Responses by Roadway and Shift





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Road Ranger Activities

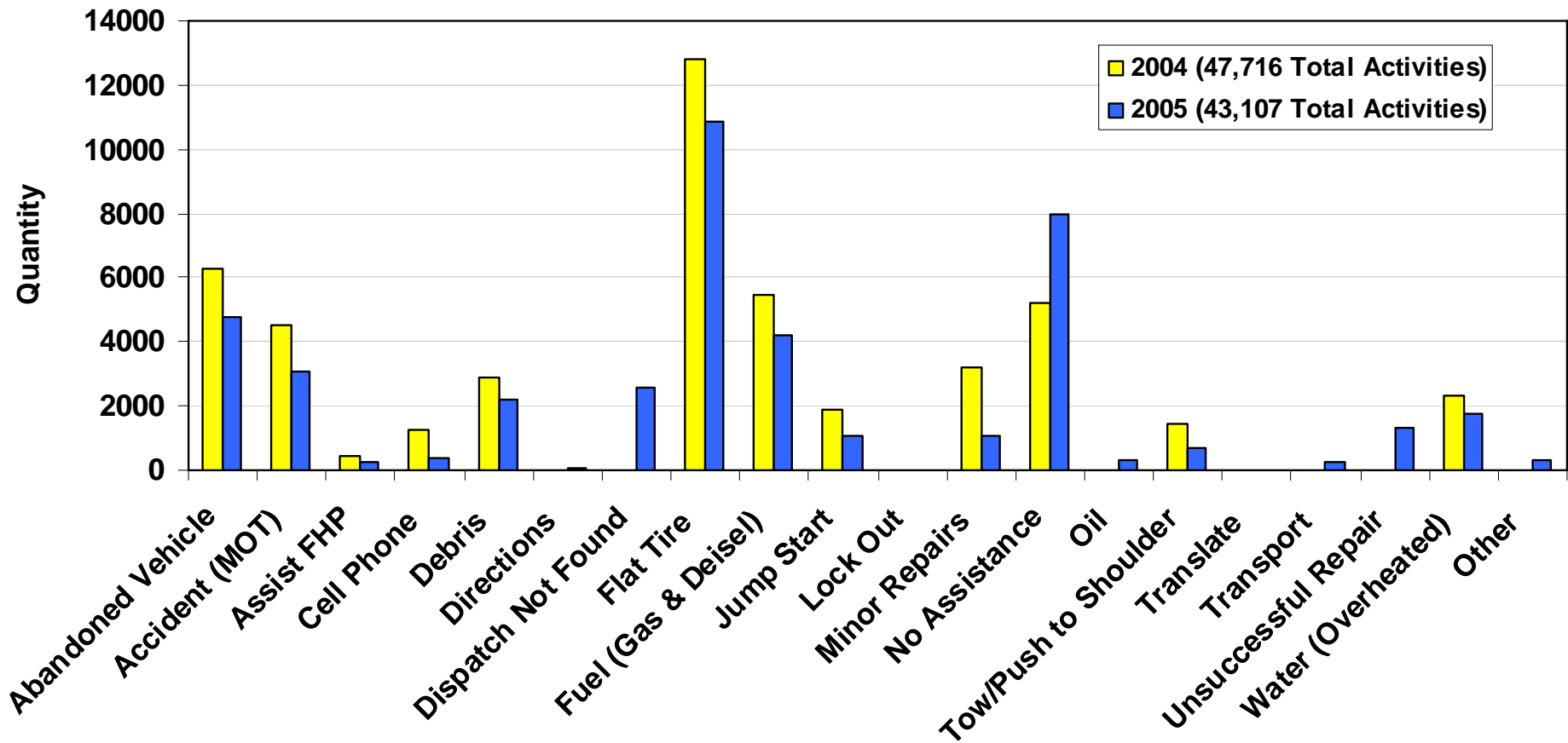


Figure 19 – Road Ranger Activities



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Table 4 – Benefit-Cost Ratio

	2004	2005
Benefit-Cost Ratio	7.86	9.95
Benefit-Cost Ratio (Including Additional Service Patrol Annual Monetary Benefits)	N/A	10.44



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Operator	DATA ENTRY										MISC				RR			EMAIL			DMS			Procedural Total	Overall Weekly Total				
	Event Type	County	Location	Vehicle Information	Lane Blockage	HOV Time	FHP Incident #	Document Notifications	Document DMS Usage	Active Time < 2 mins	Data Entry Total	Active Time > 2 mins	Failure to Make Notification	Comments - Event Details	CCTV	Wrong Truck Number	Incorrect Use of VOID	Status at Event	Incorrect Level Selection	Timeliness	Incorrect Message	Failure to Clear	Incorrect Message			Incorrect Signs	Timeliness	Available - Not used	
Totals	0	0	0	0	0	0	2	0	1	0	3	0	1	3	0	0	0	1	0	0	0	0	0	2	0	0	0	7	10
Alexandra Martinez											0																	0	0
Bryan Royer											0		1															1	1
Chefrun Joiner											0																	0	0
Cheryl Peterson											0																	0	0
Daniel Medina											0							1										1	1
Dee McTague											0																	0	0
Harry Combs							1		1		2		2															2	4
Henry Pabon											0																	0	0
Jerry Cosme											0																	0	0
Keisha Rubaine											0													1				1	1
Nicole McGlynn							1				1																	0	1
Renee Daniels											0														1			1	1
Ricky Gerard											0		1															1	1
Shernette Dodd											0																	0	0
Xavier Williams											0																	0	0
											0																	0	0
											0																	0	0
											0																	0	0
											0																	0	0

TOTAL LANE BLOCKAGE EVENTS 39
Data Entry Error % <1
Procedural Error % 1.2
Total Error % 1



SMART

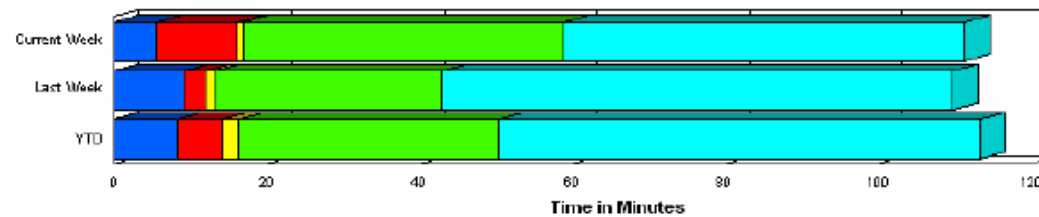


Weekly Performance Measures Report Period From Jan 23, 2006 to Jan 30, 2006

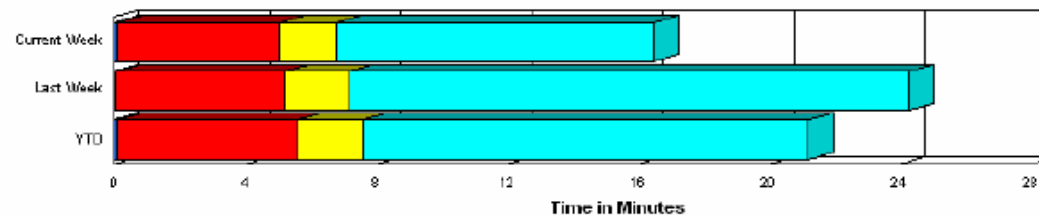
Performance Measures Summary

	<u>Current Week</u>	<u>Last Week</u>	<u>YTD</u>
Number of Events	828	766	3,169
Number of Incidents	35	38	133
TMC Detection (min.)	0.35	0.55	0.45
TMC Verification (min.)	5.41	5.28	5.76
TMC Response (min.)	7.19	7.32	7.86
RR Dispatch Time (min.)	2.36	2.22	2.60
RR Response Time (min.)	4.85	5.10	5.27
Event Clearance (min.)	21.26	29.78	26.07
Roadway Clearance (min.)	58.89	43.00	50.36
Incident Clearance (min.)	111.40	109.84	113.45
#of Events w/ RR/SIRV	822	763	3,149
RR/SIRV Responses	879	819	3,356
RR/SIRV Activities	911	862	3,511

Incident Clearance Time-Line



Traffic Event (Non-Lane Blockage) Time-Line



* Roadway clearance equals all travel lanes open ** Incident clearance equals time when last responder has left the scene

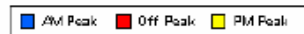
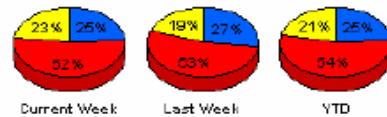


Performance Measures by Peak Period

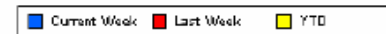
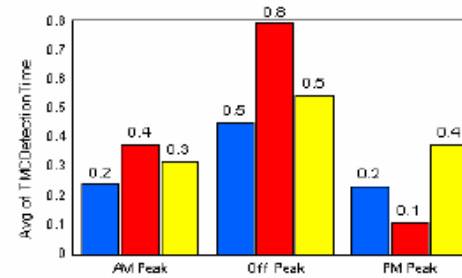


	AM Peak			Off Peak			PM Peak		
	Current	Last	YTD	Current	Last	YTD	Current	Last	YTD
Number of Events	205	209	780	430	409	1,708	193	148	681
Number of Incidents	8	11	33	23	22	80	4	5	20
TMC Detection (min.)	0.24	0.38	0.32	0.45	0.79	0.55	0.23	0.11	0.38
TMC Verification (min.)	4.56	3.94	4.30	5.79	5.86	5.91	5.48	5.57	7.04
TMC Response (min.)	7.61	7.38	7.71	6.91	7.29	7.46	7.35	7.34	9.06
RR Dispatch Time (min.)	2.35	2.25	2.42	2.27	2.30	2.30	2.58	1.97	3.54
RR Response Time (min.)	5.25	5.13	5.29	4.69	4.99	5.17	4.76	5.37	5.52
Event Clearance (min.)	20.11	26.81	23.57	22.46	35.00	28.47	19.81	19.56	22.91
Roadway Clearance (min.)	33.89	26.74	27.13	63.47	58.10	61.24	82.59	12.34	45.18
Incident Clearance (min.)	95.94	104.67	101.80	111.66	113.16	117.24	140.78	106.64	117.50
# of Events w/ RR/SIRV	203	209	775	427	407	1,698	192	147	676
RR/SIRV Responses	215	223	829	461	439	1,810	203	157	717
RR/SIRV Activities	227	232	868	476	466	1,895	208	164	748

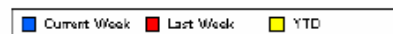
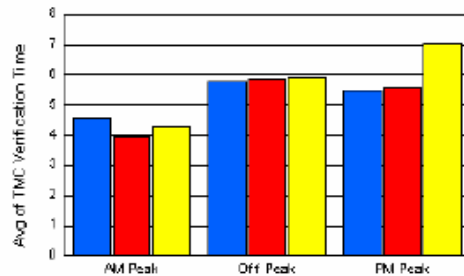
Number of Events / Peak Period



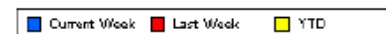
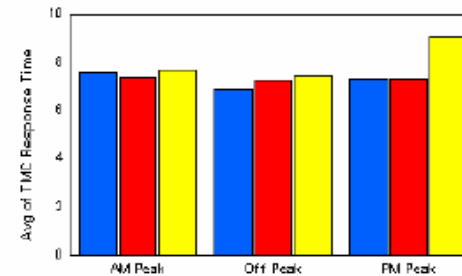
TMC Detection Time



TMC Verification Time



TMC Response Time





2005

Annual Report

SMART SunGuide TMC

Florida Department of Transportation, District IV
 Ft. Lauderdale, Florida



FDOT DISTRICT 4 ITS

Working Together Delivering Performance Measure

- ITS Deployment
- ITS Operation (TMC)
- Freeway Operation
- ITS Maintenance
- TMC IT



FDOT DISTRICT 4 ITS

Future Efforts

- Computer automation of PM process
- Available to general public on website
- Employee evaluation
- Program evaluation
- Program improvement
- Cost saving analysis



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Questions?

www.smartsunguide.com