

National Transportation Operations Coalition



National Traffic Signal Report Card 2007

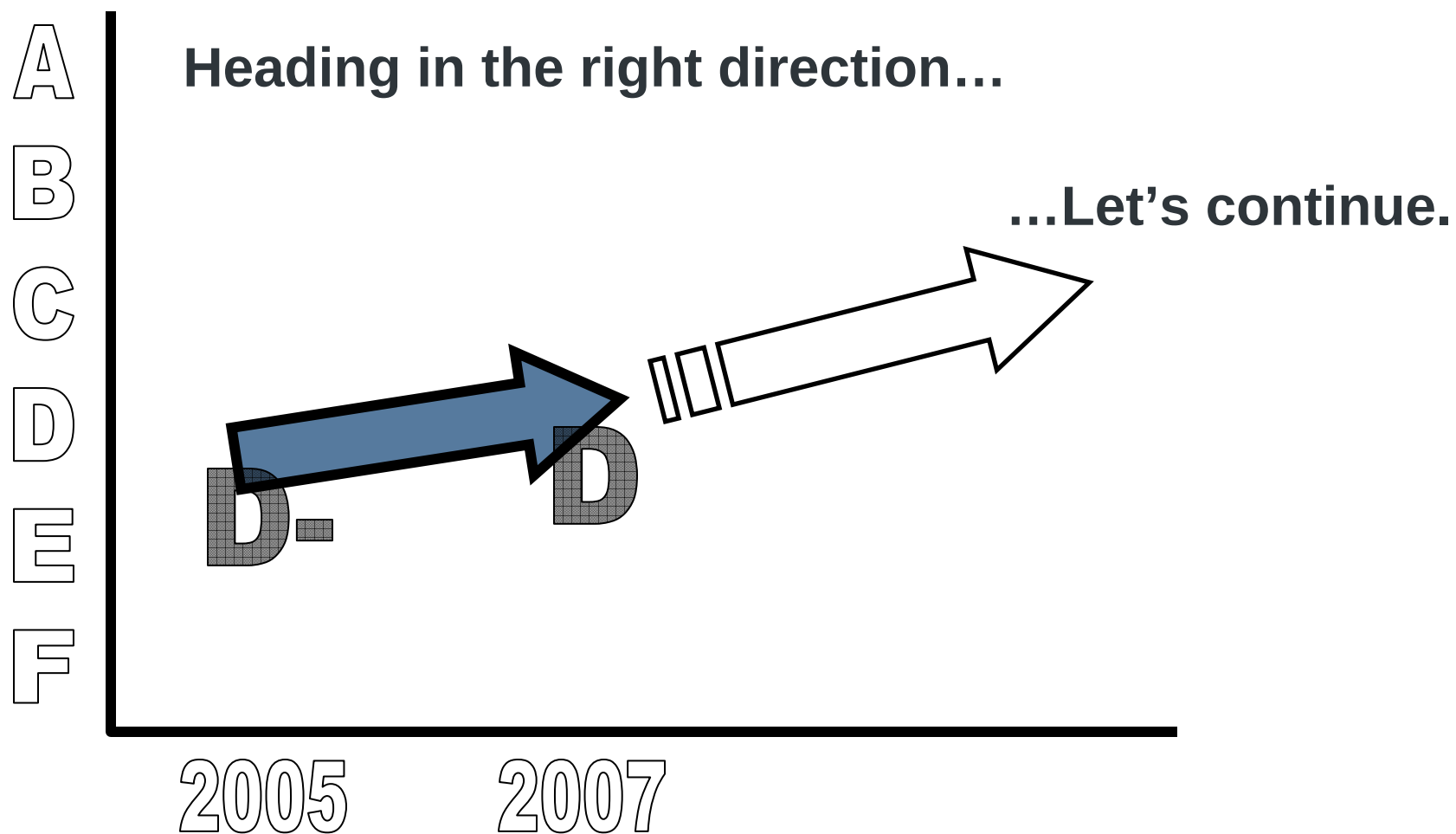
Chicago Metropolitan Agency for Planning
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National Results

National Traffic Signal Report Card 2007		Score
Management	D-	60
Signal Operation at Individual Intersections	C	72
Signal Operation in Coordinated Systems	D	61
Signal Timing Practices	C-	70
Traffic Monitoring and Data Collection	F	54
Maintenance	C-	70
OVERALL	D	65

National Results



National Results – More Than 1,000 Signals

	>1,000	National
Management	 D+	D-
Signal Operations at Individual Intersections	 C+	C
Signal Operations in Coordinated Systems	 D+	D
Signal Timing Practices	 C+	C-
Traffic Monitoring and Data Collection	F	F
Maintenance	C-	C-

Characteristics of Success

- Management (D-)
 - Documented philosophy on operations and signal timing
 - Operations staffed outside of normal business hours
 - Formal coordination with neighboring agencies
 - Dedicated staff & resources for monitoring and managing traffic regularly
- Signal Operations *at individual intersections* (C)
 - Documented process for routine review of signal timing
 - Implementing updated signal timing within 2 to 4 days
 - Timing considers coordination with adjacent signals, phasing, and lane-use assignments

Characteristics of Success

- Signal Operations *in coordinated systems* (D)
 - Frequent review of signal timing (at least every 3 years)
 - Implementing new/updated signal timing plans within 1 month
 - Well-defined process for developing traffic signal timing plans
 - Timing plans for different traffic patterns
 - Timing is coordinated with adjacent jurisdictions

Characteristics of Success

- Signal Timing Practices (C-)
 - Use of time-space diagrams and evaluating different phase sequences
 - Fine-tuning of signal timing based on actual field operating conditions
 - Off-peak period timing plans that balance arterial progression and minor movement delays
- Traffic Monitoring and Data Collection (F)
 - Well-established process for regular data collection and quality assessment
 - Data archiving and sharing

Characteristics of Success

- Maintenance (C-)
 - Policies and staffing in place to provide fast response (1 or 2 hours) to critical malfunctions
 - Regular preventative maintenance and operational reviews
 - Configuration management
 - Malfunction monitoring notifications to maintenance personnel
 - Detection system is at least 90% operational

Next Steps

How do we utilize this information?

Moving Forward

- Program management (performance-based)
 - Clear goals
 - Measurable objectives
 - Milestones to monitor progress
- Traffic monitoring and data collection
 - Guidance for investment decisions
 - Fine-tune signal timing
 - Transportation planning (archived data)
 - Real-time benefits (traveler information, traffic reports)

Moving Forward

- Routine signal timing updates
 - Keep up with changing travel patterns
 - Affordable (~\$3,000 per intersection)
- Sound maintenance practices (timely response)
 - Trained technicians
 - Parts/supplies
- Appropriate traffic signal hardware
 - Technology advancements can provide higher efficiency, improved performance, and/or new capabilities
 - Outdated equipment can have lack of vendor support

Moving Forward

- Use the self assessment results (ite.org/selfassessment) or traffic signal system audit (www.ite.org/reportcard) to help establish priorities
- Invest beyond initial design and implementation of traffic signal systems. Ongoing operational support and maintenance is equally important to realize the full benefits.
- Consider common characteristics of success among agencies
- In funding decisions, consider the attributes of traffic signal system operation and maintenance investments:
 - 40:1 benefit/cost ratio
 - Congestion and air quality benefits
 - Lower cost and shorter time frames (vs. capital improvement)
 - Squeezes more out of what we have before building more

Closing Considerations

Performance at an 'A' level

- If you spent two hours in your car commuting to and from work and running errands, you'd save 117.5 hours per year as a benefit of improved signal timing.
- If you use one tank of gas per week, you'd save five full tanks per year per household (~\$240.13); 17 billion gallons of motor fuels per year nationally.
- Operations would cost 1 percent of the total national expenditure on highway transportation
- Timing updates would cost 0.2 percent of the total national expenditure on highway transportation