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## Survey Results (Included Responses)



### Traffic Signal Systems Requirements Survey

The results of your survey are displayed below. If your survey includes text responses, click the "View" button to read individual results.

To exclude a particular response, click the Included Responses button. You can then view the set of individual responses that are currently included and select those you wish to exclude. Results below contain only Included responses.

**EXCLUDE BLANK RESPONSES**

Go to Individual Responses:

Show respondent's emails.

**INCLUDED RESPONSES** →

**EXCLUDED RESPONSES** →

Launch Date: 7/10/2003

Close Date:

Total Invitations: 0

Total Respondents: 281

Included Respondents: 281

Excluded Respondents: 0

- [Cross Tabulate](#)  
Cross-reference two different questions
- [Results via Email](#)  
Receive results in spreadsheet format
- [See Who's Responded](#)  
See who has and hasn't responded to your survey

1. What is your Jurisdiction Type?		Number of Responses	Response Ratio
State		59	22%
County		47	17%
City		145	53%
Province		5	2%
Township		6	2%
Regional Government		6	2%
<a href="#">VIEW</a> Other, Please Specify		22	8%

Please provide the number of signalized intersections by type (If you do not have an updated inventory, please give an estimate)

**2. inventory, please give an estimate)**

[VIEW](#) 268 Responses

**3. What type of signal controllers do you use? Show Percentages.**

[VIEW](#) 268 Responses

**4. What types of detection do you use? And how are they working?**

[VIEW](#) 267 Responses

### Have you attended any of the following Courses? (Check all 5. attended)

	Number of Responses	Response Ratio
National ITS Architecture	108	71%
ITS Standards Overview	109	71%
ITS Standards Actuated Signal Control/Advanced Transportation Controller	69	45%
NHI Systems Engineering	25	16%
NHI Software Acquisition	18	12%

The following questions have been developed to assist us in determining what functions you require of a Traffic Signal System. This information will be used to assist the traffic community in assisting these needs and provide adequate functionality in the products and services that are developed. The function are listed with various options. Please check all that apply to you and your jurisdiction for the majority of your traffic signals.

### 6. Upload/download

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-Term < 5yrs.	3 Far-Term > 5yrs	4 No Foreseen Use
1. Direct connect (i.e. laptop)	79% 207	15% 40	3% 9	2% 6
2. Controller through a Master	71% 177	10% 25	5% 12	14% 36
3. Of a Master's Database	60% 136	14% 31	7% 16	19% 44
4. Central System	60% 148	19% 46	11% 26	11% 26
5. Remotely requested download	52% 127	27% 66	9% 21	13% 32
6. Remote front panel (master front panel acts as local front panel)	27% 59	19% 41	10% 23	44% 97
7. Database ID verification	46% 104	22% 50	8% 19	24% 55
8. FMS Support for other devices (e.g. Ramp Metering, DMS, etc)	6% 13	27% 62	28% 63	39% 90
9. Full / Partial access to data objects	33% 73	31% 69	16% 35	20% 45

### 7. Monitoring - Diagnostics

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-Term < 5yrs.	3 Far-Term > 5yrs.	4 No Foreseen Use
1. Communications	75% 197	18% 47	3% 8	3% 9
2. Detectors	67% 176	25% 65	4% 11	3% 9
3. CMU/MMU monitoring/uploading	39% 96	40% 98	11% 28	9% 23
4. Field device faults (e.g. ASC, Field Master, etc.)	51% 124	33% 81	7% 17	9% 21

### 8. Monitoring - System/Area/Zone map (Display/Operation)

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-Term < 5yrs	3 Far-Term >5yrs	4 No Foreseen Use
1. Main Street Green	71% 170	17% 41	5% 13	7% 17
2. Full Signal (Green/Yellow/Red/etc.) Display	68% 173	17% 43	9% 24	6% 16
3. Control Mode	66% 157	21% 49	9% 21	5% 12
4. Transition Status(offset seeking)	61% 149	22% 54	9% 23	8% 20
5. Level-of-Service	19% 43	40% 93	24% 56	17% 39
6. Critical/Non-critical alarms	63% 154	21% 52	9% 23	7% 16
7. Uninterrupted Power Supply (UPS)Usage	28% 68	30% 72	25% 60	17% 42
8. Timing Plan / Pattern in operation	78% 191	14% 34	4% 11	4% 10
9. Timing Plan /Pattern requested	61% 142	25% 57	6% 14	8% 19
10. Preempts	72% 186	19% 48	7% 19	2% 4
11. Transit Signal Priority (TSP)	15% 35	29% 69	30% 73	27% 64
12. Link Speed	16% 38	36% 86	27% 64	21% 50
13. Volume/Occupancy (Links)	27% 66	39% 93	21% 51	13% 31
14. System Detector Failures	52% 130	29% 73	12% 30	6% 16
15. Zoom/Pan/"Tilt"	23% 54	40% 95	22% 52	16% 38
16. Travel-time	8% 20	39% 91	34% 80	19% 45

### 9. Monitoring - Intersection Display/Operation

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Signal Displays	72% 187	16% 40	7% 19	5% 12
2. Control Status	76% 190	15% 37	6% 15	4% 9
3. Detectors	70% 181	19% 50	7% 17	4% 9
4. UPS usage	12% 29	38% 89	25% 59	24% 56

### 10. Monitoring - Polling Rate

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Once per second	50% 113	21% 49	10% 22	19% 44

2. On Demand	43% 92	27% 57	10% 22	20% 42
3. Periodic (e.g. 30, 60 sec. period)	30% 58	23% 46	9% 18	38% 74
4. Long periods (e.g. 5 min., daily, weekly, etc.)	28% 52	21% 40	12% 22	39% 73
5. Variable rate (e.g. specific task)	30% 60	27% 55	13% 27	30% 60
6. Update the display data once per second	44% 92	26% 53	12% 24	18% 38
7. Retrieve the display data once per second	40% 79	27% 54	12% 23	21% 41

## 11. Database Management

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Editing	74% 186	16% 39	6% 15	4% 11
2. Backup/Restore	74% 186	15% 38	7% 17	4% 11
3. Multiple Timing Plans	77% 194	14% 36	4% 11	4% 11

## 12. Reports

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Logs - Volume/Occupancy Counting	53% 131	27% 66	13% 32	8% 20
2. Logs - Synchronized to real time	41% 98	35% 84	13% 31	11% 25
3. Failure (alarms)	68% 173	21% 52	6% 16	5% 12
4. Real-time Performance MOEs-Split Usage	37% 90	38% 92	16% 39	9% 22
5. Real-time Performance MOEs-Real-time Time-Space-Diagram	24% 59	43% 104	21% 51	11% 27
6. Speed	20% 47	42% 101	24% 56	14% 34

## 13. Control

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Time Base Coordination	88% 229	5% 14	4% 10	3% 7
2. Traffic Responsive-Pattern/Signature Matching	20% 47	38% 89	21% 49	21% 49
3. Traffic Responsive-Threshold Matching	24% 55	40% 92	17% 39	18% 42
4. Non-Coordinated/Manual	72% 169	8% 18	5% 12	15% 35
5. Adaptive	12% 29	31% 73	33% 76	24% 56

	27	72	78	56
6. Incident Management Algorithm	3% 8	37% 85	35% 82	24% 56
7. Critical Intersection Control	22% 50	33% 75	25% 57	19% 44
8. Second-by-Second Control	17% 38	26% 56	19% 41	38% 83
9. Pre-timed/Fixed Control	50% 111	9% 20	5% 11	37% 82
10. Pre-timed/Interval Control	31% 65	12% 26	8% 17	49% 103
11. Phase-based Control	37% 80	16% 35	12% 26	35% 75

#### 14. Masters

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Master to Master linking (i.e. one master is offset from another)	17% 37	23% 51	17% 38	42% 92
2. Multiple traffic responsive plans	25% 58	30% 68	20% 46	25% 57
3. Number of sections	33% 66	23% 47	9% 18	35% 72
4. Dynamic intersection assignment	14% 29	30% 62	18% 38	38% 78
5. Communications-Dial up	63% 149	10% 23	5% 12	22% 53
6. Communications-Direct Connect	54% 129	22% 51	10% 23	14% 34
7. Communications-Other	26% 51	24% 46	16% 31	34% 67
8. Multiple plans/patterns used daily	73% 173	11% 27	4% 9	11% 27
9. Schedule entries used daily	51% 113	18% 39	7% 15	24% 53

#### 15. Special Operations-Preemption

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Highway-Rail Intersection	65% 158	8% 20	9% 23	17% 42
2. Police	29% 65	9% 19	21% 46	41% 92
3. Fire	82% 208	8% 21	6% 14	4% 11
4. Ambulance	53% 121	14% 31	10% 23	23% 52
5. Transit Bus	14% 33	23% 53	30% 69	33% 78
6. Transit LRT	12% 27	11% 25	24% 52	53% 117

#### 16. Special Operations-Signal Control Prioritization

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Coordinated vs. Non-coordinated operation	67% 157	11% 27	6% 13	16% 38
2. Transit Bus	12% 27	24% 54	31% 70	33% 74
3. Transit LRT	10% 22	13% 27	23% 50	54% 115
4. Fleet Vehicles (e.g. snow plows, school buses, etc)	3% 6	8% 18	18% 39	71% 152
5. Detection methods-Continous (e.g. 2-way communication using GPS data)	5% 11	19% 41	36% 80	40% 88
6. Detection methods-Zone Detection (e.g. loops, RF tags)	31% 71	21% 47	20% 45	28% 63

## 17. Special Operations-Control Features

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Lead-Lag	83% 203	6% 14	4% 10	7% 18
2. Volume-density	55% 133	19% 47	10% 23	16% 39
3. Conditional Service	51% 116	22% 49	9% 21	18% 41
4. Dynamic Max (Max 3)	30% 68	25% 57	15% 33	29% 66
5. Adaptive (distributed)split	18% 40	37% 83	22% 51	23% 53
6. Queue/Congestion detection	27% 62	42% 96	17% 40	14% 32
7. Floating Force-offs	33% 72	27% 58	17% 36	24% 52
8. Timing Plans	91% 230	5% 13	2% 5	2% 4
9. Phases	90% 222	6% 15	2% 6	2% 5
10. Splits	88% 215	7% 18	2% 5	3% 7
11. Offsets	89% 221	6% 16	2% 5	3% 7
12. Volume/Occupancy Periods	30% 68	36% 81	20% 46	14% 31
13. Historical data collection	45% 104	35% 81	11% 26	9% 21
14. ADA-different PED times for Audible Signals	20% 45	30% 67	27% 60	24% 54
15. ADA-using PED Detectors	29% 66	30% 68	24% 54	18% 40
16. Clocks-WWV	45% 101	18% 41	11% 25	26% 58
17. Clocks-GPS	12% 24	29% 61	22% 46	37% 77
18. Clocks-Line Sync	50% 109	12% 26	8% 18	29% 63
19. Clocks-NTP	6% 12	19% 37	20% 38	55% 107

20. Clocks-Frequent Updates	50% 101	17% 34	8% 17	25% 52
21. Clocks-Local Clock Interface	33% 64	15% 29	11% 21	41% 80
22. Clocks-System Clock Interface	54% 116	20% 44	8% 17	18% 39
23. Speed Detectors	21% 47	39% 86	24% 54	16% 35
24. Integrated Traffic Surveillance (CCTV)	30% 67	36% 81	23% 52	12% 27
25. HOV signal influence (e.g. detector weighting)	3% 7	13% 29	25% 55	58% 125
26. PED Overlaps	40% 90	19% 43	13% 28	28% 62
27. Variable Phase sequencing	37% 81	24% 53	18% 39	22% 48

## 18. Security

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Database	67% 159	18% 44	7% 17	8% 18
2. Communication	58% 136	25% 59	8% 19	8% 19
3. Device Access	57% 126	26% 57	5% 12	12% 27
4. Multijurisdictional	24% 53	37% 83	17% 37	23% 51
5. Multi-Level	37% 84	33% 74	10% 23	20% 44

## 19. Timing Plan Generation & Interface

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Synchro	79% 193	10% 24	5% 12	7% 16
2. Tranyst	35% 70	9% 18	12% 23	45% 89
3. Passer	39% 81	9% 18	10% 21	42% 88
4. ACS-lite	1% 2	10% 18	9% 16	81% 150
5. HCM Cinema	14% 28	14% 27	10% 20	62% 121
6. Contra-Flow	2% 3	7% 13	8% 15	83% 150
7. TSPPD	16% 30	8% 15	8% 15	69% 132
8. AAP2NEMA	3% 5	9% 16	8% 14	81% 149
9. Other	26% 49	13% 24	5% 10	56% 107

**20. Communications**

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Ethernet	19% 39	39% 78	21% 42	21% 42
2. FSK(twisted-pair) Multi-drop	65% 144	8% 17	4% 9	23% 50
3. FSK(twisted-pair) Master-Slave	61% 127	5% 11	3% 7	31% 64
4. PPP (Dial-up)	64% 141	7% 15	5% 10	25% 55
5. ATM/Sonet	11% 21	17% 31	14% 26	58% 106
6. Spread Spectrum Radio	43% 98	23% 51	8% 19	26% 58
7. Cellular Digital Packet Data (CDPD)	10% 19	19% 36	16% 30	55% 104
8. Fiber-optic	51% 122	24% 58	16% 39	8% 19
9. Direct EIA/TIA-232 (RS-232)	47% 93	13% 25	9% 18	31% 62
10. Other	22% 33	12% 18	10% 14	56% 82
11. Internal Modems	67% 149	13% 29	4% 9	16% 36
12. External Modems	75% 175	8% 19	5% 11	12% 28

**21. NTCIP should apply to:**

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. NEMA Actuated	51% 109	19% 41	10% 21	20% 42
2. NEMA Pretimed	36% 71	18% 36	8% 16	38% 75
3. 170	34% 66	15% 29	11% 21	40% 78
4. ATC 2070	34% 69	24% 50	12% 25	30% 61
5. ATC	32% 60	23% 43	14% 26	31% 59

**22. Testing**

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Prefer in-house testing /QPL	65% 142	9% 20	8% 18	17% 38
2. Use other agency QPL	43% 84	10% 20	11% 22	35% 68
3. Use a standard (such as NEMA TS2)	67% 141	11% 24	8% 16	14% 30
4. Use manufacturers' statement of compliance	67% 138	8% 17	3% 7	22% 45

5. Other	18%	8%	9%	66%
	23	10	12	86

### 23. Miscellaneous

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Use	2 Near-Term < 5yrs	3 Far-Term > 5yrs	4 No Foreseen Use
1. Soft-fail, Back-up System	45%	25%	14%	17%
	89	49	27	34
2. Soft-fail, Redundancy	25%	27%	19%	29%
	46	51	36	54
3. Diagnostics-Internal diagnostic	54%	24%	8%	14%
	104	46	16	28
4. Diagnostics-External devices (e.g. TS @ SDLC testers)	28%	29%	16%	28%
	50	52	28	50
5. Transit Management Center exist	14%	13%	24%	48%
	27	26	48	95
6. Traffic Management Center exist	48%	21%	12%	19%
	107	46	27	43
7. Communication between the Transit MC and Traffic MC.	8%	23%	25%	43%
	17	46	51	87

Transit Signal Priority generally consist of two systems: one that provides the detection of transit/fleet vehicles and a a request for priority service and the other that is used to modify signal timings to provide a signal timing advantage to the approaching vehicle. This series of questions are related to your existing or planned transit/fleet vehicle detection/priority request system and the signal control routines that you would use to service the priority request. Please answer all that apply.

### 24. What types of Transit/Fleet vehicle detection and detection technologies are or will you be using?

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-term < 5yrs	3 Far-term > 5yrs	4 No Foreseen Use
1. Point Detection using inductive loops: Check-in	15%	8%	17%	61%
	29	15	32	117
2. Point Detection using ID Tags: Check-in	5%	12%	20%	63%
	10	22	38	118
3. Point Detection using inductive loops: Check-in and Check-out	10%	10%	17%	63%
	19	18	32	119
4. Point Detection using ID Tags: Check-in and Check-out	5%	12%	19%	64%
	10	22	35	117
5. Zone Detection using Optical/Infrared detectors	17%	12%	19%	53%
	32	22	36	101
6. Zone Detection using Radio Frequency (RF) technologies	4%	8%	18%	69%
	8	15	34	127
7. Zone Detection using Acoustic (e.g. Siren) detectors	2%	3%	10%	85%
	3	6	17	152
8. Continuous Detection using GPS-based vehicle location systems	6%	14%	28%	53%
	11	27	53	101
9. Continuous Detection using odometer-based methods	1%	4%	10%	85%
	2	7	19	154
10. Central-based system detection	6%	7%	20%	68%
	11	12	36	125
11. Other	2%	3%	11%	84%

3 5 16 125

**25. What are your detection requirement?**

*The top percentage indicates total respondent ratio; the bottom number represents actual number of respondents selecting the option*

	1 Currently Used	2 Near-term < 5yrs	3 Far-term > 5yrs	4 No Foreseen Use
1. Does your system need to be capable of interfacing with multiple transit agencies	6% 14	17% 37	17% 36	60% 129
2. Does your system need to be capable of interfacing with multiple traffic control systems	16% 35	30% 65	20% 44	34% 75
3. Does your system need to be capable of interfacing with multiple detection technologies	34% 75	27% 60	14% 32	25% 56
4. Is there a need to have your system compatible with multiple fleet types (emergency, buses, snowplows, LRT, etc)	18% 40	22% 47	21% 45	39% 86
5. Are all fleet agencies equipped with the same dection devices	16% 33	15% 30	20% 40	50% 101
6. Do you require "real-time" detection as < 1 sec	20% 41	17% 34	15% 30	49% 99
7. Do you require "real-time" detection as between 1-2 secs	15% 28	18% 33	16% 30	51% 96
8. Do you require "real-time" detection as between 2-5 secs	10% 18	15% 27	16% 28	59% 107
9. Do you require "real-time" detection as > 5 secs	9% 17	11% 19	13% 24	66% 119
10. Do you used a specified distance (instead of time) as your detection requirement. Please specify the basis in the next question.	21% 37	7% 12	9% 16	63% 111

Do you have any additional requirements or priority control strategies that you would like to **26.** discuss. Also indicate if you would like to complete a more detailed Signal Priority survey.



**VIEW** 57 Responses

Please use the space below to provide any functionality that your require for the majority of the signals in your systems that is not addressed above. Use this space to address any traffic signal issues you would like to be addressed by addition research and coordination activites.

**27. Other Issues**

**VIEW** 51 Responses

Would you or someone from your agency like to attend the upcoming Traffic Signal Needs Requirement workshop to be held in Seattle, WA. July 22 and 23, 2003. See the ITE Website at [www.ite.org](http://www.ite.org) in the technical area under standards to register. Limited Travel assistance **28.** is available for the Public Sector.

	Number of Responses	Response Ratio
Yes 	68	37%
No 	116	63%

[VIEW](#)

**29. Name and Address**

[VIEW](#) 281 Responses

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