Table 3-1: Outside Agencies VMS Questionnaire Summary

		Ministry of Transportation - Ontario	City of San Antonio, TX	Washington DOT	New York DOT	Minnesota DOT	Kentucky DOT	Michigan ITS Center	Colorado DOT	Ohio DOT	Virginia DOT - Arlington	Virginia DOT - VDOT	Virginia DOT - Suffolk	Connecticut DOT
MESSAGE POLICY	Information Categories	Any Incident Congestion Levels Rest Messages	Severe Incidents	Road Construction Special Events	Severe Incidents Moderate Incidents Accidents/ Crashes Road Construction	Any Incident Accident/ Crashes Road Construction	Severe Incidents Moderate Incidents Accident/ Crashes		Any Incident that effects traffic	Any incident	Any incident Road Construction	Any Incident Accidents Road Construction	Severe and Moderate Incidents Accidents Road Construction Maintenance	Any Incident Road Construction Road Maintenance
	Detection/ Verification/ Action	Incident Management Messages determined by automated incident detection system, information from motorists, police, news media, and CCTV.	Incident Management messages determined by automated incident detection system and verified via CCTV.	Incident Management messages determined/ verified by motorist assist and police patrols and CCTV.	Incident Management messages determined automated incident detection and police agency and verified via CCTV, incident detection algorithm, police and motorist assist patrols.	Incident management messages determined by police and motorist assist patrols and verified via CCTV.	Incident management messages determined / verified by automated incident detection algorithm, information provided by motorists, police and motorist assist patrols, and CCTV		Incident management messages determined by police and motorist assist patrols, news media, maintenance personnel, and information provided by motorists. Verified by CCTV, motorist assist and police patrols, and news media.	Incident management messages determined by an automated incident detection system and verified by CCTV.	Incident management messages determined and verified by an automated incident detection algorithm, motorist assist and police patrols, news media and CCTV.	Incident management messages determined and verified by police and motorist assist patrols and information from motorists.	Incident management messages determine by and automated incident detection algorithm, motorist assist and police patrols, and information provided by motorists. Verified via CCTV	Incident management messages determined from automated incident detection algorithm, police and motorist assist patrols. Verified via CCTV and motorist assist and police/law enforcement
		Congestion Management messages are automatically determined with count station data.			Congestion Messages determined by count station data and motorist assist patrols and verified by CCTV.	Congestion messages used in cases of non-recurring congestion determined by count station data and ramp meter system and verified by CCTV, roadway detection, and motorist assist patrols.	Congestion messages determined / verified by count station data, police and motorist assist patrols, information provided by motorists, and CCTV.		Congestion management messages determined by count station data and verified by CCTV.	Congestion management messages determined/verified by roadway detection, CCTV, motorist assist and police patrol.	Congestion management messages used, no additional information given.	Congestion management messages determined by count station data and verified via CCTV	Congestion management messages determined from speed sensors and verified via CCTV, motorist and police patrol.
		Passive Messages Only Diversion messages are used for full closure on a freeway or major arterial	Passive Messages Only Diversion Messages used for verified severe incidents	Passive and Active Messages Diversion Messages used for Freeway closures, verified severe incidents, and significant construction projects	Passive and Active Messages Diversion messages are used for freeway closures and verified severe incidents. Status of diversions routes verified via CCTV and roadway detection.	Passive Messages Only	Passive Messages Only	Passive and Active Messages Diversion messages for freeway closures and verified severe incidents on the freeway. Status of diversion route verified by CCTV, roadway detection, and police.	Passive and Active Messages Diversion messages for freeway closures and verified severe incidents on the freeway.	Passive Messages Only	Passive and Active Messages	Passive and Active Messages	Passive and Active Messages Diversion messages used for freeway closures and verified severe incidents, coordinate diversion route with local agencies.	Passive and Active Messages Diversion messages used for freeway closures and verified severe incidents

Table 3-1: Outside Agencies VMS Questionnaire Summary (Cont.)

		Ministry of Transportation - Ontario	City of San Antonio, TX	Washington DOT	New York DOT	Minnesota DOT	Kentucky DOT	Michigan ITS Center	Colorado DOT	Ohio DOT	Virginia DOT - Arlington	Virginia DOT - VDOT	Virginia DOT - Suffolk	Connecticut DOT
MESSAGE POLICY (Continued)	Detection/ Verification/ Action (Continued)	Non-Traffic Messages - Safety and Transit, signs are not left blank	Non-Traffic Messages are not used, sign is left blank.		Non-Traffic Messages - Safety and Transportation related messages - sign is not left blank	Non-Traffic Messages - do not use - signs left blank	Non-Traffic Messages - do not use - signs left blank	Non-Traffic Messages - do not use, do not leave sign blank	Non-Traffic messages - do not use, signs left blank	Non-Traffic messages - do not use, signs left blank	Non-Traffic messages - time and data	Non-Traffic messages not used, signs left blank	Non-Traffic Messages - do not use, sign left blank	Non-Traffic messages - do not use, signs left blank
	Message Content	Standard Messages • structure available, not included in survey Abbreviations and Local Terminology • Identify locations with landmarks	Standard Messages • Standard messages are under design Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • Identify locations by exit numbers.	Standard Messages • information not available Abbreviations and Local Terminology • Identify locations by landmarks	Standard Messages • information not available Abbreviations and Local Terminology • Identify locations by mileage	Standard Messages • information not available Abbreviations and Local Terminology • Identify locations by landmarks	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available
	Message Updates	Automated system is fine-tuned as needed based on staff observations	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available
MESSAGE IMPLEMENTATION	Message Structure	Message Phasing • 2 phase/sign, 3 sec/phase • very rarely used Standard Message structure information not available	information not available Standard Message structure information not available	Message Phasing • 3 phase/sign, length/phase varies Standard Message structure information not available	Message Phasing • 2 phase/sign, 3 sec/phase Standard Message structure information not available	Message Phasing • do not use Standard Message Structure: line 1: Type of Incident line 2: Location line 3: Impact	Message Phasing • 3 phase/sign Standard Message structure not yet developed	Message Phasing • 3 phase/sign, up to 8 sec/phase Standard Message structure not yet developed	Message Phasing • up to 3 phase/sign, 1.5 to 2 sec/phase Standard Message structure information not available	Message Phasing used, no specifics given Standard Message structure information not available	Message Phasing - no information given Standard Message structure consistent w/ I-95 coalition	Message Phasing - no information given Standard Message structure information not available	Message Phasing - 3 phases, 2.5 sec/phase Standard Message structure information not available	Message Phasing, 1 phase per sign, portion of message, 2-3 sec/phase Standard Message structure information not available
	Message Hierarchy/ Operations	1. Incidents 2. Congestion Management 3. Safety 4. Static (guide sign) Messages	no existing policy	no existing policy	Guideline Manual available from Pete Snyder (518) 457-1757	no existing policy	no existing policy	1. Freeway Closure 2. Major Incident 3. Other Incident 4. Unusual Congestion 5. Construction 6. Maintenance	information not available	information not available	1. Accident 2. Congestion 3. Road Work 4. Special Events 5. Other	information not available	is developed, not included in questionnaire	1. Incident Management 2. Construction/ Maintenance
	Message Selection	Permanent VMS • Manually and Automatically selected from library	Permanent VMS • Automatically selected from library	Permanent VMS • Manually selected from pre-defined library • Manually generated messages	Permanent VMS • Automatically selected from library • manually generated as needed	Permanent VMS • Manually selected from pre-defined library	Permanent VMS • Expert System • Manually selected from pre-defined library • Automatically selected from library • Manually generated	Permanent VMS • Manually selected from pre-defined library	Permanent VMS • Manually selected from pre-defined library	Permanent VMS • Manually selected from pre-defined library	Permanent VMS • Manually and Automatically selected from pre-defined library • Manually generated messages	information not available	Permanent VMS • Manually selected from pre-defined library • Manually generated messages	Permanent VMS • Manually selected from pre-defined library • Manually generated messages as needed

Table 3-1: Outside Agencies VMS Questionnaire Summary (Cont.)

		Ministry of Transportation - Ontario	City of San Antonio, TX	Washington DOT	New York DOT	Minnesota DOT	Kentucky DOT	Michigan ITS Center	Colorado DOT	Ohio DOT	Virginia DOT - Arlington	Virginia DOT - VDOT	Virginia DOT - Suffolk	Connecticut DOT
MESSAGE IMPLEMENTATION (Continued)	Message Selection (Continued)	Portable VMS • Manually selected from pre-defined library Incident messages generated automatically and operator approved. Other messages are sent automatically, based on time of day.	Portable VMS • Automatically selected from library Messages must be approved by supervisor	Portable VMS • Manually selected from pre-defined library • Manually generated messages All messages approved by operator	Portable VMS • Manually generated as needed Messages generated automatically and operator approved.	Portable VMS • Manually generated messages All messages approved by operator	Portable VMS • Expert System • Manually selected from pre-defined library • Automatically selected from library • Manually generated All messages approved by operator and supervisor	information not available All messages approved by operator	Portable VMS • Manually selected from pre-defined library All messages approved by operator	Portable VMS • Manually generated messages as needed All messages approved by operator	Portable VMS • Manually and Automatically selected from pre-defined library • Manually generated messages as needed All messages approved by operator	information not available information not available	Portable VMS • Manually selected from pre-defined library • Manually generated messages as needed All messages approved by operator	Portable VMS • Manually generated messages as needed All messages approved by operator
	Jurisdictional Control	No other agencies have direct access.	No other agencies have direct access.	Other agencies do have control in some area of the state. State Patrol, etc.	No other agencies have direct access.	DOT Maintenance has access during nights and weekends.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.
	Technology	Permanent VMS • LED • Fiber Optic/Flip Disk Portable VMS • Flip Disk Messages sent by centrally controlled custom software and communications protocol	Permanent VMS • Fiber Optic Messages sent by centrally controlled custom software and communications protocol	Permanent VMS • LED • Flip Disk • Fiber Optic, • Rotating Drum, • Incandescent Bulb Portable VMS • Flip Disk Messages sent by centrally controlled custom software and communications protocol, also can be install on location	Permanent VMS • Fiber Optic/Flip Disk Portable VMS • LED Messages sent by centrally controlled custom software and communications protocol.	Permanent VMS • LED • Rotating Drum Portable VMS • LED Messages sent by centrally controlled custom software and communications protocol.	Permanent VMS • Fiber Optic Portable VMS • LED	Permanent VMS • LED • Fiber Optic/ Flip Disk • Flip Disk Only	Permanent VMS • LED • Fiber Optic/Flip Disk Portable VMS • LED	Permanent VMS • LED Portable VMS • Fiber Optic/Flip Disk	Permanent VMS • LED • LED/Flip Disk • Flip Disk • Portable VMS • LED • Flip Disk	Permanent VMS • LED Portable VMS • LED • LED/Flip Disk	Permanent VMS • LED • Rotating Drum • Flip Disk Portable VMS • LED • Flip Disk •	Permanent VMS • LED • Flip Cube Portable VMS • Flip Disk

Table 3-1: Outside Agencies VMS Questionnaire Summary (Cont.)

		Ministry of Transportation - Ontario	City of San Antonio, TX	Washington DOT	New York DOT	Minnesota DOT	Kentucky DOT	Michigan ITS Center	Colorado DOT	Ohio DOT	Virginia DOT - Arlington	Virginia DOT - VDOT	Virginia DOT - Suffolk	Connecticut DOT
MESSAGE IMPLEMENTATION (Continued)	Technology (Continued)	Future Plans • upgrade and expansion of existing systems (Flip Disk to LED) • new VMS system on freeway network, possible graphic • portable VMS control by data radio from control center	Future Plans - information not available	Future Plans - In Seattle, permanent VMS at all major decision point on highway network; VMS expansion in other cities	Future Plans - install new TMS on 20 mile stretch, total of 18 signs	Future Plans - install LED VMS with new TMS installation throughout the metro area.	Future Plans include Incident Management Program for Louisville.	Future Plans include installation of 43 fiber optic/flip disk to 148 miles on freeway in Detroit area.	Future Plans - Upgrading exiting to flip fiber, installing new LED VMS	Future Plans - VMS will be part of future urban freeway management systems, developing procedures for use with rural work zone traffic control.	Future Plans - installation of all LED VMS, walk in type for easy maintenance	Future Plans: • developing state-wide network • rural interstate, remote dial-up • VMS state-wide	Future Plans: • include VMS in expansion of TMS • upgrading existing rotating drums	Future Plans - studies being conducted to determine the need for additional VMS.
	Communication	Permanent VMS • Dedicated Communication Network Portable VMS • Field Installation • Mobile Data Radio	Permanent VMS • Field Installation Only	Permanent VMS • Dedicated Comm Network Portable VMS • Remote Dial-In	Permanent VMS • Dedicated Comm Network Portable VMS • Remote Dial-In	Permanent VMS • Dedicated Comm Network • Field Installation Portable VMS • Remote Dial-In • Field Installation	Permanent VMS • Dedicated Comm Network • Remote Dial-In Portable VMS • Remote Dial-In	Permanent VMS • Dedicated Comm Network	Permanent VMS • Dedicated Comm Network • Remote Dial-In Portable VMS • Dedicated Comm Network • Remote Dial-In	Permanent VMS • Dedicated Comm Network • Remote Dial-In (Back-up) Portable VMS • Remote Dial-In • Field Installation	Permanent VMS • Dedicated Comm Network • Remote Dial-In Portable VMS • Remote Dial-In • Field Installation	Permanent VMS • Remote Dial-In Portable VMS • Remote Dial-In • Field Installation	Permanent VMS • Dedicated Comm Network • Remote Dial-In Portable VMS • Remote Dial-In • CDPD	Permanent VMS • Dedicated Comm Network • Remote Dial-In Portable VMS • Field Installation
DESIGN & MAINTENANCE	Installation/ Location Guidelines	guidelines exist, not included in questionnaire	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	guidelines do not exist	information not available	guidelines do not exist	guidelines do not exist
	Maintenance	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available	information not available

Table 3-2: Outside Agencies HAR Questionnaire Summary

		Washington DOT	Minnesota DOT	Kentucky DOT	Colorado DOT	Ohio DOT	Virginia DOT - TOC	Virginia DOT - VDOT	Virginia DOT - Suffolk
MESSAGE POLICY	Information Categories	Road Construction Severe Incidents Moderate Incident	Road Construction	Accidents Road Construction. Severe Incidents Moderate Incident. Gen. Public Transp. Events	Incidents that impact traffic Accidents Road Construction. Gen. Public Transp. Events	Any Incident	Road Construction. Severe and Moderate Incident. General Public Transp. Events	Road Construction Severe Incident	Road Construction Moderate Incidents
	Detection/ Verification/ Action	Information generated by motorist assist. Patrols and CCTV. Passive and Active Messages	Info. Generated from construction schedules Passive and Active Messages	Info. generated from motorist assist and police patrols Passive Messages Only	Info. generated for news media, motorist assist and police patrols, and info. provided motorists. Passive and Active Messages	Info. generated from automated incident detection algorithm Passive Messages Only	Passive and Active Messages	Info. Generated from motorist assist and police patrols, information from motorist, and reports from maintenance and construction sections. Passive and Active Messages	Info. generated from automated incident detection algorithm, count station data, and motorist assist patrols. Passive and Active Messages
	Message Content	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available	Standard Messages • information not available Abbreviations and Local Terminology • information not available
	Message Update	As events occur	As events occur	As events occur	As events occur	As events occur	As events occur	As events occur	As events occur
MESSAGE IMPLEMENTATION	Message Structure	no message structure in place	based on type of construction activity, may include diversion routes	Not yet developed	Messages are developed by public information specialist (24hr/day)	information not available	information not available	information not available	information not available
	Message Hierarchy/Operations	information not available	information not available	not yet developed	information not available	information not available	information not available	1. Incidents 2. Road Construction.	information not available
	Message Selection	Messages selected manually	Messages selected manually	Messages selected manually	Messages selected manually	Messages selected manually	Messages selected manually	Messages selected manually	Messages selected manually
	Jurisdictional Control	State Patrol and some local agencies have access. Typically do not coordinate w/ local jurisdictions	No other agency has direct access. Coord. to avoid overlapping signals	No other agency has direct access. Typically do not coordinate w/ local jurisdictions	No other agency has direct access. Coord. with Denver and CDOT as needed.	No other agency has direct access. Typically do not coordinate w/ local jurisdictions	Share use of some HAR systems with tourism agencies, they have default messages running and we dial up an emergency message that supersedes theirs.	Remote Dial-In agreement with County Police. They obtained the FCC license, VDOT bought the equipment.	No other agency has direct access. Typically do not coordinate w/ local jurisdictions

Table 3-2: Outside Agencies HAR Questionnaire Summary (Cont.)

		Washington DOT	Minnesota DOT	Kentucky DOT	Colorado DOT	Ohio DOT	Virginia DOT - TOC	Virginia DOT - VDOT	Virginia DOT - Suffolk
MESSAGE IMPLEMENTATION (Continued)	Technology	Permanent and Portable HAR • 10 Watt AM Band • 1610 AM	Portable HAR • 10 Watt AM Band • 530 kHz • 1610 kHz	Permanent and Portable HAR • 10 Watt AM Band • 530 and 580 AM Other systems • 1610 visitor info • 1610 airport info	Permanent HAR • 10 Watt AM Band • 530 kHz	Permanent and Portable HAR • 10 Watt AM Band • 530 and 580 AM	Permanent and Portable HAR • 10 Watt AM Band • frequency varies state wide	Permanent HAR • 10 Watt AM Band • 650 AM	Permanent and Portable HAR • 10 Watt AM Band • 530 AM Other Non-traffic systems • 1610 AM tourist info.
	Communications	Dedicated Communication Network and Remote Dial-In	Remote Dial-In	Dedicated Communication Network and Remote Dial-In	Remote Dial-In	Dedicated Communication Network and Remote Dial-In (back-up)	Field Installation and Remote Dial-In	Remote Dial-In	Remote Dial-In
DESIGN & MAINTENANCE	Installation/ Location Guidelines	No guidelines - use engineering judgment	Range of HAR to provide best coverage area - locations included in construction contracts	FCC Guidelines provide a wide area coverage	Before decision points, split of major roadways, fringe of Denver metro area for in/out bound information	Full coverage of instrumented network with coverage beyond the system to capture in-bound traffic.	Located at major detour/diversion routes	The area was divided into 19 sections, all major routes and primary alternate routes can be covered by one or more of the systems	Guidelines available but not included in questionnaire
	Maintenance	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available

Note: Michigan DOT, City of San Antonio, New York DOT, Ministry of Transportation - Ontario, and Connecticut DOT all responded to the questionnaire but do not currently operate HAR. All of these agencies have plans to implement HAR in the future.

Table 3-3: GCM Agencies VMS Questionnaire Summary

		Indiana DOT - LaPorte	Indiana DOT - Indianapolis	Illinois DOT	Wisconsin DOT
MESSAGE POLICY	Information Categories	Road Construction Severe Incidents Moderate Incidents Accidents/Crashes	Road Construction Lane Restricting Incidents Weather-related incidents Lane Restricting Maintenance Work	Road Construction Any Incidents	Road Construction Severe Incidents Moderate Incidents Accidents/Crashes Congestion
	Detection/Verification/ Action	Incident Management Messages determined by motorist assist patrol and verified by CCTV and police. Congestion Management Messages determined by count station data, police, and motorist assist patrols and verified by CCTV and motorist patrols. Passive and Active Messages Diversion Messages used for Freeway Closures w/ no verification of diversion route status Non-Traffic Messages - Safety, Construction, message board is not left blank	Incident Management Messages determined by motorist assist patrol and verified by CCTV. Congestion Management Messages - do not use Passive Messages Only Diversion Messages used for Freeway Closures, do not direct to a specific route Non-Traffic Messages - Tune to AM 530 (HAR), message board is not left blank	Incident Management Messages determined/verified by motorist assist patrol. Congestion Management Messages determined/ verified by count station data (lane occupancy). Passive Messages Only Diversion Messages - information not available Non-Traffic Messages - not used, message board is left blank	Incident Management Messages determined by automated incident detection algorithm, information provided by motorist, police, news media and verified by CCTV, county maintenance. Congestion Management Messages determined/ verified by count station data, news media, and CCTV. Passive Messages Only Diversion Messages - information not available Non-Traffic Messages - Ozone Action Day, special event directions and parking
	Message Content	Standard Messages • information not available Abbreviations and Local Terminology • Mileage used to identify locations	Standard Messages • information not available Abbreviations and Local Terminology • Mileage and Landmarks used to identify locations	Standard Messages • information not available Abbreviations and Local Terminology • Landmarks/Cross Streets used to identify locations	Standard Messages • information not available Abbreviations and Local Terminology • Landmarks used to identify locations
	Message Updates	information not available	information not available	information not available	information not available
MESSAGE IMPLEMENTATION	Message Structure	Message Phasing • No message phasing Standard Message Lines • Standard message structure not available	Message Phasing • Some message phasing, 4 phases/sign, max. 1.2 sec/phase Standard Message Lines • Standard message structure not available	Message Phasing • message phasing allowed - no specifics Standard Message Lines • Standard message structure not available	Message Phasing • All message phasing • 2 phases/sign • 2.5 sec/phase Standard Message Lines • line 1: Problem • line 2: Location • line 3: Action by Motorist OR Location
	Message Hierarchy/Operations	1. Incidents 2. Congestion 3. Non-Traffic Messages	1. Lane Restricting Incidents 2. Road Work 3. Default Messages	1. Emergency Information 2. Major Adverse Conditions 3. Congestion 4. Alternate Route Information 5. Minor Adverse Conditions 6. Specific Events 7. Blank	PEAK HOUR 1. Major Incidents 2. Four Levels of Traffic Flow 3. Host Messages OFF-PEAK HOUR 1. Major Incidents 2. Roadwork 3. Special Event 4. Minor Incident 5. Future Roadwork 6. Host Messages

Table 3-3: GCM Agencies VMS Questionnaire Summary (Cont.)

		Indiana DOT - LaPorte	Indiana DOT - Indianapolis	Illinois DOT	Wisconsin DOT
MESSAGE IMPLEMENTATION (Continued)	Message Selection	Portable VMS • expert system • manually and automatically selected from pre-defined library • manually generated messages as conditions warrant. • all operator approved	Portable VMS • expert system • manually selected from pre-defined library • manually generated messages as conditions warrant. • operator approval not mandatory	Portable VMS • manually selected from pre-defined library • manually generated messages as conditions warrant. Permanent VMS • automatically selected from pre-defined library for congestion • manually generated messages for incidents.	Portable VMS • manually selected from pre-defined library • manually generated messages as conditions warrant. Permanent VMS • manually and automatically selected from pre-defined library • manually generated messages as conditions warrant
	Jurisdictional Control	No other agencies have direct access.	No other agencies have direct access.	No other agencies have direct access.	Portable VMS • County Maintenance deploy their own • Construction Contractor deploy their own Permanent VMS • County Maintenance • County Sheriff (near future)
	Technology	Portable VMS • LED Solar, Flip Disk • Line Matrix w/ 3 line/sign, 8 char/line, 18” char • Messages installed via central controlled custom software and communications protocol Future Plans • 4 permanent VMS installations in the Borman Area over the next 2-yrs.	Portable VMS • LED/Flip Disk • Character Matrix - specifics • Messages installed via central controlled custom software and communications protocol	Portable VMS • Rent for Construction Activities • Line Matrix w/ 3 line/sign, 8 char/line • Messages Install - no information given Permanent VMS • Fiber Optic/Flip Disk • Line Matrix: 3 lines/sign, up to 21 char/line • Rotating Drum • 5x7 char, one font, upper case, single stroke • Message Install - no information given Future Plans • will have a total of 35 permanent CMS, 20 CMS now operational	Portable VMS • LED • Line Matrix w/ 3 line/sign, 8 char/line, 18” char • Message Install - information not available Permanent VMS • LED, Fiber Optic/Flip Disk, and LED Flip Disk • Full Matrix w/ graphics and inverse image, no color • Message Install - information not available Future Plans • plans include additional VMS installations
	Communications	Portable VMS • remote dial-in Permanent VMS • dedicated communications network	Portable VMS • remote dial-in, cellular and land line	Portable VMS • remote dial-in Permanent VMS • dedicated communications network	Portable VMS • remote dial-in/on-site Permanent VMS • dedicated communications network
DESIGN & MAINTENANCE	Installation/Location Guidelines	No fixed minimum/maximum distance between signs	No fixed minimum/maximum distance between signs	Minimum 500 ft. between signs, no fixed maximum distance between signs	No fixed minimum/maximum distance between signs
	Maintenance	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available

Table 3-4: GCM Agencies HAR Questionnaire Summary

		Indiana DOT - LaPorte	Indiana DOT - Indianapolis	Illinois DOT	Wisconsin DOT
MESSAGE POLICY	Information Categories	Road Construction Any Incident General Public Transportation Events	Road Construction Any Incident General Public Transportation Events Public Interest Messages from other agencies	Road Construction Severe Incidents Light to No-impact Incidents Real Time Congestion/Travel Times Snow Advisories	Road Construction Severe Incidents Only General Public Transportation Events
	Detection/Verification/ Action	Information generated from motorist assist patrols Passive and Active Messages	Information generated from motorist assist patrols, public information office, and other agencies Passive Messages Only	Information generated by motorist assist patrols, count station data, and maintenance/construction schedule Passive Messages Only	Information generated by news media, count station data, information provided by motorists, police and CCTV. Passive and Active Messages
	Message Content	Standard Messages • No standard messages developed at this time Abbreviations and Local Terminology • information not available	Standard Messages • No standard messages developed at this time Abbreviations and Local Terminology • information not available	Standard Messages • Standard messages available at (847) 705-4620 Abbreviations and Local Terminology • information not available	Standard Messages • No standard messages available Abbreviations and Local Terminology • information not available
	Message Updates	As events occur	As events occur	• As events occur • Daily • Every 5 minutes for automated travel time information	As events occur
MESSAGE IMPLEMENTATION	Message Structure	standard message structure not available	Typically a group of 30 second messages with a maximum message of 4 minutes	Sample message structure available at (847) 705-4620	standard message structure not available
	Message Hierarchy/Operations	information not available	information not available	Standards and guidelines are developed - not available to survey	No guidelines are established
	Message Selection	Messages developed manually and automatically	Messages developed manually and automatically	Messages developed manually and automatically	Messages developed manually
	Jurisdictional Control	No other agencies have direct access No coordination with other local jurisdictions	Current • Lake County Bureau of Tourism • Dunes National Lakeshore Future • Columbus Area Visitor Center • Evansville Traffic Engineering No coordination with other local jurisdictions	No other agencies have direct access No coordination with other local jurisdictions	No other agencies have direct access No coordination with other local jurisdictions
	Technology	Permanent HAR • Permanent 10 Watt AM Band • 530KHz AM No other non-traffic systems	Permanent HAR • Permanent 10 Watt AM Band • 530KHz AM • 820 KHz AM No other non-traffic systems	Permanent HAR • Permanent 10 Watt AM Band • 530KHz • 1610 KHz Other non-traffic Systems • (Glenn Ellyn) Public Safety/Tornado • (Bensenville) • O'Hare Airport Parking • Tinley Park (World Theater) • Illinois/Michigan Canal	Permanent HAR • Permanent 10 Watt AM Band • 1610 KHz (Milwaukee County Stadium) No other non-traffic systems Portable HAR (1620 KHz) in the near future
	Communications	Currently Remote Access - soon to have Dedicated Communications Network	Remote Dial-In	Dedicated Communications Network	Remote Dial In

Table 3-4: GCM Agencies HAR Questionnaire Summary (Cont.)

		Indiana DOT - LaPorte	Indiana DOT - Indianapolis	Illinois DOT	Wisconsin DOT
DESIGN & MAINTENANCE	Installation/Location Guidelines	guidelines are under preparation	Location must provide adequate diversion opportunities to the motorist in advance of trouble spots.	Located in the vicinity of diversion or route decision to allow motorists alternate main route.	Need a wide open area to put up antennas - both horizontal and vertical
	Maintenance	Maintenance information not available	Maintenance information not available	Maintenance information not available	Maintenance information not available