APPENDIX D PRIORITIZATION GUIDELINES IN OTHER PLANS

This appendix highlights the salient facts about repair prioritization guidelines for two of the maintenance plans reviewed in Chapter 2 that provided such information, as well as the Minnesota Department of Transportation's Orion project.

- Surveillance, Control, and Driver Information (SC&DI) Plan. In this plan developed for metropolitan Seattle, each ITS device is assigned a response time "based on its relative necessity to the daily operation of the [Traffic Systems Management Center]." (7) Table D-1 lists the response times developed for SC&DI. As can be seen, SC&DI places priority emphasis on safety-related systems (i.e. reversible lane control) and on key data collection links (i.e. some surveillance cameras). Systems that are intended only for traveler information, such as variable message signs (VMS) and highway advisory radio (HAR), are given lower priority. The plan notes that, in all cases, "these response times are meant for normal conditions and will be modified during special circumstances."

- Caltrans District 7 TOS/TMC Maintenance Master Plan. This plan develops four priority levels based on response time. Reasons for maintaining ITS equipment are ranked in order of decreasing importance: public safety, traffic service, preservation of facility / operational integrity, and general appearance of equipment to public (6). Table D-2 indicates how these criteria were translated into a maintenance priority list. This plan puts higher priority on the equipment that is most necessary to preserve the integrity of the system. Note that none of the devices in Table D-2 have recommended response times exceeding 72 hours, even though none of the devices are explicitly related to public safety.

Device	Response Time
• Ramp meters (cabinet, controller, signal head and standard warning beacon, demand loop, communication) • Data station circuit • Closed-circuit television (CCTV) systems (adjacent camera not operational) • Reversible lane control and warning equipment	Immediately
• Individual data station • Diagnose failed loops (other than demand loop) • Recut/resplice ramp meter loops (other than demand loop) • Variable message sign (VMS) systems	One week
• CCTV systems (adjacent cameras still operational)	Two weeks
• Highway advisory radio (HAR) systems	One month
• Recut/resplice other loops (mainline, exit ramp, etc.)	Two months

Table D-1: SC&DI (Seattle) Recommended Response Times for Repair.

Device	Response Priority
• Data node (communication system) • SONET node (except if single video equipment inoperative) • Transportation Management Center (except if single video equipment inoperative) • Variable Message Signs (VMS) – multiple signs on circuit	1 - Immediate
• Closed-Circuit Television (CCTV) – multiple cameras on circuit • Ramp Metering System and Vehicle Detection Stations – multiple sites on circuit • SONET node (single video equipment inoperative) • Transportation Management Center (single video equipment inoperative) • Video node (communication system) • VMS – single sign	2 - Next business day
• CCTV – single site • Ramp Metering System and Vehicle Detection Stations – single site	3 - Within 72 hours

Table D-2: Caltrans District 7 Repair Priorities.

(Source: 6)

- Minnesota Department of Transportation (Mn/DOT) Orion Project. Orion is a partnership between several governmental agencies to implement ITS projects in the Twin Cities. A maintenance plan was developed specifically for their Arterial Traffic Status system, a project that is designed "to collect and display real-time traffic status information for agency traffic engineers who are responsible for the management of day-to-day traffic operations on the arterial roadways in the Twin Cities." (69) As shown in Table D-3, the Orion project emphasizes safety-related repairs over operational repairs.

Category	Types of Failures
Critical failures that impact the safety of the public	• Loss of electrical power at signal • Traffic signal in an all red conflict flash • A malfunctioning traffic signal
Critical failures that impact efficient operation of signal systems or traffic management	• Communication interconnect failures • Local detector failures
Non-critical failures	• Loop detectors not critical to signal operation • Failure of Arterial Traffic Status system components, e.g. modems, lightning suppression

Table D-3: Orion (Mn/DOT) Repair Priorities.

(Source: 69)