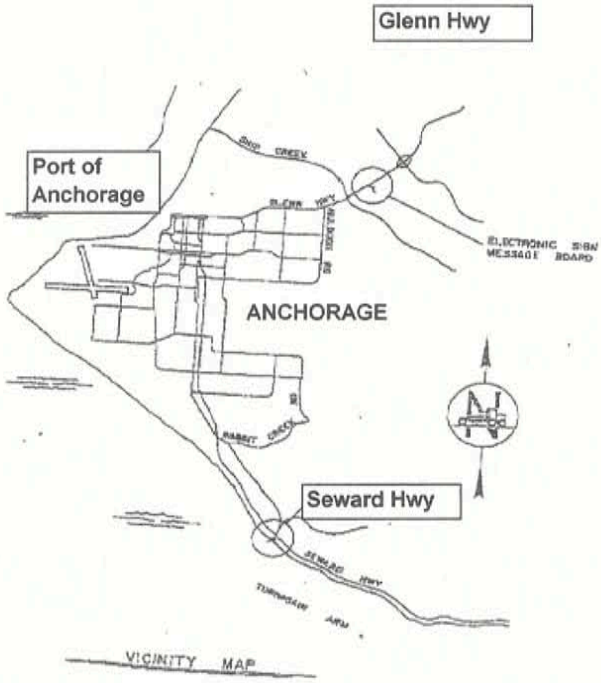
Southcentral Alaska

PERMANENT
CHANGEABLE MESSAGE SIGNS (CMS)
PART 1: SIGN OPERATIONS MANUAL



STATE OF ALASKA

Department of Transportation & Public Facilities
Department of Public Safety, Alaska State Troopers

Anchorage, Alaska

William A. Abbott — 4/15/04

Regional Director
Central Region DOT/PF
Anchorage, Alaska

Date

Julia P. Commes — 4-18-04

Colonel
Alaska State Troopers
Headquarters
Anchorage, Alaska

Date

Part 1

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Permanent Changeable Message Sign (CMS) Operations Manual

MESSAGE APPROVALS as of 3/6/06

Responsibility		Name	Position	Department	Task	Phone	Fax	email
PRIMARY CONTACTS: DIRECT ALL INITIAL REQUESTS TO SIGN OPERATIONS SUPERVISOR								
MESSAGE DISPLAY		On Duty Officer	Supervisor's Desk	Anchorage Police Department	Sign operators, Receive calls, approved requests for messaging	**786-8926**		
		Sgt. Richard Stouff	Dispatch Manager or Designated Supervisor	Anchorage Police Department	Emergency Communications Center,Message Adjudication	786-8555		rstouff@ci.anchorage.ak.us
SECONDARY CONTACTS: AUTHORIZED MESSAGE APPROVERS								
		Supervisors	Emergency Operations Manager	Statewide Emerg Ops Center, MOA Emerg Ops Center	**During an Emergency Event**	343-1400		
In principal order of Consultation		Sgt. Richard Stouff	Dispatch Manager or Designated Supervisor	Anchorage Police Department	Dispatch Supervisor, Message Adjudication	786-8555		rstouff@ci.anchorage.ak.us
		Jack Fullerton	M&O Chief or Designee	DOT/PF	Road Maintenance, Condition Supervisor	269-0767	248-1573	jack_fullerton@dot.state.ak.us
		Tom Moll	M&O Manager	DOT/PF	Assistant to Chief of M&O	269-0756	248-1573	tom_moll@dot.state.ak.us
Any one source is sufficient to make a posting		Scott Thomas	Regional Traffic Engineer	DOT/PF	Traffic & Safety Engineer, Message Adjudication	269-0639	269-0654	scott_thomas@dot.state.ak.us
		Ron Martindale	Hwy Safety Imprvmt Program Coordinator	DOT/PF	Hwy safety related messages	269-0643	269-0654	ron_martindale@dot.state.ak.us
		Joe Hartley	Work Zone Traffic Control Coordinator	DOT/PF	Construction & Work Zone Traffic Control for Southcentral AK	269-0635	269-0654	joe_hartley@dot.state.ak.us
		Supervisors	Higher level supervisors of above: incl. Commissioners, Directors, Chiefs, PR Office Spokespersons	DOT/PF, AST	Supervisors to requestor positions listed below	269-0700 DOT or 269-5511 AST		
PORT SIGN ONLY		Aves Thompson	Director, Div. of Weights and Measures	DOT/PF	or staff as designated	341-3210		aves_thompson@dot.state.ak.us
TERTIARY CONTACTS: ACCEPTED REQUESTORS & VERIFIERS OF REQUESTS					(or their designee, subject to this policy, qualified for onsite verification)			
		City Police	Supervising On-Scene Officers or their supervisors	APD	Road safety related messages	786-8900		
		State Troopers	Detachment Supervisor on Duty (Lt, Maj), or Anchorage HQ Admin Supervisors	Alaska State Troopers	Supervising Trooper	269-5511		
		State Troopers	MatCom Dispatch Operations Supervisor	Alaska State Troopers		428-7200		
		Jack Fullerton	M&O Chief	DOT/PF	Southcentral AK Road Maintenance, Condition Supervisor	269-0767	248-1573	jack_fullerton@dot.state.ak.us
		Kurt Devon	Mat-Su M&O Superintendent	DOT/PF	Mat Su Road Maintenance, Condition Supervisor	269-0782	746-2306	kurt_devon@dot.state.ak.us
		Chuck Swenor	Anchorage M&O Superintendent	DOT/PF	Anchorage Road Maintenance, Condition Supervisor	338-1432	337-6811	chuck_swenor@dot.state.ak.us
		Carl High	Kenai M&O Superintendent	DOT/PF	Kenai Peninsula Road Maintenance, Condition Supervisor	262-2199	262-5343	carl_high@dot.state.ak.us
Any one source is sufficient to make a posting		Scott Thomas	Regional Traffic Engineer	DOT/PF	Traffic & Safety Engineer, Message Adjudication	269-0633	269-0654	scott_thomas@dot.state.ak.us
		Pat Wittrock	Chief of Highway Construction	DOT/PF	Supervisor of Southcentral AK Highway Construction	269-0450	243-5092	pat_wittrock@dot.state.ak.us
		Joe Hartley	Work Zone Traffic Control Coordinator	DOT/PF	Construction & Work Zone Traffic Control for Southcentral AK	269-0635	269-0654	joe_hartley@dot.state.ak.us
		Vacant	Avalanche Control Coordinator	DOT/PF	Avalanche closure requestor, Seward Hwy	783-2772	783-2047	
		Larry Bushnell	M&O Foreman, Girdwood	DOT/PF	Girdwood/Alyeska Road Maintenance, Condition Supervisor	783-2232	783-2047	larry_bushnell@dot.state.ak.us
No Priority Order		Ron Martindale	Hwy Safety Imprvmt Program Coordinator	DOT/PF	Hwy safety related messages	269-0643	269-0654	ron_martindale@dot.state.ak.us
		Cindy Cashen	Director, Alaska Hwy Safety Office	DOT/PF	Safety Campaign Related Messages	465-4371	465-4030	cindy_cashen@dot.state.ak.us
		Emerg Svcs	Fire, EMT ranking on-scene Supervisors or their supervisors	AFD	Incident related messages	267-4936		
Port Sign ONLY		Staff	Commercial Vehicle Stds and Enforcement	DOT/PF MSCVE		341-3210		

** Message validation means an approved official has verified the need for the message and determined an appropriate clear, concise text*

Message validation means an approved official has verified primary traffic control or motorist information has been implemented, and then requests a supplemental message

MESSAGE APPROVALS as of 3/6/06

Responsibility		Name	Position	Department	Task	Phone	Fax	email
OTHER MESSAGE REQUESTORS								
Subject to validation or approval by an official above		Legislative requests						
		Governor's Office						
		Public requests						
		Other agency requests						
		Ft Rich	Provost Marshall		Security, Event related messages	384-0825	384-6347	eric.carlson@richardson.army.mil or, michael.j.jennings@us.army.mil
		EAFB	Security		Security, Event related messages	552-4304	552-0944	
		Law Enforcement	On-Scene Officers					
SIGN MAINTENANCE								
Glenn/Swd Hwys		Ed Caress	Electrical Supervisor	DOT/PF	Electrical Maint	338-1436	cel 440-8461	ed_caress@dot.state.ak.us
Port Sign ONLY		Staff	Division of Weights and Measures	DOT/PF		341-3210		

MESSAGE PRINCIPLES

KEY PRINCIPLES

Better to not to display a message than an inaccurate one

Only display times that are reliable and correct

Use terms with clearly defined/understood meanings

Be consistent with messages - timing (Use each time condition occurs)

Be consistent with messages - format (Use library)

Do not overuse or prolong messages (becomes meaningless as drivers adjust to conditions)

See Part 2 for more instruction on messaging practices and designing messages

QUESTIONS TO ASK

Potential Message - Is there a Problem? Location? Action?

1 Is the problem on the highway?

Display of the Basic Rules of the Road, Laws are not direct highway problems

Off road conditions are not highway related

Most fairs, destination festivals, and events do not create problems, affect locations,

or require actions on the main highway. In no way should a message advertise an event.

Instead, special events must affect the highway operations to be a message candidate, see Recommended Messages.

Impacts not related to the Seward, Glenn, Parks, Sterling Highways

are better candidates for local messaging rather than regional SYLVIA sign use

2 Does the problem directly impact mainline through highway traffic?

3 Is there a specific location affected on the highway?

4 Is there a specific highway action the through motorist needs to know?

5 Is there a specific highway action the through motorist will automatically be able to determine?

i.e. If the road is closed, then the implied action is to stop, turn around, or wait onsite.

i.e. If there are severe weather conditions or road surface conditions,

the motorist should adjust their driving, use caution or reduce speed as implied.

It is more desirable to provide the action than leave it implied.

In some cases, there is simply not enough sign board space, thus an implied action is adequate

MESSAGE PRIORITIZATION

Emergencies	Tsunami Warning, Evacuations, Earthquakes, Civil Defense, Emergency Security operations affecting highway users All must be cases of certain, urgent, immediate, and severe threats to motorists or the public at-large
AMBER Alerts	Subject to Alaska Amber Alert Policy, FHWA messaging requirements for sufficient, effective information
Road Closures	Incl. Avalanches, Rockslides, Accidents, Construction, Spills, Fires, Incidents Exact locations nearest to the signs are highest priority
Road Surfaces	Severe Ice, Mud, Water, Flooding, Pvmt Failures Exact locations nearest to the signs are highest priority
Weather	Severe Snow, Fog, Smoke, Snow or Dust Exact locations nearest to the signs are highest priority
Events	Emergency closures, cancellations affecting the Highway Largest events, > 500 vph or >10% AADT, closest proximity to road lanes are highest priority
Safety Campaigns	Subject to attached rules, limited, targeted events, broader campaigns Primary relationship to road users and accidents: alcohol, seatbelt use
Construction	Nonclosure events

MESSAGE DURATION

Messages should last one to four days, but can be longer; ultimately they depend on the duration and severity of the condition
Require the message Requestor or Authorizer to stay in touch.
As the Operator, request they keep you posted of changes or elimination of road, traffic, weather conditions
Remove all messages as soon as possible when traffic conditions no longer exist

RECOMMENDED MESSAGE LIBRARY

BY SUBJECT			NOTES
18 Characters per Line			All Hwy Related, All Problem, Location, and Action or Clearly Implied Action
IDEAL MESSAGE FORMAT	PROBLEM LOCATION ACTION		Ideally one board, no flashing messages
ACCIDENT	ACCIDENT 6 MI AHD GLENN CLOSED USE HILAND EXIT	or ACCIDENT LEFT LANE CLOSED AT EKLUTNA	To be determined by lead police agency
	ACCIDENT AT MP 52 STERLING CLOSED TWO HOUR DELAYS	or MAJOR ACCIDENT GLENN HWY MP 100 ROAD CLOSED	
AMBER ALERT	**AMBER ALERT** **CHILD ABDUCTION** **CALL 511 FOR INFO**	or **AMBER ALERT** **LIC DBY 523** **CALL 511 FOR INFO**	Activate when required per Amber Alert Policy **Can override most other sign messages** Cannot override Emergency Management Plans Cannot override portable message boards in use by others
	AMBER ALERT **CHILD ABDUCTION** **TUNE TO 750 AM**	**1 to 3 hour usage typical**	Limit specific information to one panel display so it is easily memorized at a glance To be determined by police agency
AVALANCHE	AVALANCHE OLD GLENN CLOSED USE NEW GLENN	or AVALANCHE SEASON SEWARD HWY DO NOT STOP	From a DOT Avalanche expert or avalanche danger rating system Location known, not part of an overall safety campaign
	AVALANCHE __ MI AHD ROAD CLOSED OPEN AT __ PM	or SNOW SLIDE AREA OLD GLENN HWY USE CAUTION	See safety campaign for generic messages
	AVALANCHE SEWARD HWY CLOSED AT BIRD CREEK ESTIMATED OPENING AT NOON	or AVALANCHE SEWARD HWY CLOSED AT _____ ESTIMATED OPENING AT 1 PM	Flashing two panel message
	AVALANCHE WORK IN PROGRESS 25 MILES AHEAD INTERMITTENT CLOSURES 30 MIN DELAYS		
	AVALANCHE WORK BIRD CK TO PORTAGE xx MIN CLOSURES	or AVALANCHE WORK SUMMIT LK TO THE Y xx MIN CLOSURES	
	AVALANCHE SEWARD HWY CLOSED AT BIRD CREEK	or AVALANCHE ROAD CLOSED MP 100	
BRIDGES	LOW CLEARANCE EKLUTNA BRIDGE TRUCKS USE RAMPS	or BRIDGE WORK AHD __'__" WILL NOT CLEAR	Use for temporary clearance reductions
		BRIDGE WORK AHD __'__" TRUCKS USE RAMPS	Use for temporary clearance reductions

BY SUBJECT			NOTES
18 Characters per Line			All Hwy Related, All Problem, Location, and Action or Clearly Implied Action
CIVIL DEFENSE	ALL VEHICLES TAKE HILAND EXIT	or	ALL VEHICLES STOP AT WEIGH STATION	
DUST	DRIFTING SAND KNIK RIVER OLD GLENN HWY	or	BLOWING DUST GLENN HWY PALMER HAY FLATS	Use when visibility is decreased significantly below 1/4 mile or less
EVACUATION	EVACUATION RTE ALL LANES NORTH NO EXIT AT RAMPS	or	TSUNAMI ROUTE NO LANE CHANGES NO EXIT AT RAMPS	
FLOODS	FLOOD DETOURS STERLING HWY COOPER LANDING	or	OBEY FLAGGERS AT FLOOD AREAS NEXT __ MILES	
	SEWRD HWY FLOODING ROAD CLOSED AT SNOW RIVER			
FOG	FOG & FRZING RAIN AT KNIK RIVER USE CAUTION	or	HEAVY FOG EKLUTNA TO KNIK R REDUCE SPEED	
ICE Freezing Road	CAUTION FREEZING RAIN __ MI AHEAD	or	WATCH FOR ICE GLENN HWY EAGLE RIVER	First Time large seasonal weather event is acceptable Routine events lose effect after few days **Verify and Review icing, road surface conditions with DOT/PF M&O Chief, CARS 511 or authorized verifier to confirm conidtions are severe**
	WATCH FOR ICE KNIK RIVER BRIDGE REDUCE SPEED	or	FREEZING RAIN EKLUTNA TO KNIK R USE CAUTION	Needs to be an extreme, uncommon event determined from Road Weather Information System data, or onsite inspection
INCIDENT MGMT	EMERGENCY VEHICLES EAGLE RIVER BRIDGE REDUCE SPEED	or	HAZMAT SPILL COOPER LANDING ROAD CLOSED	
	EMRGNCY EVACUATION FORT RICH EXIT CLOSED	or	TSUNAMI EVACUATION USE NEXT 3 EXITS TUNE TO AM 650	
	EXIT AT HILAND EXIT AT ARTILLERY TUNE TO AM 650			
	TRUCK TURNOVER IN WILLOW TWO HOUR DELAY		GLENN HWY CLOSED AT MILE 96 UNTIL 6 PM	
ROAD CLOSED	GLENN CLOSED 6 MI AHD USE HILAND EXIT	or	PARKS CLOSED AT TRUNK RD USE ALTERNATE RT	See also Construction Notices in Newspaper (Navigator) See also www.CARS511.org website or Dial 511 for notices
	ROAD CLOSURE __ MI AHEAD OPEN AT __ PM	or	RICHARDSON HWY CLOSED N OF GLENNALLEN	**Review construction notices with DOT/PF Work Zone Traffic Control Coordinator or DOT/PF Construction Chief**
ROAD WORK	ROAD CONSTRUCTION AT SUTTON 30 MIN DELAYS	or	PARKS HWY ONE LANE TRAFFIC MILE 154 TO 250	See MUTCD Part VI for Road Construction for more restrictions on Portable CMS Signs for Highway Construction

BY SUBJECT				NOTES
18 Characters per Line				All Hwy Related, All Problem, Location, and Action or Clearly Implied Action
	TRUCKS ENTERING HIGHWAY AT N BIRCHWOOD	or	ROAD WORK AHD FOUR MILES EXPECT DELAYS	Use for significant impacts which cause long delays or queues
ROCKS	ROCK WORK SEWARD HWY WINDY POINT	or	ROCK WORK GLENN HWY MOOSE RIVER	Use when active slides are causing large materials on road and clean up efforts are underway per M&O inspection
	ROAD WORK SEWARD HWY WINDY POINT	or	WATCH FOR ROCKS GLENN HWY MOOSE RIVER	Optional messages
	ROCKS ON ROAD GLENN HWY AT CARIBOU CRK			For rockfall that may occur while cleanup is in operation
ROUGH ROAD	ROUGH ROAD WASILLA TO HOUSTON EXPECT DELAYS			Use only if routine construction and maintenance signs will not be adequate notice for motorists and will severely affect their trip planning
	ROUGH PAVEMENT NORTH OF EKLUTNA TWO HOUR DELAYS	or	PAVEMENT DAMAGE OLD GLENN HWY USE ALT ROUTE	
SECURITY	RAMP BACKUP AT FT RICH GATE BE PREPARED TO STOP	or	SECURITY DELAYS AT FT RICH GATE KEEP LEFT	Use when backups or delays create queues of at least 2 miles or longer
	CAUTION SLOW TRAFFIC AHEAD			
	STOPPED VEHICLES EAGLE RIVER HILL BE PREPARED TO STOP	or	TRAFFIC DELAY AHD EAGLE RIVER HILL BE PREPARED TO STOP	
	TRAFFIC CONGESTION AHEAD PREPARE TO STOP			Use when congestion is near sign in 6 lane section Stop and go traffic
SMOKE/FIRE	SMOKE LOW VISIBILITY STERLING HWY MI 140 REDUCE SPEED	or	SMOKE LOW VISIBILITY AT HOUSTON ROAD CLOSED	
	GLENN HWY CLOSED TO FIRE 100 MI AHD	or	FIRE CONTROL SEWARD HWY MI 20 USE CAUTION	
	OPEN BURN GLENN HYW MP __ TUNE TO ____	or	FIRE NEAR ROAD SEWARD HWY MI 50 USE CAUTION	**Weather Messages:** **Require Requestor or Authorizer to update Operator** Monitor conditions and change messages as soon as conditions stop occurring See CARS 511 or RWIS Stations for extra information
SNOW	BLOWING SNOW NEXT 40 MILES REDUCE SPEED	or	BLOWING SNOW AHD ONE LANE TRAFFIC REDUCE SPEED	
	BLIZZARD CONDITIONS PARKS HWY NORTH USE CAUTION	or	BLOWING SNOW __ MI AHEAD USE CAUTION	

BY SUBJECT				NOTES
18 Characters per Line				All Hwy Related, All Problem, Location, and Action or Clearly Implied Action
	BLIZZARD CONDITIONS DRIFTING SNOW AHD REDUCE SPEED	or	REDUCED VISIBILITY BLOWING SNOW AHD REDUCE SPEED	
	BLOWING SNOW REDUCED VISIBILITY IN PORTAGE AREA	or	BLIZZARD CONDITIONS TURNAGAIN PASS USE CAUTION	
SPECIAL EVENTS	BICYCLES ON ROAD N OF EAGLE RIVER USE CAUTION	or	PEDESTRIANS ON RD WASILLA TO WILLOW USE CAUTION	
	BIKES ON SHLDR N OF EAGLE RIVER USE CAUTION	or	RACE CROSSING PARKS HWY - WILLOW REDUCE SPEEDS	
	BIKE EVENT CROSSING SEWARD HWY MP 100 REDUCE SPEED	or	SLED DOG CROSSING PARKS HWY - WILLOW USE CAUTION	Use when event attracts large crowds that may inadvertently collect on or near roadway. Std signs will address xing.
	ALASKA STATE FAIR CANCELLED TODAY	or	TWO MILE BACKUPS AT STATE FAIR DELAY TRAVEL	Do not use to advertise Fair Do not use for minor delays < 20 minutes per vehicle average even if all day event Use only for significant closures, > 2 mile queues or long delays on Glenn Hwy
	FOREST FAIR CANCELLED TODAY	or	ONE HOUR DELAY AT ALYESKA JCT DELAY TRAVEL	Do not use to advertise Fair Do not use for minor delays < 20 minutes per vehicle average even if all day event Use only for significant closures, > 2 mile queues or backups extending from Alyeska Hwy onto Seward Hwy
TUNNELS	WHITTIER TUNNEL CLOSED FOR REPAIR OPENS THURSDAY	or	WHITTIER TUNNEL CLOSED TO TRAFFIC USE PORTAGE TRAIN	Use for major disruption to traffic on Seward Highway, or unscheduled delays of one hour at tunnel entrance
	WHITTIER TUNNEL DELAYS TUNE RADIO TO 830 AM			
TRUCKS	COM VEHICLES ONLY CHAINS REQUIRED NORTH OF WILLOW	or	GLENN HWY 75 PERCENT LOAD LIMIT	For special regulation impacts Static regulatory signing also required
			ALL TRUCKS OVER 10,000 GVW 75 PERCENT LIMIT	
WIND	HIGH WINDS NEXT 40 MILES REDUCE SPEED	or	CAUTION HIGH WINDS PALMER HAY FLATS	Use when winds exceed 80 mph gusts as per RWIS or other onsite information when available
	HIGH WINDS TURNAGAIN ARM USE CAUTION	or	STRONG CROSS WIND PALMER HAY FLATS USE CAUTION	
FOLLOW UP	SEWARD HIGHWAY OPEN	or	ROAD IS OPEN THANK YOU	Use after a long duration closure or change in road conditions which have lasted for 12-24 hours
	ROAD OPEN DRIVE SAFELY	or	ROAD OPEN HAVE A GOOD TRIP	Use <12 HRS, Not needed next morning, opening is expected. Useful in evening if change occurs during day.

ROAD SAFETY CAMPAIGN MESSAGES

Message		Road Related ?	Clear Road Message?			Notes
		All Thru Hwy Motorists Affected?	Problem	Location	Action	
PROBLEM LOCATION ACTION		YES	■	■	■	Ideal Message
NEW LAW REQUIRES HEADLIGHTS ON WHEN ON THE SEWARD HWY	1994	YES	■	■	■	Past Example mid-1990's
AVALANCHE SEASON DO NOT STOP IN AVALANCHE ZONES	2002	YES	■	■	■	Zones are signed on Seward Hwy Use in early spring for two weekends FRI thru SUN
DON'T DRINK AND DRIVE	2003	YES	Implied	All	■	Typically over Christmas, New Years 4th of July Holidays
YOU DRINK YOU DRIVE YOU LOSE	2003	YES	Implied	All	■	Surrounding midsummer, midwinter holidays Christmas, New Years Holidays - <=15 days 4th of July Holiday - 5 days Can be continuous between holidays
OBEY SPEED LIMITS PASS SAFELY DRIVE CAREFUL	2003	YES	Implied	All	■	In responses to accident anomaly, OR End of season Salmon Derby, State Fair Only when there is a stepped up enforcement and media effort
GLENN SPEED LIMIT 65 MPH ENFORCED		YES	?	■	■	As part of a stepped up enforcement and informational campaign officer presence visible on highway
6 DEATHS IN 8 DAYS PASS SAFELY	2003	YES	■	All	■	Accident anomaly response, typically Only when there is a stepped up enforcement and media effort ticketing w/more than one vehicle
CLICK IT OR TICKET USE YOUR SEATBELTS	2003	YES	Implied	All	■	Surrounding spring and fall holidays Memorial Day Weekend - up to 5 days Labor Day Weekend - up to 5 days
BUCKLE UP! IT'S THE LAW		YES	Implied	All	■	

Message		Road Related ?	Clear Road Message?			Notes
		All Thru Hwy Motorists Affected?	Problem	Location	Action	
WATCH FOR MOTORCYCLES ON RD MONTH OF MAY	2003	YES	Implied	All		First weekend, first 4 days of National Motorcycle Awareness Month
STUDDED TIRES ALLOWED TUESDAY SEP 16		YES		All		FRI thru MON commute days prior to opening day Frees up 911 phones from unnecessary calls
STUDDED TIRES ILLEGAL WED MAY 16		YES		All		FRI thru MON commute days prior to deadline Frees up 911 phones from unnecessary calls
ALL TRUCKS STOP BRAKE CHECK AT WEIGH STA		YES	?			As part of a stepped up enforcement

SAFETY CAMPAIGN MESSAGING PROCEDURES

1 Messages must be highway related, targeting motorist behavior, road conditions, weather conditions, motor vehicle usage
2 Messages must be supplemental, not primary, as part of a broader organized media effort or agency campaign
3 Messages must be official policy or program of the State of Alaska and its agencies
4 Messages must be approved through the DOT/PF or DPS per approvals chart
5 Duration of message must relate to a specific campaign, i.e. holiday weekend, weather event, or program 5 days/month
6 Official messages must be determined by law or an agency directive, modified through one of the following authority levels:

Regional Director or Commissioner of DOT/PF
Headquarters Commander or Commissioner of DPS
Deputy Commissioner or Deputy Director Level of DPS or DOT/PF

TYPICAL MESSAGING CALENDAR
PUBLIC SAFETY CAMPAIGNS
(Shown in generic four week months)

JANUARY

SUN	MON	TUE	WED	THUR	FRI	SAT
Don't Drink & Drive	*New Years Day*	Don't Drink & Drive				

FEBRUARY

SUN	MON	TUE	WED	THUR	FRI	SAT

MARCH

SUN	MON	TUE	WED	THUR	FRI	SAT
					Avalanche Danger	Avalanche Danger
Avalanche Danger						

APRIL

SUN	MON	TUE	WED	THUR	FRI	SAT
					Motorcycle Awareness Month	Motorcycle Awareness Month

MAY

SUN	MON	TUE	WED	THUR	FRI	SAT
Motorcycle Awareness Month	Motorcycle Awareness Month					
					Studded Tire Use	Studded Tire Use
Studded Tire Use	Studded Tire Use					
				Buckle Up Seatbelts	*Memorial Day*	Buckle Up Seatbelts

JUNE

SUN	MON	TUE	WED	THUR	FRI	SAT
Buckle Up Seatbelts						

JULY

SUN	MON	TUE	WED	THUR	FRI	SAT
			Don't Drink & Drive	*4th of July*	Don't Drink & Drive	Don't Drink & Drive
Don't Drink & Drive						

AUGUST

SUN	MON	TUE	WED	THUR	FRI	SAT
					Speed Limits, Passing	Seward Salmon Derby
Speed Limits, Passing				*Alaska State Fair*	Speed Limits, Passing	Speed Limits, Passing
Speed Limits, Passing					Buckle Up Seatbelts	Buckle Up Seatbelts

Driving Holidays shown in italics
Road safety campaign messages are shown targeted around holidays

TYPICAL MESSAGING CALENDAR
PUBLIC SAFETY CAMPAIGNS
(Shown in generic four week months)

SEPTEMBER

SUN	MON	TUE	WED	THUR	FRI	SAT
Buckle Up Seatbelts	*Labor Day*					
					Studded Tire Use	Studded Tire Use
Studded Tire Use	Studded Tire Use					

OCTOBER

SUN	MON	TUE	WED	THUR	FRI	SAT

NOVEMBER

SUN	MON	TUE	WED	THUR	FRI	SAT

DECEMBER

SUN	MON	TUE	WED	THUR	FRI	SAT
				Don't Drink & Drive	*Christmas Holiday*	Don't Drink & Drive
Don't Drink & Drive					Don't Drink & Drive	Don't Drink & Drive

Driving Holidays shown in italics
Road safety campaign messages are shown targeted around holidays

PROBLEM MESSAGES

	Road Related ?	Clear Road Message?			
	All Thru Hwy Motorists Affected?	Problem	Location	Action	Notes
PROBLEM LOCATION ACTION	YES				Ideal Message
HAPPY HOLIDAYS	NO	x	x	x	
DON'T MISS THE ALASKA STATE FAIR	NO	x	x	x	No significant road impact or action required
VISIT THE TALKEETNA MOOSE DROPPING FESTIVAL	NO	x		x	No significant road impact or action required
HIGH FIRE DANGER KENAI PENINSULA NO FIRES PERMITTED	NO		?		No significant road relation or action required Use Forest Boundary Signs instead
FIRE DANGER HIGH FIREWORKS BANNED IN ANCHORAGE	NO		?		No significant road relation or action required Use Boundary signs instead
DANGEROUS ROAD CONDITIONS	YES		x	x	Not specific problem, location, or action Danger and safety too relative a term Need specific condition, location, action
WATCH FOR HAZARDOUS CURVES	YES		x		No specific location Hazardous a relative term Need specific condition, location, action
BEWARE OF INCREASING AVALANCHE DANGER BE CAREFUL	?	YES	x	?	Purpose may not be highway specific Used in early spring for two weekends
6 AVALANCHE DEATHS IN 2002 BE CAREFUL	?	YES	x	?	Highway motorist, auto travel not impacted Used in early spring for two weekends

ALLOWABLE ABBREVIATIONS

AM	SPEED LIMIT AHD __ MPH
PM	REDUCE SPEED
ALT	USE FRNTG RD
AVE	HAZ DRIVING
BIKE	OVRSZ LOAD
BLVD	ACCS ROAD
CANT	FOG AHD
CB	LANE BLKD
XING	KNIK R BRDG
EMER	TRAFFIC COND
SHLDR	TRAFFIC CONG
CLOSD	TRAFFIC DWNTN
USE ALT ROUTE	BE PREP TO STOP
TRAVLRS ALERT	WET PVMT
WARN	RDWK AHEAD __ MI
STALLED VEH	NITE
	CONST

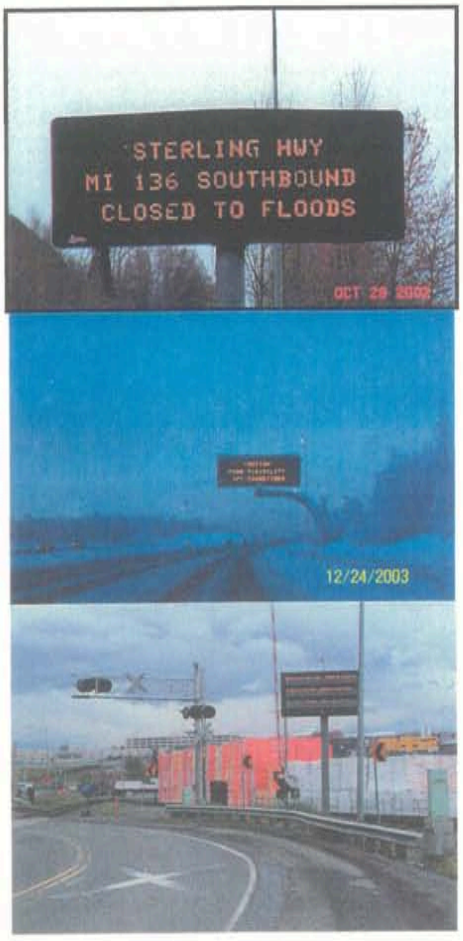
Earlier Messages (1990's)

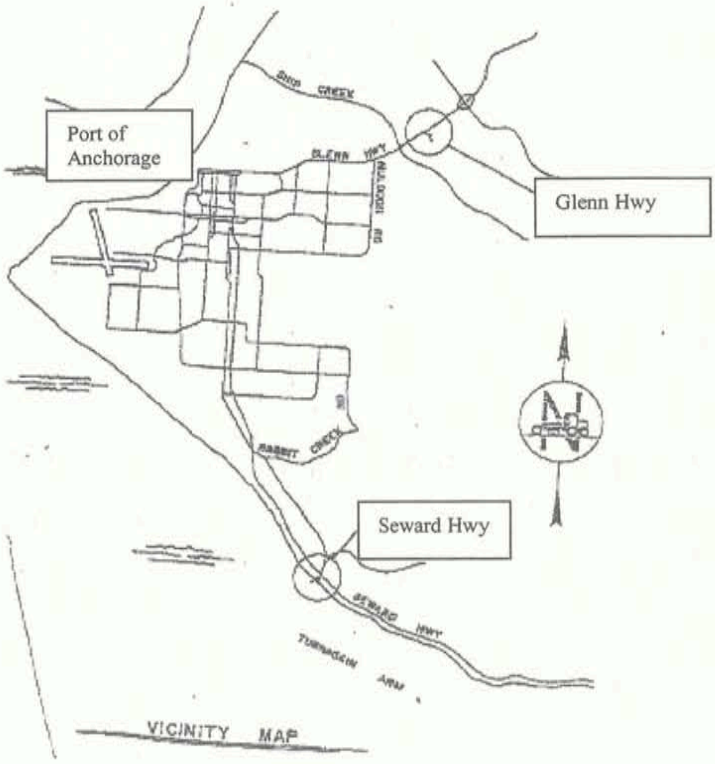
Past Messages	Direct Thru Hwy Impact? All Thru Hwy Motorists Affected?	Clear Highway Instr. to Motorist? Problem	Location	Action	Notes	RECOMMENDED REWRITE
BEWARE OF INCREASING AVALANCHE DANGER BE CAREFUL	YES		x	?		AVALANCHE OLD GLENN HWY USE NEW GLENN
6 AVALANCHE DEATHS IN 2002 BE CAREFUL	?	?	x			AVALANCHE SEASON SEWARD HWY DO NOT STOP
AVALANCHE SEWARD HWY CLOSED AT BIRD CREEK ANTICIPATED OPENING AT NOON	YES					AVALANCHE SEWARD HWY CLOSED AT BIRD CREEK ESTIMATED OPENING AT NOON
AVALANCHE SEWARD HWY CLOSED ANTICIPATED OPENING AT 1 PM	YES		x			AVALANCHE SEWARD HWY CLOSED AT _____ ESTIMATED OPENING AT 1 PM
AVALANCHE WORK IN PROGRESS INTERMITTENT CLOSURES	YES		x	?		AVALANCHE WORK IN PROGRESS XX MILES AHEAD INTERMITTENT CLOSURES 30 MIN DELAYS
SEWARD HWY AVALANCHE DANGERS HIGH	YES			x		AVALANCHE SEASON SEWARD HWY DO NOT STOP
AVALANCHE CONTROL WORK IN PROGRESS BIRD CK TO PORTAGE INTERMITTENT CLOSURES BETWEEN 8:30 AM AND 4:00 PM	Yes					AVALANCHE WORK BIRD CK TO PORTAGE XX MIN CLOSURES
AVALANCHE SEWARD HWY CLOSED BIRD CREEK	Yes					AVALANCHE SEWARD HWY CLOSED AT BIRD CREEK

Past Messages	Direct Thru Hwy Impact?	Clear Highway Instr. to Motorist?			Notes	RECOMMENDED REWRITE
	All Thru Hwy Motorists Affected?	Problem	Location	Action		
SEWARD HIGHWAY OPEN	Yes	x			closures	SEWARD HIGHWAY OPEN
AVALANCHE CONTROL WORK IN PROGRESS SUMMIT LK TO THE Y INTERMITTENT CLOSURES BETWEEN 11 AM AND 4 PM	Yes					AVALANCHE WORK SUMMIT LK TO THE Y XX MIN CLOSURES
AVALANCHE ROAD CLOSED MP 100	Yes					AVALANCHE ROAD CLOSED MP 100
ROAD IS OPEN THANK YOU	Yes				Only after long closures	ROAD IS OPEN THANK YOU
ROAD OPEN DRIVE SAFELY	Yes				Only after long closures	ROAD OPEN DRIVE SAFELY
ROAD OPEN HAVE A GOOD TRIP	Yes				Only after long closures	ROAD OPEN HAVE A GOOD TRIP
HIGH WIND WARNING AT SCALE HOUSE	Yes			x		HIGH WINDS NEXT 10 MILES REDUCE SPEED
BLOWING SNOW HIGH WINDS SCALE HOUSE AREA	Yes			x		BLOWING SNOW TWO MILES AHD REDUCE SPEED
HIGH WINDS BLOWING SNOW ONE LANE	Yes		x	x		BLOWING SNOW AHD ONE LANE TRAFFIC REDUCE SPEED
PARKS HWY NORTH BLIZZARD CONDITIONS	Yes			x		BLIZZARD CONDITIONS PARKS HWY NORTH USE CAUTION
HIGH WINDS BLOWING SNOW	Yes		x	x	Need location	BLOWING SNOW __ MI AHEAD USE CAUTION

Past Messages	Direct Thru Hwy Impact? All Thru Hwy Motorists Affected?	Clear Highway Instr. to Motorist? Problem	Location	Action	Notes	RECOMMENDED REWRITE
BLIZZARD CONDITION AND DRIFTING SNOW AHEAD	Yes			x		BLIZZARD CONDITIONS DRIFTING SNOW AHD REDUCE SPEED
REDUCED VISIBILITY AHEAD BLOWING SNOW	Yes			x		LOW VISIBILITY BLOWING SNOW AHD REDUCE SPEED
REDUCED VISIBILITY FOG, SNOW, AND FREEZING RAIN	Yes		x			FOG & FRZING RAIN AT KNIK RIVER REDUCE SPEED
HEAVY FOG EKLUTNA TO KNIK BRIDGE	Yes			x		HEAVY FOG EKLUTNA TO KNIK R REDUCE SPEED
REDUCED VISIBILITY IN PORTAGE AREA BLOWING SNOW	Yes			?	Implied Action	BLOWING SNOW REDUCED VISIBILITY IN PORTAGE AREA
BLIZZARD CONDITION AND DRIFTING SNOW AHEAD	Yes			x		BLIZZARD CONDITIONS TURNAGAIN PASS USE CAUTION
HIGH WIND WARNING FOR TURNAGAIN ARM	Yes			x		HIGH WIND WARNING TURNAGAIN ARM USE CAUTION
RICHARDSON HWY CLOSED AT TRIMS CAMP	Yes			x	Implied Action	RICHARDSON HWY CLOSED N OF GLENNALLEN
PARKS HWY ONE LANE TRAFFIC MILE 154 TO 250	Yes			x	Implied Action	PARKS HWY ONE LANE TRAFFIC MILE 154 TO 250
LEFT LANE CLOSED AT HILAND DRIVE ACCIDENT	Yes			x	Implied Action	ACCIDENT LEFT LANE CLOSED AT HILAND DRIVE

STATE OF ALASKA
Southcentral Alaska
PERMANENT
CHANGEABLE MESSAGE SIGNS (CMS)
PART 2: CMS MESSAGING PRACTICES





William A. Arberton 4/15/04

Central Region Director — Date
State of Alaska DOT/PF

Julia P Commes 4-18-04

Colonel, Headquarters — Date
Alaska State Troopers

Part 2

CONTENTS

Page

A. ACRONYMS OR INITIALS USED IN THIS REPORT

AMBER – America's Missing: Broadcast Emergency Response
APD – Anchorage Police Dept., Municipality of Anchorage
AST – Alaska State Troopers, State of Alaska, Dept. of Public Safety
CARS – Condition Acquisition and Reporting System
CMS – Changeable Message Sign
DOT/PF – State of Alaska, Dept. of Transportation & Public Facilities
ITS – Intelligent Transportation Systems
MSCVE – Measurement Standards & Commercial Vehicle Enforcement, DOT/PF
MOA Traffic – Municipality of Anchorage, Traffic Division
M&O – Maintenance & Operations, DOT/PF
NHS – National Highway System
PSA – Public Service Announcement
RWIS –Roadway Weather and Information System

B. CMS SIGN PURPOSE

The State of Alaska installs and owns Changeable Message Signs (CMS) on state roads in southcentral Alaska. The purpose of these signs is to provide an additional information source to inform and direct motorists about variable situations in a consistent and orderly manner. These signs provide messages for highway travel related purposes, including traffic control, incident management and timely traveler information. They can also be used to broadcast emergency alerts, AMBER alerts, and driver safety information.

Application of these signs is expected to be secondary and supplemental to other tools for messaging, broadcasting, and traffic control. Utilizing other primary tools for communicating with the motorists is essential. These primary tools may include emergency responders or police directing traffic on-scene, work zone traffic control devices during construction or events, or other forms of media such as brochures, radio, web, and television. These signs are not intended to act alone as the sole tool for communicating with motorists.

Other state maintained sources for major roadway information include:

- CARS – 511. The State of Alaska's newly developed Condition Acquisition and Reporting System (CARS) offers road, weather, and traffic conditions to the public through a telephone menu system by dialing 511. This information is also available by accessing http://www.511.alaska.gov on the internet.[1]
- AMBER Alerts are the uncommon case where referring motorists to a phone number for more information is a desired option on the permanent CMS signs. For other road and traffic conditions, it is preferable to post all necessary information or refer them to a radio

[1] For information or training on the use of CARS / 511, contact the State of Alaska, Department of Transportation Statewide ITS Coordinator: Jill Sullivan at (907) 465-8592, or email at jill_sullivan@ dot.state.ak.us

station. Otherwise, motorists who dial 511 or access http://www.511.alaska.gov will be able to receive AMBER Alert information.

- Road construction updates are published in local newspapers in the "Navigator" news advertisement paid for by the Department of Transportation.

Much information is more appropriately conveyed by these other sources. Just because information is published in other sources does not necessarily mean it qualifies for publication on the permanent CMS signs.

C. RESPONSIBILITY FOR CMS OPERATION

1.) Glenn Highway, Seward Highway CMS

One permanent CMS sign is currently located at Mile 3.5 of the Glenn Highway "outbound" departing northeastward from Anchorage, approximately two miles north of the Muldoon Road interchange, and just south of the Fort Richardson Interchange. A second permanent CMS sign is positioned at Mile 114.5 on the Seward Highway "outbound" departing south from Anchorage, where the highway begins to parallel Turnagain Arm at the Potter Valley Road intersection.

The Alaska State Troopers have responsibility for the 24 hours, 7 days a week operation of CMSs on state roadways in Southcentral Alaska, through a joint policy agreed to with the Alaska DOT/PF. The Dispatch Supervisor has the final responsibility for the messaging of all CMSs. They may seek the concurrence and technical advice of the DOT/PF Regional Traffic Engineer in making a final messaging determination. Supervising managers of these two officials have the authority to review messaging guidelines and elevate any decisions needed above their levels. For general questions about CMS's and overall responsibility, contact the following persons:

Dispatch Supervisor, Alaska State Troopers (AST)	*428-7200*
Central Region Traffic Engineer, DOT/PF	*269-0639*

The Alaska DOT/PF Anchorage Maintenance District is responsible for electrical maintenance of the CMS system, including the sign, computer terminal, software, modems, and all wiring and electrical connections between these two devices. For electrical service, contact the following persons:

DOT/PF, Anchorage District, Maint. & Operations (M&O)	*338-1436*

2.) Port of Anchorage CMS

Within the Port of Anchorage, a permanent CMS sign is located on Ocean Dock Road departing the Port towards the C Street Overpass. The Alaska DOT/PF, Division of Measurement Standards and Commercial Vehicle Enforcement (MSCVE), has the responsibility for the operation of this CMS on the state roadway within the Port. The MSCVE Director has the final responsibility for the operation of this CMS. The MSCVE office may seek the concurrence and technical advice of the Regional Traffic Engineer in

making a final messaging determination. For general questions about the CMS at the Port of Anchorage, contact the following person:

Aves Thompson, Director, DOT/PF Div. of Weights and Measures 341-3120

3.) Sign Operators

The Alaska State Troopers, DOT/PF personnel, and Emergency Operations Centers all need to maintain qualified sign operators on staff. The CMS sign operator's primary mission is to assure the safety of the motoring public. The operator needs to familiarize themselves with the CMS system, be able to make sound decisions, and quickly implement the proper procedures for routine and emergency actions.

The operator will be required to provide quality information in a prompt and courteous manner to the public, public agencies, as well as to DOT/PF, AST personnel. When a situation arises that the operator cannot resolve, the Dispatch Supervisor or designee will be advised immediately and a proper response will provided as rapidly as possible.

D. AUTHORITY TO DESIGN MESSAGES

The Alaska State Trooper Dispatch Supervisor and Dispatch Staff has the authority to design messages, pull messages from the historical library, and to display the messages without any other approval. The DOT/PF Regional Traffic Engineer and Traffic Engineering staff also have the authority to design messages. The Regional Traffic Engineer or their staff is available to assist with messaging questions and designs subject to this policy.

E. AUTHORITY TO APPROVE MESSAGES

Messages can be approved by

- the AST Dispatch Supervisor,
- the DOT/PF Regional Traffic Engineer,
- the DOT/PF Chief of Maintenance and Operations,
- the DOT/PF Chief of Highway Construction,
- or designated staff in charge when any of the above are not available.
- Supervisory levels above these persons may also approve messages.

F. MESSAGE VERIFICATION

Credibility is very important to ensure motorist's respect and respond to the CMS sign at all times. Message requests and message designs may be verified by listed supervisors of on-scene staff as listed earlier in this policy. When a supervisor listed is not on-duty, their designee may verify any message requests. All messages must be verified before being posted.

Some incidents and events occur which do not require the full closure of the roadway and yet it is still desirable to inform traffic of reduced conditions. The CMS messages should not be used to inform motorists without first verifying positive on-scene guidance is available in the form of

a) Traffic control devices, including warning signs and orange construction cones, candles or drums installed by DOT/PF, M&O, a contractor, or other party, or
b) law enforcement, emergency responders, or traffic control personnel are positioned at critical locations to control and guide traffic.

Safety messages and emergency alerts require use of other media and broader campaigns prior to finalizing a message.

Unofficial Sources. Although it is desirable to design and select messages based on complete and perfect information, situations often occur where an operator receives only limited information about a problem (particularly early on in the timeline of an event). Furthermore, the information that is available may be from an unknown or untrained source (e.g., a motorist), or may conflict with other information that has been received. As a result, a CMS operator must decide what information can be used, get additional information from a request verifier, and determine how this information can best be used to operate the CMS.

Verified information is that which is obtained directly by the CMS operator via closed circuit television or other visual means, or is provided by approved personnel of selected agencies as listed in this policy. Examples of people who can verify message requests include:

- Supervising on-scene law enforcement officers,
- emergency response personnel,
- transportation agency personnel,
- courtesy patrol personnel

Unverified information, on the other hand, is not obtained directly by the CMS operator or received from the sources above. Most common examples of unverified information are calls received from motorists about incidents that they have encountered. Unconfirmed commercial radio reports are another source of unverified information.

CMS operators should only use verified information to operate the CMS signs. Motorists and other sources of unverified information will often provide inaccuracies about locations and effects that, if presented to the public and found to be false, degrade the credibility of the CMS system and the operating agency. *However, unverified information can be useful to the operator in identifying information items that may need to be explored further.* For example, calls from one or more motorists that an incident has cleared may prompt the CMS operator to check a closed circuit television (CCTV) camera, contact the appropriate official, or check with a trusted backup source to verify that the incident has indeed occurred or cleared.

G. CMS PRINCIPLES

Changeable Message Signs (CMS), also known as Dynamic Message Signs (DMS), Variable Message Boards (VMB), or Changeable Message Signs (CMS), are a valuable and effective traffic control device available for construction, incident management, traveler information and maintenance activities. They can be effective for traffic information during large special events

that significantly affect traffic flow. However, CMS should not be used for advertising. Used effectively, the CMS will provide changing – but specific and useful information to the driving task. The most common message to be relayed is briefly stated as a problem, its location, and what action to take. For example:

A roadway problem	LEFT LANE CLOSED
The approximate location	1 MILE
The instruction to the motorist	MERGE RIGHT

The basic principles governing the use of CMS messages are governed by the Alaska Traffic Manual. To be effective, the CMS message should meet the following requirements:

- Fulfill a need
- Command attention
- Convey a clear, simple meaning
- Command respect of road users
- Give adequate time for proper response

Each CMS message should be displayed for a specific purpose such as those provided in this policy. CMS messages requested for roadway conditions or restrictions should be removed immediately when those conditions are ended or the restrictions are withdrawn.

In developing messages, factors that enhance understanding of messages include the following:

- Use simple words,
- Use short phrases,
- Standardize the order of words,
- Standardize the order of each message phrase,
- Use recognizable abbreviations, and
- Use standardized messages for each condition.

An efficient, brief, and to-the-point message is a good message. Just because there are spaces available on a CMS does not mean that all spaces should be used for a message.

CMS messages should be displayed and changed in a timely manner. This helps to maintain credibility. CMS operators do not always have all the information necessary to display messages that provide all of the details for motorists to make decisions. This is particularly true immediately after the operators are notified that an incident has occurred. Information should be displayed as quickly as it becomes available, recognizing that the CMS operator may have to change a message several times over the course of the event. Messages will need to be adjusted as new information becomes available or traffic conditions change.

Messages should be promptly removed as soon as possible once the traffic information is no longer current.

H. HOW TO MAINTAIN CREDIBILITY

When message credibility suffers, motorists may not respond as desired. To maintain message credibility, the following criteria should be met:

- Information should be ***accurate*** (e.g., a crash is observed by traffic passing by the location where an incident was displayed on a CMS).
- Information should be ***current*** (e.g., the message is consistent with current conditions).
- Information should be ***relevant*** to all motorists using that facility.
- Information should not be too ***repetitive.*** (e.g. the message should not be the same each morning for typically more than a week with motorists passing the sign). Displaying the same information on a CMS each day for routine congestion can result in many motorists ignoring the CMS after a time.
- Information should not be ***trivial*** (e.g., DRIVE CAREFULLY, SUPPORT YOUR LOCAL RED CROSS, time and temperature). Displaying trivial information can result in many motorists, particularly commuters, ignoring the messages that have no direct impact on their trips and consequently will begin ignoring the CMS.
- Information should not have ***errors.*** (e.g. ALL LANES OPEN when traffic is still blocking a lane) Traffic speeds and time to reach a destination are examples of information that can be easily disproved. Delay time is more difficult to disprove by motorists.
- Messages should not be ***poorly designed***. Poorly structured messages are difficult to read and comprehend, contain too many units of information, or are confusing. The messages may also contain misspelled words. Messages should not be strive to be 8 words or less per display, no more than two alternating displays total, and should not mix information on each line of text. Each display should stand alone in conveying information.

I. ELIGIBLE HIGHWAYS

Eligible highways for highway related messages on existing CMS signs include the following routes:

a) **Between CMS signs and next Cities.**
Primarily, messages for major traffic accidents between the CMS sign and the next city downstream should be limited those causing 20 minute closures or delays. Road segments eligible for major traffic accident messages include:

Glenn Highway: from CMS sign to City of Palmer
Parks Highway: from CMS sign to City of Wasilla
Seward Highway: from CMS sign to Girdwood

b) **Beyond the next Cities.**
In the case of accidents causing complete road closures beyond these three towns, closure durations of 4 hours or longer anywhere along the route could justify the use of the CMS sign to notify motorists. Closures shorter than this have a lower impact on motorist's who see existing CMS signs and can be handled locally through simpler traffic control setups. Closures longer than 4 hours take more complex traffic control setups and affect regional traffic.

Other highways and smaller highways in the vicinity of these routes will only be messaged when the road work or closure is severe enough to affect traffic on the routes listed above or cause overloading of 911 emergency phone lines. In general other highways and smaller roads should not be messaged when there are adequate food, phone, gas, and lodging facilities available in towns or communities prior to travel on those routes.

Messages for Emergency Management Plans, AMBER Alerts, Driver Safety Campaigns, and some regulatory applications are not limited to any specific highways.

J. WHEN TO USE A CMS SIGN

The following are examples of when to use a CMS:

1.) Emergency Management Plan (EMP)

Qualifying Criteria

- Part of broad based, agency effort, and
- Other media in use, and
- As Directed by Incident Commander,
- May supercede all other messages,
- Message Duration: as long as Emergency Alert requires

Emergency Broadcasts affecting highway use or depending upon critical highway use, may use the CMS sign. Use CMS signs per the traffic management strategies outlined in an Emergency Management Plan. Regional, corridor-wide as well as project-wide incident management plans may be developed to facilitate response to emergencies, evacuations, and incidents to help mitigate traffic congestion. As directed by the Incident Commander, implementation of various levels of traffic management plans for incident management (i.e. use of pre-identified traffic detour routes) incorporate strategic use of CMS signs.

Examples of emergency uses include disaster response, evacuations, highway closures, routing to fallout shelters, etc.

2.) AMBER Alerts

Qualifying Criteria

- Part of broad based, agency effort, and
- Other media in use, and
- the missing child is of a pre-determined age;
- the law enforcement agency believes the child has been kidnapped;
- the agency believes the missing child is in danger of serious bodily harm or death;
- The abducted child or person may be traveling within the local jurisdiction, or beyond to adjacent jurisdictions;
- Enough information is available to believe an activation will assist in the recovery of the child;
- No other highway safety event is judged to need the CMS sign,
- May supercede all messages, except Emergency Broadcasts,
- Message Duration: 1 to 3 hours typically. 24 hours is the maximum.

AMBER Alerts are a unique use CMS signs approved as part of a high intensity effort to find abducted children during the first and most critical hours they are in danger. (see FHWA Memorandum "AMBER Alert Use of Changeable Message Sign (CMS)" August 16, 2002, by Jefferey F. Paniati). The use of CMS signs for AMBER Alerts are just one of many tools to be pursued. AST in partnership with DOT/PF established an AMBER Alert Policy in 2003. CMS procedure is detailed in that policy. *AMBER Alert messages can supercede all messages on CMS signs other than Emergency Management Plans.* This is because most other messaging purposes can be adequately handled at the incident site.

Nothing in this policy suggests an automatic requirement to pre-empt critical messages to motorist's safety. Messages with an overriding need and priority compared to AMBER Alerts are emergency broadcasts of a significant area wide incident such as an earthquake, tsunami, or avalanche closure. In some cases, unusual and severe weather advisories, traffic backups, and major road closures/detours occur between the CMS Sign and the next city, and have just been initiated by officers on-scene. In these cases a CMS message could take precedence over AMBER Alert messages, depending upon the judgment of AST. In other cases, a traffic control plan with devices may be in place for some of these same highway conditions. These are generally effective enough to reduce the need for the CMS sign, thus freeing it up to be used for AMBER Alerts.

When the CMS sign is used for an AMBER Alert, only credible real-time information should be displayed, when it is crucial to the safety of the victim to disseminate the information to the public in the near term. Law enforcement activates an AMBER Alert when circumstances meet the qualifying criteria listed above. When AMBER Alert criteria are not met, the community may need to examine other means for broadcasting information.

The Alaska State Troopers will consult with the investigating agency prior to performing any CMS sign activations. The Alaska State Troopers and the investigating agency will jointly agree upon the most appropriate CMS message content(s), the length of time to display messages (initially 2-3 hours), and extent of roadway system to display the messages (i.e. radius and/or directions and specific routes). CMS Messages should be limited to their area of need, and may be posted locally or statewide as needed. They should be adjusted or deactivated when information changes.

Limitations on message content, conflicts with other necessary sign messages etc. will be considered. Messages that are too detailed may cause motorists to slow traffic; messages that are too general may not be effective. It may become necessary to turn off an AMBER alert message that creates a traffic problem.

In general, the CMS sign will refer motorists to another information source, and will only add a piece of specific information if it is judged to be definite and critical to motorists as they drive. At the same time, specific information will be limited so as to not distract motorists from their driving task. The preferred response is to display a radio frequency (thus referring the public elsewhere for details), such as Highway Advisory Radio (HAR) or an appropriate commercial radio station. Alternatively, a license plate number (or partial number) might be displayed along with a vehicle description. The display of any lengthy contact phone number is discouraged. Referring motorists to a shorter 511 phone number for more information is an allowable option on the permanent CMS signs. Motorists who dial 511 will be able to receive additional AMBER Alert information.

The FHWA notes that CMSs are not always the most effective or safest method to disseminate information related to child abductions. Only a limited amount of information can be conveyed on a CMS. When there is a need to provide extensive information to motorists, FHWA states that it is critical that other types of traveler information media (e.g., 511, HAR, web sites, commercial radio) be used, or that the messages on a CMS be used as a secondary supplement to these other media.

3.) **Traffic Accidents**

Qualifying Criteria

- Regional routes affected, and
- Major incidents that block lanes or significantly delay traffic,
- Message Duration: as long as lanes traffic is delayed

Incidents that block lanes for substantial periods of time are ideal candidates for the CMS sign. Messages near the incident can inform motorists of the problem and move cars into open lanes. Signs farther away from the incident can suggest alternate routes.

A traffic accident with a minimum of blockage and with short time duration is not appropriate for a CMS warning. This is especially true if the situation will most likely be cleared faster than the message can be placed on the CMS and then followed with an "all clear" message.

4.) Adverse Weather and Roadway Conditions

Qualifying Criteria

- Regional routes affected, and
- Major incidents that block lanes or significantly delay traffic,
- On-scene traffic control is activated,
- Message Duration: as long as traffic is delayed by weather conditions

Messages may be used to display adverse weather or roadway conditions downstream that are significantly impacting the drivers' visibility or use of the roadway. In some cases adverse weather can result in road conditions that cause complete road closures. Adverse weather and roadway conditions may include snow, avalanches, icing and freezing rain, fog, dust storms, falling rocks, mudslides, flooding, and high winds, etc.

5.) Traffic Detours or Diversions

Qualifying Criteria

- Regional routes affected, and
- Major incidents that detour or divert traffic on state routes,
- Local agencies consulted as needed on diversion to local routes,
- On-scene traffic control is activated,
- Diversion route offers significant mobility, time savings,
- Message Duration: as long as traffic is detoured or diverted

Messages giving specific alternative routes may be displayed when the road is closed or partially blocked and detours are necessary due to weather, incidents, or other emergency needs.

If recommendations are to be made about a specific diversion route to use around a problem, the CMS operator should also have information about current conditions on that route. Any route selected should offer a significant time savings to diverted motorists. If the operator cannot obtain such information, the CMS should not recommend a specific route. The only exception to this is when the freeway has been completely closed and police officers or traffic control personnel are directing traffic along a designated detour route.

Motorists are more willing to divert to an alternative route before they enter the freeway. They are less willing to divert after they are on the freeway because the average motorist enjoys the "security" of not getting lost while on the freeway, and is reluctant to drive on unfamiliar routes if he/she were to divert. The average motorist is more likely to divert when the delay on the freeway is 20 minutes or more.

Traffic Diversion to Local Roadways not under the Jurisdiction of the State

Messages recommending that motorists divert to specific roadways and/or local streets that are not under the jurisdiction of the state are not permitted unless severe conditions exist. In nearly all cases, the appropriate agencies should be notified or involved in the

route selection. Messages supporting preplanned diversion routes established via written agreements with the local transportation agency are permitted at all times. "Soft" diversion messages (i.e., *USE OTHER ROUTES*) may also be displayed when conditions warrant.

6.) Ongoing Roadwork

Qualifying Criteria

- Regional routes affected, and
- Major incidents that block lanes or significantly delay traffic,
- On-scene traffic control is activated,
- Causes traffic delays exceeding 20 minutes out to Palmer, Wasilla, or Girdwood, especially complete closures,
- Causes traffic closures exceeding 4 hours beyond Palmer, Wasilla, or Girdwood,
- Impacts are not routine, daily occurrences,
- Location relevant to motorists viewing CMS sign,
- Message Duration: as long as traffic is delayed up to 6 days

CMS messages can be used to provide added warning to motorists of active construction activities that are a significant, unanticipated impact to traffic flow. CMS messages may be used when active construction causes significant delays longer than 20 minutes, especially when this work has not been given adequate prior notice through previous messaging or media. CMS messages may also be used for complete closures due to road work which last longer than 20 minutes. These may occur overnight, or last several hours.

The CMS sign should not be used for routine construction impacts observed by motorists daily on the routes affected. This may include lane closures, lane shifts, two-way traffic, shoulder work, and construction traffic entering the highway, detours, etc.

7.) Future Roadwork

Qualifying Criteria

- Regional routes affected, and
- Major work planned to block lanes, divert, or significantly delay traffic,
- On-scene traffic control will be activated when the incident occurs,
- Will involve complete road closures greater than 4 hours,
- Impacts will not be routine, daily occurrences,
- Location relevant to motorists viewing CMS sign,
- Message Duration: up to 4 days in advance

Motorists may be warned of road construction activities in the near future (within a week) that will adversely affect traffic, such as overnight closures, or off-peak hour closures. These messages will give the regular traveler a chance to adjust routes or travel times.

Traffic related information that provides advance notice of upcoming roadwork may be displayed, but should be replaced by current information whenever applicable. Upcoming roadwork may be on the same freeway as the CMS sign, or could be on major spur routes with no alternative access. These routes typically affect a large number of the motorist's trips.

Advance notification should typically be for not more than 4 days prior to the roadwork for major projects. Calendar dates should not be used in the message. Days of the week (e.g., *TUES-FRI*) should be displayed instead. Therefore, advance notification of roadwork can only be displayed up to one week prior to the roadwork in order to avoid the need to display calendar days. Messages that impact the safety and operations of the roadway shall have priority over advance notice messages.

8.) Special Events

Qualifying Criteria

- Regional routes affected, and
- Major event planned to block lanes, divert, or significantly delay traffic,
- **DOT/PF , MOA or other agency permits have been approved**
- On-scene traffic control will be activated when the event occurs,
- Event impacts unanticipated by planned traffic control,
- Will involve complete road closures greater than 4 hours,
- Involves more than 500 vph, or 10% of daily traffic on eligible routes
- Impacts will not be routine, daily occurrences,
- Event location relevant to motorists viewing CMS sign,
- Message Duration: up to 4 days in advance, and during event as needed

Permits Required First. These messages display information about planned events that significantly impair traffic flow and reduce perceived safety on high-speed facilities. DOT/PF will approve any pre-planned use of CMS signs. The event sponsor must first apply for a Special Event Permit from DOT/PF. Within larger cities, these permits may also be handled by the local government. MOA Traffic also permits most special events within Anchorage, while DOT/PF limits permitting activity to the freeways in Anchorage, as well as all state roads outside of MOA.

There may be times where static signs would be more appropriate than CMS sign use. Messages should be displayed no more than one week prior to the event. For unanticipated highway incidents during the special event, the AST may design the appropriate emergency messages without DOT/PF oversight.

Complete Closures of the NHS. Special events requiring street or highway closures on the National Highway System downstream of the CMS sign (e.g., parades, street auto races, etc.) may be approved for CMS sign usage in advance of the event. However, CMS signs are not the primary notification tool for traffic impacts due to special events. The advance notification should not be given more than 4 days prior to the special event. Calendar dates should not be used in the message. Days of the week (e.g., *TUES-FRI*) should be displayed instead.

Partial Closures or Impacts to the NHS. Large special events which do not close or block the NHS highway may also qualifying for advance notice using CMS signs. Qualifying events must be anticipated to significantly affect traffic flow and routing. Events of this magnitude should be expected to generate more than 500 vehicles per hour, or 10 percent or more of the hourly or daily traffic on an affected NHS route. Base traffic levels are established by DOT/PF Permanent Traffic Recorders.

Messages may be used to direct motorists from the primary route to an alternative route that will eventually lead to a parking area. Trailblazers shall be used on the alternative route to direct motorists to the special event parking areas. Traffic conditions on the primary route and alternative route must be monitored. Messages intended to elicit diversion shall only be displayed when there is a significant savings in travel time for the motorists destined to the event, or when the motorists are being directed to parking areas with available parking spaces.

9.) Driver Safety Campaigns

Qualifying Criteria

- Regional routes affected, and
- Part of broad, agency campaign, and
- Other media in use, or
- Related highway activity occurring,
- Message duration: 5 days per month per campaign

Messages related to driver safety campaigns will be allowed as part of a broader, agency sponsored safety campaign effort, not just the sign alone. The effort should be localized or statewide as part of a campaign on the same topic. The broader campaign should be planned to include the use of other media, such as radio, TV, newspapers, billboards, etc. It should also include a noticeable roadway presence such as increased highway enforcement or increased roadway activities. This is necessary since the message could be confusing to drivers if they have not been more broadly exposed to the information.

The goal is for motorists to be able to understand the CMS message is connected to a larger overall effort, which more clearly relates to slogans or safety campaigns. Driver safety campaign messages should not be displayed for more than 4-5 days per month at any permanent CMS location, but may include holidays targeted by the campaign.

10.) Regulatory Messages

Qualifying Criteria

- Regional routes affected, and
- A region wide regulation change has occurred,
- A regulation has changed on the route with the CMS sign,
- Unusual and unique truck messaging is required,
- Location relevant to motorists viewing CMS sign,
- Message Duration: up to 4 days

CMS can be used to supplement regulatory signs or dates; some examples include:

- the use of High Occupancy Vehicle lanes,
- Mandatory truck inspections or stops,
- Chains required,
- implementing reversible traffic lanes,
- to inform drivers of studded tire law dates,
- to supplement speed limits

The CMS message will not routinely be displayed to supplement existing static regulatory speed limit signs unless part of a broader driver safety campaign effort.

Truck messages should only be used when an unusual and unique truck regulation occurs which is short term in nature, such as an emergency inspection sight or random break checks. Routine programs which utilize weigh station signing, weight limit signing, or inspection programs are not eligible for CMS sign use.

The CMS message is not enforceable and shall not be used in place of a static sign. However, the CMS can be used to display advisory travel speeds and traffic warnings as part of a complete message set, supplemental to onsite traffic signing.

11.) Fire Danger

Qualifying Criteria

- Regional routes affected, and
- Limited visibility of ¼ mile or less, or
- NHS or major route closure due to fire, or
- Smaller routes with no motorist services available for displaced drivers,
- Fire visible within 5 miles, or
- Fire near highway, overloading 911 lines
- Message duration: to be determined for each case

Due to the nature of long distance travel across Alaska, messages such as controlled burn and forest fire may be needed. However, fire related messages should only be used when road conditions or the driving task are significantly affected. This generally occurs when fires close roads, or smoke causes limited visibility of ¼ mile or less. An informative message may also be needed when there is a large planned or unplanned fire visible within five miles, or near enough to the highway to cause motorist confusion, concern, or increase 911 calls.

The U.S. Forest Service or the Alaska Division of Forestry will notify the Alaska State Troopers in the event of a forest fire with smoke visible from or eligible highway. Those messages will be placed on the CMS with the nearest relationship to the fire area.

12.) Intermodal Information

Qualifying Criteria

- Regional routes affected, and
- Part of broad, agency campaign, and
- Regional park-n-ride full or shut down (>1,000 vehicles)
- Anchorage International Airport parking full or shutdown,
- Delays in commuter rail connections,
- Delays in departures of a Knik Arm Ferry
- Message duration: Limited to hours of impact, up to 3 days

CMSs may be used to display messages to inform motorists of conditions to assist them with inter-modal travel. Currently, there are no CMS systems in place which affect high volume intermodal travel combinations. In high-density corridors, travel options are highly interrelated. Information about parking lot availability, ferry system departure delays, etc. can affect freeway driver real-time decisions about which exit ramps to use and so are appropriate information units to present in CMS messages.

In the future, CMS signs affecting inbound commuters on high volume routes into Anchorage may display messages to inform motorists a) of the availability of parking at Park-and-Ride facilities which store more than 1,000 vehicles, b) of the availability of parking at the Anchorage International Airport, c) delays in schedules with commuter rail connections, or c) about delays in departures of a Knik Arm Ferry System. This information is of a lower priority than information concerning roadway incidents and other situations that affect motorist safety. The priority for displaying messages shall remain in the control of Alaska State Troopers.

13.) Other Regions Outside Southcentral Alaska

Qualifying Criteria

- Regional long distance travel routes affected, and
- Long term closures greater than 12 hours in duration, and
- Substantial impacts to southcentral NHS routes,
- Message duration: Limited to duration of closure

Adjacent regions may have incidents that force the long term closure of a major highway. The most critical highways are National Highway System (NHS) routes with no alternative detours into the end destination city or beyond, or with no other connections to continuing on other NHS routes. Long term closures affecting long distance travel should be anticipated to last more than 12 hours in duration. Messages on the same corridor or connecting corridor can inform long distance travelers of the incident. Closure of major ***NHS routes*** to be considered on the current CMS signs include:

the ***Parks Highway*** south of any alternate routes into Fairbanks,
the ***Glenn Highway*** over its full length,
the ***Tok Cutoff Highway***,

the ***Alaska Highway*** to the Canada Border,
the ***Alcan Highway*** to Whitehorse and routes to Haines, Skagway
the ***Seward Highway*** north of any alternative routes into Seward,
the ***Sterling Highway*** north of any alternative routes into Homer,
the ***Whittier Access Road*** into Whittier

CMSs messages for roadways to Fairbanks, Glennallen, the Alaska Border, or to Seward or Homer on the Kenai Peninsula may display messages concerning verified major incidents (e.g., all lanes closed, truck overturn, etc.) depending on the location, severity and duration of the incident. Other connecting roads to the Seward and Glenn Highway may be eligible depending upon the substantial impact of the closure with the approval of the responsible persons listed in this policy.

Message requests may come from the DOT/PF or AST in northern Alaska, or even Canadian agencies overseeing the Alcan Highway in the Yukon Territory. The priority for displaying messages on southcentral CMS signs shall remain in the control of AST. If another agency's message is preempted by the Alaska State Troopers for higher priority needs, AST shall notify the other agency.

14.) Lane Use Control Signals

Typically used in the tunnels, these signs have a red 'X' in the closed lane and a green arrow in the open lane. This may also apply to use with reversible lanes, or lane closures on freeways. Currently there are no lane use control systems in Alaska.

15.) Delays, Travel Times and Future Technology

ITS traffic monitoring devices may be used in the future to assist with congestion management. Once this technology is implemented, there could be use of CMS applied on high-congested corridors.

One potential future use is the display of travel times. There are currently no electronic sensor equipment or agency capabilities to automatically measure, calculate, monitor, and display credible travel time information. Display of travel times will not be routinely considered. However, delays due to lane blockages, incidents, road closures can be manually estimated or verified by authorized onsite staff and displayed in messages.

16.) Test Messages

It is sometimes necessary to display messages on a CMS to assure correct operations, to "burn-in" a new sign, or for special studies. Acceptable test messages should either state *TEST-MESSAGE*, display a portion of the alphabet, a sequence of numbers, or a non-message test pattern such as moving columns or rows, etc. (*Note: SIGN UNDER TEST may be a suitable option to TEST-MESSAGE.*) Other test messages shall be reviewed and approved by the Alaska DOT/PF Central Region Traffic Engineer before they are displayed. Test messages should be used for a limited duration of one hour or less.

K. WHEN *NOT* TO USE A CMS SIGN: BLANK SIGNS

Permanent CMS signs should be in a blank mode during the peak and off-peak periods when traffic, roadway, environmental, or pavement conditions, or other announcements do not warrant the display of a message, or messages. Having blank sign messages a majority of the time on permanent CMS signs are of significant value to motorists, because motorists do not learn to ignore sign messages or become dull to the value of messages. Thus, when the CMS sign is in use, it is infrequent, important, and urgent, and more likely to catch their attention.

Portable CMS signs are mobile rather than fixed in location. The motorist expects there to be a message on a portable CMS, otherwise the sign would not be present. Blank messaging on portable CMS is less desirable. They are typically blank when they are not in use or temporarily idled as part of a phased operation. Portable CMS are typically present at a site because there is a necessary message. However portable signs require application of the same principles used for permanent sign messages. Message credibility guidelines (Section H.) are just as critical for both types of signs.

L. NONQUALIFYING REQUESTS

There are many qualifying messages which have been listed in this policy. The key is that qualifying messages be highway related, and critical to the driving task, unless otherwise approved as critical to overall public safety. Along with the need to keep signs believable by not having them on all the time, there are messages that should not be used on CMS signs, both permanent or portable.

1.) Public Service Announcements (PSA)

Messages designed to relay a public service announcement (ridesharing, enforcement actions, telephone hotlines, potential transit strike notices, etc.) are not permitted on CMSs, nor are messages designed to increase public awareness of a specific topic not associated with traffic or transportation safety.

Public service announcements do not provide drivers with real-time safety or travel efficiency information. PSA's provide information that can be more effectively given through other methods, such as media campaigns or pamphlets. Using these and other methods instead benefits a greater majority of the motoring public since it would not be limited to only those that travel on freeways where there are CMS signs.

2.) Advertising

As stated in the MUTCD, Section 2E.21: "Changeable message signs shall display pertinent traffic operational and guidance information only, not advertising."

Messages advertising any product, service, political campaign or political party are prohibited. Messages for special events should be designed such that advertising is not embedded in the messages (e.g., ~~*JOHN DOE CONCERT*~~). Public safety campaigns are addressed separately in this policy.

Messages for special events can be designed without including the private company or person sponsoring or performing at the event. For example, if John Doe was performing at the Fairgrounds, rather than displaying *JOHN DOE CONCERT*, the named or recognizable facility at which the concert will be performed - "FAIRGROUNDS" can be used instead.

3.) General Security Applications

Broad based alerts for national Homeland Security are not good candidates for CMS messages unless the information to be conveyed is specific to motorists, specific to a certain highway, directly affects highway users daily tasks, and requires a change in highway driving speeds, lanes, occupancy, vehicle types, etc. Homeland Security alerts which become serious enough to consider use of CMS signs are anticipated to then fall under an advance Emergency Management Plan criteria, or require some form of traffic control, rerouting, or evacuation.

M. MESSAGE PRIORITY

The Dispatch supervisor shall determine the priority of messages when two or more incidents occur at the same time. Message priority order is as follows:

[Blank Signs] - until needed for message
1.) Emergency Management Plans (EMP)
2.) AMBER Alerts
3.) Complete Road Closures
4.) Detours and Diversions
5.) Visibility Conditions
6.) Road Surface Conditions
7.) Road Weather Conditions
8.) Special Events (Not complete closures)
9.) Road Work (Not complete closures)
10.) Regulations, Informational Messages
11.) Test Messages

Blank signs are top priority when all other messaging candidates are not needed. This is in order to maintain sign credibility. Messages dealing with driving safety and road conditions shall take precedence over informational messages.

N. HOW TO DESIGN A MESSAGE

Select a proper message from an existing message library defined in this policy. Modify messages as needed to display correct conditions, responses, and actions required. New messages may need to be created on occasion, and should follow the principles outlined in this manual, identifying a problem verified by an authorized official in the field, a correct location, and an action required.

Use familiar, previously approved message phrases when possible. Message familiarity enhances motorist reading time. The message should be concise and clear for the drivers to interpret at high speeds.

1.) The Basic CMS Message.
The basic CMS message should provide the following information in three lines of text, on one display panel of information, using up to three units or phrases of information:

- Problem;
- Location of problem; and
- Recommended driver action.

It is not always possible to provide information on each element for the following reasons:

- Sign space and sign legibility constraints may require the CMS operator to reduce the number of informational units that are displayed; and
- other message elements for the *Problem* and *Action* may substitute with other message elements that will convey more useful information.

Some information will need to be omitted in order to meet the maximum number of information units that can be processed by motorists. Some tradeoffs must be made as to what elements of the message should be used and what others should be omitted.

2.) Reading Time vs. Exposure Time
The reading time is the time it actually takes a driver to read and comprehend all of the words in a sign message. The exposure time is the length of time a driver has from when the letters on the CMS sign first become legible. So the exposure time must always be equal to or greater than the reading time. Depending upon the speed of the drivers, the message length must be adjusted to insure the reading time can fit into the exposure time.

Reading times for CMS signs are higher than for static highway guide signs. Static signs read faster because drivers are used to viewing static signs regularly and are familiar with their word layout, colors, and shape. Static signs are uniform throughout the U.S., particularly with respect to message formatting. While motorists can scan guide signs for relevant information; they must read the entire message displayed on CMS signs in order to understand the message.

The Manual on Uniform Traffic Control Devices (MUTCD) requires minimum legibility distances for portable changeable message signs of 650 feet and 1,000 feet for higher speed facilities. This means the size of lettering on the sign will have to be designed to be visible at those distances.

The following shows how many seconds it takes for a car to travel 1,000 feet at various speeds.

Speed	Time to Travel 1,000 feet (seconds)
45	15.2
55	12.3
65	10.5
75	9.1

3.) Number of Panels

Based upon reading time, the following table shows the maximum number of message panels or alternating displays that can be shown for each speed limit, provided there is at least 1,000 feet of sight distance to see the CMS sign.

Speed Limit (MPH)	No. of Message Panels
45	3
55	3
65	2
75	2

The MUTCD (2) in Section 2E.21, Changeable Message Signs, specifies that a three-line changeable message sign shall be limited to not more than two messages. This is interpreted to mean *"two frames."* Part 6 of the MUTCD, Section 6F.52 Portable Changeable Message Signs states that when a message is longer than two phases, additional Portable CMS signs should be used.

Motorists should be able to read the message twice while traveling at the posted speed. When the CMS displays a series of message panels, 2-4 seconds per message panel is recommended. This allows an alternating two panel display to be read at nearly all traffic speeds. Ideally, messages should be reduced to one panel whenever possible, to maximize effectiveness.

A good practice would be to strive for message lengths less than or equal to than 8 words per panel at 55 mph and 7 words or less at 65 mph. Longer messages should be avoided because motorists will often reduce their speeds in order to read the message.

When more than two panels are used, the message and its order can become confusing to the motorist. Try to keep the message to two panels, but if three are necessary, keep the confusion minimized. Each panel should be a complete phrase and each phrase should be independent of the other. Even if the motorist begins reading the message at the 2nd or 3rd panel, the message should make sense.

The two permanent CMS signs leaving Anchorage permit up to 18 characters per line of text, and up to three lines of text, as well as two alternating display panels. Typical portable construction message boards typically operate on 8 to 12 characters per line, with three lines of text and alternating displays.

4.) Message Units

In each message there are units of information. A unit is one separate and distinct piece of data that the driver can recall and use to make a decision. A unit normally is one or two words but can be up to four words long. For example, the following message has four units of information:

Question	Answer	No. of Units
What happened?	GLENN HWY CLOSED	1
Where?	AT EAGLE RIVER	1
Who is affected?	ALL TRAFFIC	1
What must they do?	EXIT AT HILAND RD	1

To simplify this message, ALL TRAFFIC could be deleted so the message will fit on one panel. Since the road is closed, it is implied that all traffic is impacted.

Ideally three units of information should be displayed on a single message panel. No more than four units of information on a single panel. Up to six units are allowable when the CMS alternates between two panel displays.

Normally, only one unit of information should appear on each line of the CMS. However, a unit of information may be displayed on more than one line. A sign line, however, should not contain more than two units of information.

5.) Message Length

The message-load for the above example is 4 units. That is an example of the how much an average person might understand while traveling at a high speed. The message length is the number of words or characters in the message. The average motorist traveling at a high rate of speed can handle 8 word messages of 4 to 8 characters per word, (excluding prepositions). The number of panels or frames is another important variable in the construction of a clear message.

Limit each line of the message to no more than 18 characters. This is the maximum that will fit on any one line of the sign. If the message does not fit then approaches to reducing the message length must be employed such as the a) use of acceptable abbreviations, b) elimination of redundant words, and/or c) partition of the message in two frames. It may at times be necessary to reduce the message content.

Always look for ways to reduce the message length without losing the intent of the message. If it fits in the CMS sign, it is not necessarily acceptable. This can result in messages that are too long and sometimes too difficult for motorists to read under prevailing speeds.

6.) Message Familiarity

Message familiarity is another aide for motorist ability to understand a message. When information displayed to motorists is unusual, longer comprehension time is required. Common language is necessary. The first part of this policy contains a list of typical recommended messages and abbreviations. Both are valuable resources because this will help standardize messages and help motorists comprehend quickly.

To further message comprehension, the following are suggestions taken from research conducted by the Texas Transportation Institute concerning messages drivers can comprehend the quickest:

- Drivers have difficulty corresponding calendar days to days of the week. For example, "TUES – FRI" is preferred over "OCT 1 - OCT 4".
- Drivers find the phrase "FOR 1 WEEK" ambiguous. It is preferable to use "WED– TUES".
- Most drivers felt the term "WEEKEND" meant the work would begin Saturday morning and be complete by Sunday evening. It is recommended times and days be used if the work begins on Friday and extends to Monday.
- Displaying the route number alone can be confusing to both local drivers and drivers from other areas. Instead, be sure to use the common route name or designation.
- The word *ROADWORK* may be substituted for the longer word *CONSTRUCTION.*

7.) Application Examples

Typically, the problem and location appear on the first frame and the advisory, action, or attention statement (if needed) on the second frame. Each message frame must be understood by itself because either frame may be read first by the passing motorist. The following two examples help illustrate this principle.

8.) Message Split

The following example of an unacceptable message split results in a frame that is not understood by itself:

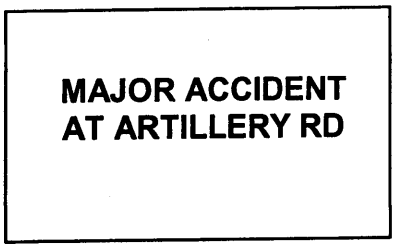
~~MAJOR ACCIDENT~~ ~~AT ARTILLERY RD~~ ~~EAGLE RIVR TRAFFIC~~

Frame 1

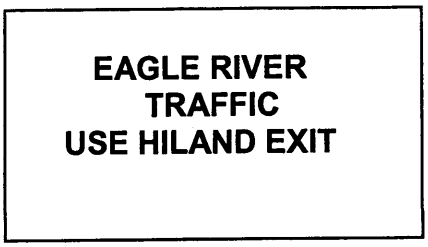
~~USE~~ ~~HILAND EXIT~~

Frame 2

A revised example produces an acceptable message split with each frame understood by itself:



Frame 1



Frame 2

9.) Message Lines

Do not try to "squeeze" in two units of information on the same panel by splitting each unit and then displaying or repeating portions of each unit on the same line. This should be avoided because it confuses motorists and increases reading time. An example shown below is unclear as to which traffic is to exit.

Frame 1

Frame 2

The unacceptable message can be corrected by separating information units onto separate lines.

Frame 1

Frame 2

At typical freeway speeds, no more than three units of information should be displayed on a single message frame. An unacceptable message with four units of information takes longer to read in frame 2.

Frame 1

Frame 2

Improving this message for faster reading using three units of information in frame 2:

Frame 1

Frame 2

10.) Location Descriptors

The CMS message designer must know the intended audience for the message that will be displayed. In some cases, commuters and visitors have different informational needs. The visitor has very limited information about a city other than interstate route numbers, whereas, commuters understand most of the intersecting and parallel streets. Thus, messages with local street or highway names familiar to commuters may not be understood by motorists unfamiliar with the area. Also, the same is true for abbreviations used for local landmarks, bridges, and entertainment and recreational facilities.

The more common descriptors for location used by sign operators are listed below.

1 MILE *(AHEAD)*
[number] MILES *(AHEAD)*
AT *[hwy name, street name, exit number, exit ramp name, landmark]*
NEAR *[hwy name, street name, exit number, exit ramp name, landmark]*

Consideration should also be given to the following location descriptors:

BEFORE [*hwy name, street name, exit number, exit ramp name, landmark*]
PAST *[hwy name, street name, exit number, exit ramp name, landmark]*

The advantage of *BEFORE* and *PAST* is that they give the driver information about the location of the incident or roadwork relative to the highway, street, exit, or landmark.

In some cases, the location statement may be substituted with an Audience statement. This is necessary when a target audience is to be directed to change travel patterns. This could occur when a freeway exit ramp is blocked, while the main highway is still open. For example:

MAJOR ACCIDENT	< Problem Statement
HILAND TRAFFIC	< Audience Statement
USE ARTILLERY RD	< Action Statement

In some cases the location may be the entire highway in general and not specific. The attention is directed at the motorist, thus this is implied without stating it, as each message has an implied "YOU" in front of the action statement.

HIGH WIND	< Problem Statement
GLENN HWY	< Location Statement
REDUCE SPEED	< Action Statement

11.) Advance Warning Messages

There are times to inform drivers of incidents that are farther ahead of the current location. This up-to-date information has the following basic elements that can be communicated:

- Information alert
- Nature of information (best route, traffic conditions, etc.)
- Destination for which information applies
- Location of the information (AHEAD or specific distance)
- Route markers of the major alternative routes in diverse situations

As an alternative to displaying a specific delay value, it is safer to display generic information such as:

MAJOR DELAY	or	MAJOR ACCIDENT
MINOR DELAY		MINOR ACCIDENT

Results of studies show that the average motorist interprets *MAJOR* as implying the delay is at least 45 minutes, while MINOR implies the delay is expected to be less than 20 minutes.

12.) Traffic Detours & Diversions

A "soft diversion" message is an action message used when drivers are advised to take other routes but the specific route is not specified in the CMS message. It might be displayed for a variety of reasons including:

- The CMS operator is unaware of the traffic conditions on the most logical alternative routes; or,
- It is important to display an action statement before the CMS operator has had a chance to assess the full impact of the incident; or,
- It is important to display an action before the police arrive and establish positive diversion routes.

Typical descriptors for soft diversion messages are listed below.

USE OTHER ROUTES
EXIT AND USE OTHER ROUTES

Many message designers display the term *USE ALTERNATE ROUTES.* However, *USE OTHER ROUTES* is shorter and well understood by drivers and is the preferred choice.

Specific diversions include

TAKE EXIT TO...
USE EXIT
TUNE RADIO TO [] FM

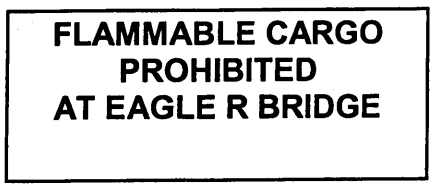
When a motorist is advised to take an alternative route, they must be confident that it is the correct decision and that doing so will result in significant savings in time. Therefore, the motorist should be given a good reason for following an action. In most cases, the good reason is implied through the rest of the message. For example, *MAJOR ACCIDENT* implies major delay and gives the reason for following the advice. However, in other situations an implied delay is less clear, and a more specific reason may be needed. When needed, the following message elements are acceptable:

AVOID DELAY
AVOID MAJOR DELAY
BEST ROUTE TO *[destination]*

13.) Truck or Hazardous Cargo Restrictions

If it is likely that drivers may divert to an alternative route that has hazardous cargo restrictions after an incident occurs on the freeway, it may be necessary or desirable to display messages on the CMS to advise truck drivers of the restrictions. In other cases, it may be desirable to reemphasize the restrictions that are stipulated by static signs by posting a message on a CMS.

A potential message could be as shown below.



Frame 1

Frame 2

14.) Complex Situations Requiring More Information

CMS signs can sometimes be used to inform motorists to tune to an Highway Advisory Radio (HAR) station when the circumstances of the incident or roadwork dictate the need for more information than can be displayed on a CMS. This can be done via an action message element in a CMS message, or simply as a sole advisory to tune to the HAR station. Examples of messages are shown below.

Alternative 1

Alternative 2

In the second alternative, having a static sign with beacons that would flash when it is desirable for drivers to tune to the radio station would be preferred to using the overhead CMS for this purpose. The CMS would be best used for displaying relevant traffic and highway information.

15.) Messages After an Incident

The signing responsibilities do not end when the incident is removed from the freeway lanes because congestion may still exist on the freeway, particularly following a major incident. The objectives of messages at this time are to:

- Inform motorists that the incident has been removed;
- Advise motorists that all lanes are open to traffic; and/or
- Advise motorists of the freeway congestion.

Even when congestion is still clearing, it is important to inform motorists who have seen a previous CMS message or have received information via radio or other media of a major incident that the incident has been removed from the lanes and all lanes are open to traffic. This is important for drivers to make informed decisions, particularly in light of the fact that most freeway drivers would prefer to use the freeway.

After the congestion due to the incident dissipates, it is advisable to display a message for a short period of time to advise that all the lanes are open to traffic. Either the message shown above or a message that simply states *ALL LANES OPEN* can be displayed.

16.) Blinking, Flashing, Scrolling

If only one message panel is used, the sign may be at steady burn and the blinking feature may also be used for a single message (one message panel). For example, the single message panel may also be on for 2 seconds and off for 1 second.

The blinking feature may be used on one or more of the panels. It should however not be used for more than one line of each panel.

Per the MUTCD, the text of messages shall not scroll or travel horizontally across the face of the sign.

17.) Graphics

The currently available CMS sign is not capable of displaying graphics and symbols that would be beneficial to drivers. It is possible to show symbols on full matrix CMSs, but this has to be done by compromising the required size of letters used in the message full message. The shape and color requirements in the MUTCD suggest that the common types of symbols for regulation and warning cannot be used on current types of CMSs used by sign operators. Until newer national guidelines are developed, use of graphics and symbols are not permitted on CMS signs for highway use.

18.) Delete "Understood" Words

Delete "understood" words whenever possible. These "understood" words are ones that 99 percent of local motorists would assume without being told.

One example of a "understood" word is the use of "street", "avenue", or "boulevard" following a familiar road name. These words are not required and could be omitted. There are exceptions to this principle. When describing numbered or lettered streets, such as 5th Avenue, or A Street, these still have to be followed by an abbreviation for *AVE* or *ST*.

Generally, the word *TRAFFIC* after a destination is not necessary. The reader of a sign can only be a motorist who is a part of the traffic stream, so *GLENN HWY, REDUCE SPEED* can only mean GLENN HWY *TRAFFIC, REDUCE SPEED*. The exception to this is when a target audience may need to be specified, rather than all motorists.

To simplify some messages, ALL TRAFFIC could be deleted so the message will fit. When a road is closed, it is implied that *ALL TRAFFIC* is impacted. Another "understood" word is *AHEAD*. It is not necessary to tell motorists that an incident or roadwork is *AHEAD* when the CMS is on the same freeway as the event because it will be understood by motorists that the event is ahead.

19.) Avoid Misunderstood Words

There are several terms that have sometimes been used in work zones to indicate a temporary alignment change (i.e., all lanes shift left or right). Results of human factors research indicate that the following terms should not be used alone:

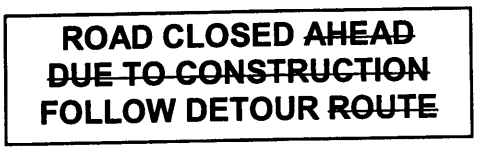
- LANES SHIFT
- TRAFFIC SHIFTS
- LANES CHANGE and
- NEW TRAFFIC PATTERN

Instead, the following term should be used together:

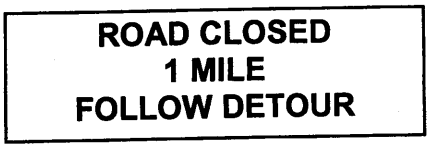
- *LANES SHIFT / STAY IN LANE.*

20.) Omit Unimportant Words/Phrases

It is possible to use alternative phrases that are understandable by motorists and have the same meaning as the original. The example below illustrates how message length can be reduced.



Can Be Shortened To:



In the above, the most important message elements are the road is closed and the location of the closure. The reason - *DUE TO CONSTRUCTION* is not critical to display and can be omitted. In addition, the word *AHEAD* can be omitted because it is obvious to motorists by simply stating *ROAD CLOSED. ROUTE* is redundant to the word DETOUR and can be eliminated. When a message becomes too long or displays too many units of information, begin eliminating units of information starting with the lowest priority.

21.) Abbreviations

Use abbreviations where possible. The MUTCD contains lists of abbreviations that are

a) acceptable,
b) acceptable, but only with a prompt word, and
c) unacceptable.

The abbreviated words in the following would normally appear in a CMS message with at least one other word (prompt word).

MUTCD Acceptable Abbreviations

Word Message	Standard Abbreviation
Afternoon / Evening	PM
Alternate	ALT
Avenue	AVE
Boulevard	BLVD
Center	CNTR
Drive	DR
East	E
Emergency	EMER
Entrance, Enter	ENT
Expressway	EXPWY
Feet	FT
FM Radio	FM
Freeway	FRWY, FWY
Friday	FRI
Hazardous Material	HAZMAT
Highway	HWY
Information	INFO
Junction / Intersection	JCT
Lane	LN
Left	LFT
Maintenance	MAINT
Mile(s)	MI
Miles Per Hour	MPH or M.P.H.
Minute(s)	MIN
Monday	MON

Word Message	Standard Abbreviation
Morning / Late Night	AM
Normal	NORM
North	N
Parking	PKING
Right	RHT
Road	RD
Saturday	SAT
Service	SERV
Shoulder	SHLDR
Slippery	SLIP
South	S
Speed	SPD
Street	ST
Sunday	SUN
Temporary	TEMP
Thursday	THURS
Traffic	TRAF
Travelers	TRAVLRS
Tuesday	TUES
US Numbered Route	US
Vehicles	VEH
Warning	WARN
Wednesday	WED
West	W

The cardinal directions (*N, S, E, W*), and the abbreviation *MI* for *MILE(S)* and the abbreviation *MIN* for *MINUTES* must be used with a prompt word.

MUTCD Abbreviations That Are Acceptable Only with a Prompt Word

Word Message	Acceptable Abbreviation	Prompt Word
Access	ACCS	Road
Ahead	AHD	FOG*
Blocked	BLKD	Lane*
Bridge	BRDG	*[name]**
Chemical	CHEM	Spill
Condition	COND	Traffic*
Congested	CONG	Traffic*
Construction	CONST	Ahead
Downtown	DWNTN	Traffic*
East	E	*[highway]**
Exit	EX, EXT	Next*
Express	EXP	Lane
Frontage	FRNTG	Road
Hazardous	HAZ	Driving
Interstate	I	*[number]*
Local	LOC	Traffic
Lower	LWR	Level

Word Message	Acceptable Abbreviation	Prompt Word
Major	MAJ	Accident
Mile(s)	MI	*[number]*
Minor	MNR	Accident
Minute(s)	MIN	*[number]*
North	N	*[highway]**
Oversized	OVRSZ	Load
Prepare	PREP	To Stop
Pavement	PVMT	Wet*
Quality	QLTY	Air*
Roadwork	RDWK	Ahead
Route	RT	Best*
South	S	*[highway]**
Township	TWNSHP	Limits
Turnpike	TRNPK	*[name]**
Upper	UPR	Level
Vehicle	VEH	Stalled*
West	W	*[highway]**

- **These prompt words should precede the abbreviation**

Additional Acceptable Abbreviations or Combinations

Word	Phrase	Acceptable Abbreviation
Accident	Accident at Major Accident Minor Accident	ACCDT AT MAJ ACCDT MNR ACCDT
Closed	Lane Closed	LN CLSD
Lane	Lane Closed	LN CLSD
Level	Lower Level	LOWER LVL LOWR LVL
Level	Upper Level	UPPER LVL
Lower	Lower Level	LWR LEVEL
Word	**Phrase**	**Acceptable Abbreviation**
Major	Major Accident	MAJ ACCDT
Minor	Minor Accident	MNR ACCDT
Parking	Parking Lot	PRK LOT
Pavement	Wet Pavement	WET PVMT
Route	Detour Route	DETOUR RTE
Upper	Upper Level	UPR LEVEL UPPR LEVEL
Weight	Weight Limit	WT LIMIT

22.) Unacceptable Abbreviations

A number of abbreviations have been found to be unacceptable. The following have been found to be understood by less than 85 percent of the drivers surveyed.

Unacceptable Abbreviations or Combinations

Word	Phrase	Unacceptable Abbreviation
Alternative	Alternative Routes	~~ALT RTS~~
Congestion	Major Congestion	~~MAJ CONG~~
County Road	County Road *[number]*	~~CR~~ *[number]* ~~CO RD~~ *[number]*
Eastbound	Eastbound Traffic	~~EB~~ TRAFFIC
High Occupancy Lane	High Occupancy Lane	~~HOV~~ LANE
Incident	Incident At	~~INCID~~ AT ~~INCDT~~ AT
Interchange	Interchange 14	~~INTCH~~ 14
Northbound	Northbound Traffic US 180 Northbound	~~NB~~ TRAFFIC US 180 ~~NB~~
Road Work	Road Work	~~RD WK~~
Route	Detour Route	DETOUR ~~RT~~
Southbound	Southbound Traffic US 75 Southbound	~~SB~~ TRAFFIC US 75 ~~SB~~
Vicinity	Vicinity Of	~~VIC~~ OF
Westbound	Westbound Traffic US 180 Westbound	~~WB~~ TRAFFIC US 180 ~~WB~~

23.) Summary of Message Design

- Strive for less than or equal to 8 words total
- Strive for one panel displays
- Use 3 units of information per panel
- Show only one unit of information per line of display
- Use no more than 6 units of information
- Limit CMS Signs to two panel displays
- Complete a phrase on each panel
- Up to 18 characters are available per line, with spaces
- Use acceptable abbreviations
- Eliminate redundant and "understood" words
- Reduce the message as much as possible
- Use familiar standardized messages
- Use messages consistently for the same applications
- Use names of days of week, not calendar days
- Clarify weekend dates and times as needed
- Use common route names when possible
- Recognize tourists depend on route numbers for main highways in Alaska, keep this in mind when they are
-

O. PORTABLE CHANGEABLE MESSAGE SIGNS

In locations where permanent CMS have not been installed or in situations where the amount of information that needs to be presented exceeds the motorists' processing capabilities from a single sign, it may be necessary to deploy portable CMSs to provide the necessary information to motorists. The time needed to deploy these devices must be considered in determining whether they are appropriate for a given situation. These CMSs should also be deployed far enough away from other CMSs, existing static signing, and complex roadway geometrics such as weaving areas. The agency must ensure that motorists are not overloaded with information when choosing where to place the portable CMS.

The above guidelines apply to all types of CMS, but because of its nature, the following additional guidelines are applicable to the portable CMS. If used for purposes other than highway construction or maintenance activities, approvals and message board policy. Routine construction and maintenance messaging is authorized by the project manager and staff in charge of the highway work.

The proper placement of a portable CMS is critical to its effectiveness. The placement requirement must give the motorist adequate time to react to the message. The CMS must be located prior to major decision points, such as intersections or interchanges, where the driver may change their travel plans. (On the Interstate, or other access-controlled freeways, placement 1 mile prior to the interchange is recommended.) Also, it must be placed prior to the present and expected traffic backups.

Placement requirements include:

- To provide 800 feet of sight distance.
- Where signs, poles, or other objects will not obstruct the CMS.
- On a level surface.
- Not within an intersection or interchange.
- Should not interfere with other traffic control devices.

If more than two CMS are to be used in sequence, they should be separated by at least 1,000 feet. Local intersection spacing may dictate different spacing.

The sign should be placed off of the shoulder of the roadway, behind the guardrail, if possible, and where it will be accessible to maintenance vehicles even if the traffic queue develops or grows. To be comfortable to read, the CMS panel should be turned slightly towards the driver's view, at approximately 5 to 10 degrees from perpendicular of the road's centerline. Reading the CMS becomes more difficult as the angle is increased from the normal field of vision. It is recommended to drive by the CMS after installation to be sure the sign is readable from the road.

If the portable CMS is set up along the roadway and a message will not yet be needed for a period of 4 hours or more, the sign panel should be turned away from traffic, parallel to the road's centerline. No blank signs should be facing the drivers for extended periods.

P. DISPLAY AND VERIFY CMS MESSAGES

Once a sign operator is satisfied with the accuracy of the information available, the information in the message and the message format, the selected message can be displayed. After the CMS message is activated, it is important that the operator be able to validate that the correct message is displayed on the CMSs. Validation can be accomplished by viewing the messages via the CCTV. The operator should not have to rely solely upon electronic validation from the software/computer system.

Q. REFERENCES

FHWA-XX-2002-XX, Guidelines for Changeable Message Sign Messages, Conrad L. Dudeck, Texas Transportation Institute, Sept. 2002, Texas A&M University, College Station, Texas 77843-3135, Contract No. DTFH61-96-C-00048, Work Order No. PB-F 0008

Manual on Uniform Traffic Control Devices (MUTCD), Millennium Edition, Revision 1, 12/28/01
Traffic Control Devices Handbook, 2001, Institute of Transportation Engineers
FHWA Memorandum, "INFORMATION: Use of Changeable Message Sign (CMS)" (http://www.fhwa.dot.gov/legsres/directives/policy/pame.htm), January 19, 2001
FHWA Memorandum "INFORMATION: AMBER Alert Use of Changeable Message Sign (CMS)" (http://www.fhwa.dot.gov/legsregs/directives/policy/ambermemo.htm) August 16, 2002, Jefferey F. Paniati

7.2 MAXIMUM CMS LEGIBILITY DISTANCES FOR DAY AND NIGHT OPERATIONS

The legibility of a CMS depends on the design characteristics of the sign. Key design parameters are the type of display technology (light-emitting, light-reflecting, etc.), height and width of the characters, the stroke width of the characters, and the type of font displayed. Legibility distances proposed for use in CMS message design (based on results of several studies) are presented in Table 7-1 (*3*). These distances represent standard font (all uppercase), 18-inch character heights, 13-inch (approximate) character widths, and about 2.5-inch stroke (pixel) widths. Smaller characters would yield shorter distances.

(Note: Character heights on CMSs used on freeways and other high-speed highways should not be less than 18 inches (4).)

The legibility distances shown in Table 7-1 affect the maximum number of units of information that can be displayed on a CMS which will allow motorists to read and comprehend the message at prevailing highway operating speeds. Based on these distances, the maximum number of informational units that motorists can actually read and comprehend in a CMS message is summarized in Table 7-2. These numbers establish the Base Maximum Message Length.

Table 7-1 Suggested CMS Legibility Distances for Use in Message Design (ft) *(Ref 3)*

Condition	Light-Emitting Diode[A]	Fiberoptic (Alaska)	Incandescant Bulb	Reflective Disk
Mid-Day	800	800	700	600
Washout	800	800	700	400
Backlight	600	500	400	250
Nighttime	600	600	600	250

[A] Valid only for the newer aluminum indium gallium phosphide (or equivalent) LEDs

Table 7-2. Maximum Number of Units of Information in CMS Message (Base Maximum Message Length) *(Ref 3)*

	Light-Emitting Diode [A]			Fiberoptic			Incandescent Bulb			Reflective Disk		
	0-35 mph	36-55 mph	56-70 mph	0-35 mph	36-55 mph	56-70 mph	0-35 mph	36-55 mph	56-70 mph	0-35 mph	36-55 mph	56-70 mph
Mid-Day	5 units	4 units	4 units	5 units	4 units	4 units	5 units	4 units	3 units	5 units	4 units	3 units
Washout	5 units	4 units	4 units	5 units	4 units	4 units	5 units	4 units	3 units	4 units	3 units	2 units
Backlight	4 units	4 units	3 units	4 units	3 units	2 units	4 units	3 units	2 units	2 units	1 unit	1 unit
Nighttime	4 units	4 units	3 units	4 units	4 units	3 units	4 units	3 units	3 units	3 units	2 units	1 unit

[A] Valid only for the newer aluminum indium gallium phosphide (or equivalent) LEDs

[A] Large CMS: 3 lines, 20 characters per line; Portable CMS: 3 lines, 8 characters per line. All messages are for operating speeds above 35 mph and thus are limited to 4 units of information.

[B] Blank cells indicate that the message cannot be displayed on a portable CMS.

MEMORANDUM OF AGREEMENT
STATE OF ALASKA
Department of Transportation and Public Facilities

Region: Central Region Agreement No.: 1

Project: SYLVIA Sign Management, Anchorage, Alaska

THIS AGREEMENT is made by and between **Anchorage Police Department ("APD")** whose mailing address is 4501 S Bragaw Street, Anchorage, AK 99507 and the **STATE OF ALASKA, DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES, CENTRAL REGION** ("DOT/PF"), whose mailing address is 4111 Aviation Drive, Anchorage, Alaska 99519. This agreement is to remain in effect until mutually rescinded through negotiations by both parties or until final completion of the Work as defined in this Agreement.

Responsibility of APD. APD will provide

- staffing to operate the signs 24 hours a day, 7 days a week by APD staff in accordance with the attached Sign Operations Manual (Part 1) and CMS Messaging Practices Guide (Part 2), as approved by DOT/PF and the Alaska State Troopers on April 18, 2004.
- dedicated phone line
- computer power source
- any other services as needed to run the two permanent changeable message boards, one on the Glenn Highway, and one on the Seward Highway within the Anchorage area.
- a contact person and phone number who will be available to take messaging requests and implement messages in accordance with the attached procedures.
- Sign management will be overseen by supervisory level personnel at APD.
- DOT/PF will be consulted if there are any questions in signing procedures. In the event APD is notified by DOT that sign messaging does not conform to the Sign Operations Manual and Messaging Guide, APD will take action to correct or remove the messaging.
- The sign at the Port of Anchorage is excluded from this agreement.
- APD will utilize the sign software or keep an independent log book to track messages

approved and displayed on the sign, including message text per line, date and hours of display, who requested the message, and who approved it. This information becomes useful not only if there are questions, but also in future updates to the sign policy and procedures manuals and improving upon the recommended messages library.

Responsibility of DOT/PF. DOT/PF is the owner of the two permanent changeable message boards. DOT/PF will provide

- Sign electricity and maintenance in the field,
- office computer hardware and modem,
- manuals governing sign messaging procedures and software use.
- DOT/PF may notify APD if there are concerns with sign messaging compliance.

ATTACHMENT 1: Southcentral Alaska PERMANENT CHANGEABLE MESSAGE SIGNS (CMS) PART 1: SIGN OPERATIONS MANUAL; and PART 2: CMS MESSAGING PRACTICES

MUNICIPALITY OF ANCHORAGE, ANCHORAGE POLICE DEPARTMENT

APPROVED:

Signature: Richard O. Stouff Date: 8/10/04
Name: Sgt. Richard Stouff
Title: Manager, Emergency Communications Center, APD

Signature: Judie Holloway (Acting COP) Date: 8/10/04
Name: Walt Monegan
Title: Chief of Police, APD

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

APPROVED:

Signature: Thomas P. Mull Date: 7/29/04
Name: for Chris Kepler, P.E.
Title: Chief, Maintenance & Operations, Central Region DOT/PF

Signature: Gordon C. Keith Date: 8/5/04
Name: Gordon Keith, Regional Director
Title: Central Region DOT/PF