

Oregon Department of Transportation

**Guidelines for the Operation of
Highway Advisory Radio
and
Other Travelers Information Stations
on
State Highways**

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Under Oregon Revised Statute 810.200, **Uniform standards for traffic control devices; uniform system of marking and signing highways**, and letters of authority from the Oregon Transportation Commission, the State Traffic Engineer is responsible for exercising authority with respect to the use of traffic control devices. Traffic control devices notify road users of regulations and provide warning and guidance required for the safe and efficient operation of the road system. Since highway advisory radio (HAR) is a traffic control device under this definition, its operation is under the authority of the State Traffic Engineer. This authority relates to all aspects of HARs operated by ODOT as well as to the posting of advance signing on state highways for Travelers Information Stations operated by other agencies.

The **Guidelines for the Operation of Highway Advisory Radio on State Highways** were first developed by the Traffic Engineering and Operations Section in January 2002 with input from the Oregon Traffic Control Devices Committee and Region Traffic Managers. The guidelines were updated in June 2005 and 2006. Information on Travelers Information Stations operated by other state and local agencies is provided in Supplement A.

These guidelines are consistent with the Manual on Uniform Traffic Control Devices (MUTCD 2003) and the Federal Communications Commission (FCC) rules 47 CFR Chapter I Part 90.242.

Approved by the Oregon State Traffic Engineer:

(original signed by)

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Date

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I. Introduction

The Federal Communications Commission (FCC) licenses state and local agencies and government-affiliated agencies, such as airport authorities, to use low-power roadside transmitters to provide motorists with up-to-the-minute travel information via their AM/FM radios. These systems, which the FCC calls Travelers Information Stations or TIS, can provide warnings, advisories, directions, or other non-commercial material of importance to motorists. These licenses are issued under and must be operated in compliance with federal rule 47 CFR Chapter I, Part 90.242.

TIS operated by the Oregon Department of Transportation are known as Highway Advisory Radio (HAR). The Oregon Department of Transportation (ODOT) utilizes HAR to supplement messages provided on standard highway signs or variable message signs. HAR are permanently installed at locations where communication with travelers may be critical and may be temporarily installed in some work zones to provide travelers with timely information about a construction or maintenance project. Advance signs are posted to inform motorists about the availability of a HAR.

Messages, which are usually less than a minute in length, are recorded for continuous repetition. The message length is adjusted to permit the driver to receive the message at least twice while passing through the station's coverage zone.

For ODOT HAR, the ISB Wireless Group is responsible for obtaining and maintaining the FCC licenses. A license is specific to a transmitter location and broadcast area for permanent HAR installations. For temporary HAR, an area license which allows use on any state highway or for a specific corridor is required. ODOT does not maintain any license for temporary HAR and any temporary installations must be planned well enough in advance to obtain the required FCC license.

For TIS operated by other state agencies and local agencies with an established FCC license, advance signs may be posted on a state highway with State Traffic Engineer approval. Examples of TIS uses other than for state highway information include severe weather alerts, Port traffic instructions, event management and local road construction or other detours. These signs must be installed in accordance with the guidelines given in ODOT's *Sign Policy and Guidelines for the State Highway System* (Chapter 5-12). These are included as Supplement A, TIS Signing Guidelines for Other Licensed Agencies.

II. Authority to Operate and Post Signs for TIS on State Highways in Oregon

Under Oregon Revised Statute 810.200, **Uniform standards for traffic control devices; uniform system of marking and signing highways**, and letters of authority from the Oregon Transportation Commission, the State Traffic Engineer is responsible for exercising authority with respect to the use of traffic control devices. Since HAR are traffic control devices, their operation is under the authority of the State Traffic Engineer. This authority relates to all aspects of HAR operated by ODOT as well as to the posting of advance signing on state highways for TIS operated by other agencies.

III. Operation of Permanent and Temporary HAR

A Traffic Operations Center employee or authorized staff from a Region Traffic or District office may operate permanent HARs.

Authorized staff from a Project Manager's office, Traffic Operations Center, Region, or District may operate a temporary HAR established for a construction or maintenance project.

The manager of the unit operating a HAR should designate a HAR operator to be responsible for the operation of the HAR.

IV. HAR and other TIS Review Process

A. State Traffic Engineer Approval

HAR - State Traffic Engineer approval is required prior to the construction of a permanent HAR operated by ODOT and installation of advance signs.

1. The HAR operator, in consultation with the Region Traffic Manager and ITS Unit, should prepare and submit to the State Traffic Engineer a written request to apply for an FCC license and install a HAR.
2. The request should be signed by the manager of the unit that will operate the HAR and include:
 - a. the primary purpose of the HAR,
 - b. location of coverage area,
 - c. proposed transmitter locations,
 - d. proximate placement of signs,
 - e. control point (where and how the HAR is to be controlled), and
 - f. operational responsibilities.

Temporary HAR – Temporary HAR installation, operation and messages shall follow the policy and guidance in these Guidelines. State Traffic Engineer approval is not required for temporary HAR operated by ODOT. A FCC license that covers the location of the temporary HAR must be obtained in advance through ODOT's ISB Wireless Group. A temporary HAR to provide travelers timely information about a construction project should be included in the work zone signing plans.

TIS operated by other agencies - State Traffic Engineer approval is required prior to installation of advance signs for TIS operated by other state and local agencies. The request for signs must state the purpose for the HAR broadcasts in order to design the needed sign legend. The sign legend and design will conform to the ODOT Sign Policy and Guidelines. Refer to Supplement A which describes the approval process and requirements.

B. Federal Communications Commission (FCC) License

The Wireless Communications Unit, Information Systems Branch, ODOT will file a Federal Communications Commission (FCC) license application for permanent

installations or for temporary HAR use. The Wireless Communications Unit will notify the HAR operator and State Traffic Engineer when the license application is approved. The Wireless Communications Unit will maintain all licenses issued.

V. Conditions Warranting Use of HAR

The purpose of a HAR is to provide supplemental information to motorists about traffic advisories, construction and maintenance operations, adverse weather or environmental conditions, route diversions, Amber Alerts, and special events. HAR are not intended to replace permanent or temporary signs required by the MUTCD. Information may be provided about emergency situations or about routine matters.

VI. Guidance on HAR Use

A. Traffic Advisories

The accuracy and specificity of the information included in a broadcast is dependent upon surveillance capabilities. If accurate visual surveillance is not available, the messages should be general in nature. Credibility is adversely affected by transmitting erroneous information.

B. Construction and Maintenance Operations

HAR serves to supplement, not replace, standard traffic control devices used in highway work zones. The traffic control devices must perform the function of warning and controlling traffic through the work zone. HAR can be used to warn of unusual situations that occur which may not be adequately handled by static traffic control devices (e.g., presence of traffic queues, requirements for diversion, etc.). If permanent or portable variable message signs are also used, careful coordination between all messages should occur to prevent driver confusion.

C. Adverse Weather and Environmental Conditions

When adverse weather and environmental conditions are known, HAR can be used to tell drivers exactly what the conditions are and what action may be required. Refer to Section IX.D. for guidance on use of HAR for broadcasting general weather forecasts.

D. Route Diversions

Route diversion is a special case of other applications, such as construction and maintenance, traffic advisories, and weather. Diversion routes should be pre-established. Diversion routes that include local jurisdiction routes should be pre-established with the local agency. When broadcasting specific route information:

- Keep the information simple. Unfamiliar drivers need specific instructions as to what they should do to avoid a traffic problem.
- Limit the information to no more than four street names and four turning movements.
- Use exit numbers and route numbers when possible.

- If possible, use detour signing to reinforce the HAR message and eliminate the need to broadcast detailed information that may not be retained by the driver.

Without up-to-date knowledge about the alternate route conditions, merely advise drivers to “take an alternate route”.

E. Amber Alert

When an Amber Alert is activated, the ODOT Transportation Operations Center (TOC) shift supervisor may activate a HAR message as long as the HAR is not needed to warn motorists of conditions on the highway needing their immediate attention. Refer to Supplement C, Amber Alert System, for specific guidance on using HAR for Amber Alert broadcasts.

F. Special Events

Experience has shown that drivers, particularly unfamiliar drivers, are looking for help in finding a good route to special events (e.g., ballgames, festivals, etc.). Experiments have shown that drivers are receptive to taking the alternate routes recommended by messages on HAR or special signs. In addition to routing, drivers also desire information concerning the availability of suitable convenient parking. The message shall be limited to routing and parking information and shall not include information about the event or any commercial message.

VII. Advance Signing

Advance signs must be posted to alert motorists about the availability of a HAR or Travelers Advisory Radio station. Signs must be fabricated and installed according to standards published in ODOT's *Sign Policy and Guidelines for the State Highway System* for the specific type of installation.

A. Permanent HAR

State Traffic Engineer approval is required before an advance sign for a permanent HAR is installed. All signs must be equipped with flashing beacons, which shall be activated when a message is being broadcast. When no message is being broadcast or when an automated weather forecast is being broadcast, the flashing beacons should not be activated.

B. Temporary HAR

If advance signs for temporary HAR are equipped with flashing beacons, the beacons shall be activated when a message is being broadcast. All advance signs for temporary HAR that are not equipped with flashing beacons must be designed so that the sign can be folded, covered, or removed when a message is not being broadcast.

C. TIS operated by other agencies

State Traffic Engineer approval is required before an advance sign for a TIS operated by an agency other than ODOT is installed. See Supplement A for specific requirements.

VIII. Message Development

HAR operators may develop messages that are suitable for broadcasting on HAR. These are messages related to traffic advisories, construction and maintenance operations, adverse weather and environmental conditions, Amber Alerts, and special events. Messages must identify only the necessary information and shall be voice communication (speech) only.

Examples of messages appropriate for various situations are given in Supplement B: Sample HAR Messages. Examples of messages appropriate for use for an Amber Alert are given in Supplement C. The following general guidelines should be considered:

A. Be Concise

HAR messages should contain the minimum number of words needed to convey the roadway situation. Use phrases or short sentences. The motorist should be able hear the entire message twice while within the effective transmission range.

B. Follow a Standard Format

The following format is suggested:

- An introductory statement (agency name, location of HAR, date and time)
- An attention statement (to address a certain group of motorists or destination)
- A problem statement
- A location statement
- An effect statement (lane closure, delay, chains required, etc.)
- An action statement

C. Follow FCC Requirements

The FCC license requirements must be followed. Specific requirements given in the Code of Federal Regulations, Title 47, Section 90.242 (a)(7) regarding messages to be transmitted are:

“Travelers Information Stations shall transmit only non-commercial voice information pertaining to traffic and road conditions, traffic hazard and travel advisories, directions, availability of lodging, rest stops and service stations, and descriptions of local points of interest. It is not permissible to identify the commercial name of any business establishment whose service may be available within or outside the coverage area of a Travelers Information Station. However, to facilitate announcements concerning departures/arrivals and

parking areas at air, train, and bus terminals, the trade name identification of carriers is permitted.”

Non-commercial voice information has been interpreted by the FCC as speech communication only in a ruling dated February 2,2007. This means that messages such as musical, poetry or dramatic productions are not allowable broadcasts.

D. Identify the Agency Broadcasting the Message

Identify the agency broadcasting the HAR message and the date and time of the broadcast every repetition of the message. Inclusion of the station frequency is optional. The following standard format should be used:

“This is the Oregon Department of Transportation Highway Advisory Radio for the (location) for (date, time).”

IX. Message Recording and Broadcasting

As a general rule, HAR messages are prerecorded and stored for future use. Additional messages can be recorded as needs arise.

A. Recording Messages

1. Announcer

The announcer should be a person with an average to low-pitched voice. The style of delivery should sound official.

Good speaker characteristics are as follows:

- Clear enunciation without obvious dialect.
- Ability to speak loudly and at a moderately fast rate.
- Ability to modulate the pitch of the voice so as not to speak in a monotone.

2. Delivery Style

The message should be delivered in a calm, matter of fact, and dignified manner. Since the names of streets and turn directions are the information drivers will need to recall, these words should be stressed in delivery. Each syllable of a proper name should be carefully enunciated. There should be a brief (1 second) pause after each statement.

3. Speed of Delivery

The appropriate speed of delivery for radio messages is about 175 words per minute.

B. Testing and Verifying Messages

1. Test all messages prior to broadcasting for accuracy, quality, length, and inclusion of necessary elements.
2. Confirm that the actual message is being broadcast as intended.

C. Message Consistency

HAR messages shall not conflict with or contradict messages displayed by variable message signs (VMSs) and other traffic control devices within the broadcast area. Messages should be consistent with messages that may be provided by telephone or TripCheck.

D. Terminating a Message

Update the broadcast as needed and terminate it when it is no longer needed. When terminating a message, deactivate the advance beacon on the advance warning sign. If no message is being broadcasted, the HAR operator may broadcast the standard introductory message given in Section VIII.D. and the following statement "There is no information to communicate at this time" or may broadcast an automated weather forecast.

X. System Monitoring

The HAR should be tested regularly to determine that the system is still transmitting to the desired range and that message clarity is maintained.

XI. Recordkeeping

The HAR operator should maintain records on messages broadcast and date and time of the broadcast.

Supplement A: TIS Signing Guidelines for Other Licensed Agencies*

Signing for TIS operated by other state and local agencies may be installed on a state highway under the following criteria:

1. TIS signing will be placed so it does not interfere with signing specified by Oregon Revised Statutes, Oregon Administrative Rules, the MUTCD, and any other applicable rules and regulations. TIS signs will be erected only when there is adequate space along the highway.
2. The requesting agency must be a non-commercial agency. After receiving a FCC license, the agency makes written application to the District Manager and is issued a permit for sign installation. The following process is established:
 - The applicant submits a copy of the FCC license and an operational plan for the proposed TIS to the District Manager. The operational plan should include the primary purpose of the TIS, broadcast boundaries, proposed location for signs, and operational and maintenance responsibilities.
 - The District Manager will review the request, determine sign locations, and request State Traffic Engineer approval.
 - The State Traffic Engineer will give written approval, authorizing the District to issue a permit that will state the expectation that the TIS will be operated as described in the operational plan.

Messages transmitted must be consistent with FCC regulation Title 47, Section 90.242(a)(7). See Section VII C of these Guidelines for the language and interpretation of the regulations.

3. The requesting agency will fund all sign fabrication and installation costs. Signs will be fabricated and installed to ODOT standards.
4. The District Manager, or his/her representative, will monitor broadcasts occasionally to determine compliance with FCC regulations. Should broadcasts not be in compliance with regulations, signs will be removed. Signs will be removed if the agency ceases to broadcast messages or the FCC permit is terminated.
5. All TIS transmitters shall be accessible to federal, state, or local incident response agencies to broadcast public safety or traffic management messages in the event of natural or civil emergencies. The requesting agency must agree to discontinue TIS broadcasting if there is interference with a HAR installed by ODOT for construction and maintenance purposes.

* Oregon Department of Transportation, *Sign Policy and Guidelines for the State Highway System*, Chapter 5-12.

Supplement B: Sample HAR Messages

HAR are used to provide information to motorists about traffic advisories, construction and maintenance operations, adverse weather or environmental conditions, Amber Alerts, and special events.

Each message should be preceded with the standard introductory message “This is the Oregon Department of Transportation Highway Advisory Radio for the (location) for (date, time).” Each of these messages may include a message about a route diversion.

The following are examples:

Traffic Advisory

If accurate visual surveillance is not available, the message should be general:

ATTENTION EASTBOUND INTERSTATE 84 TRAFFIC
INCIDENT AHEAD
EXPECT DELAYS

If visual surveillance is available, a more specific message can be broadcast:

ATTENTION EASTBOUND INTERSTATE 84 TRAFFIC
CRASH AHEAD AT EXIT 123
LEFT LANE CLOSED
MOTORISTS SHOULD MERGE RIGHT

If a diversion route has been established, the route can be specifically described:

ATTENTION EASTBOUND INTERSTATE 84 TRAFFIC
CRASH AHEAD AT EXIT 123
LEFT LANE CLOSED
MOTORISTS SHOULD MERGE RIGHT
TO AVOID MAJOR DELAY
EXIT AT FIRST PENDLETON EXIT
THIS IS EXIT 122
TURN RIGHT ON MAIN
TURN LEFT ON FIRST
TURN LEFT ON WILSON
PROCEED BACK TO I-84

Special messages may be developed for unique situations. The following is an example:

ATTENTION WESTBOUND INTERSTATE 84 TRAFFIC
TOXIC HAZARD AHEAD
INTERSTATE 84 IS CLOSED AT PENDLETON
ALL WESTBOUND TRAFFIC MUST DETOUR AT PENDLETON
PLEASE FOLLOW DETOUR SIGNS
I REPEAT, ALL WESTBOUND TRAFFIC MUST DETOUR AT PENDLETON

Construction and Maintenance Operations

ATTENTION NORTHBOUND INTERSTATE 5 TRAFFIC
DUE TO CONSTRUCTION ACTIVITIES
INTERSTATE 5 IS CLOSED FROM MP 233 TO MP 235
NORTHBOUND TRAFFIC SHOULD MERGE LEFT
THERE IS 2-WAY TRAFFIC
DO NOT PASS
REDUCE SPEED FOR MERGE TO 45 MPH
CONSTRUCTION SPEED ZONE IS 45 MPH
USE CAUTION

In some cases a HAR may be used to provide advance notification of a future construction or maintenance activity:

ATTENTION TRUCKS AND OTHER OVERSIZED VEHICLES
BRIDGE MAINTENANCE WORK WILL BEGIN
ON MONDAY, AUGUST 20TH
THE CLEAR CREEK BRIDGE WILL BE CLOSED TO OVERSIZED VEHICLES
TRAFFIC WILL BE REROUTED
MAINTENANCE WORK IS EXPECTED TO BE COMPLETED BY AUGUST 31ST

Adverse Weather or Environmental Conditions

ATTENTION NORTHBOUND INTERSTATE 5 TRAFFIC
ROCK SLIDE ON INTERSTATE 5
LEFT LANE CLOSED
MOTORISTS SHOULD MERGE RIGHT
REDUCE SPEED

ATTENTION ALL DRIVERS
FOGGY CONDITIONS
VISIBILITY IS LIMITED
0-15 FEET
REDUCE SPEED
USE HEADLIGHTS

Special Events

MOTORISTS TRAVELING TO THE OREGON STATE FAIR
EXIT AT THE FIRST SALEM EXIT, EXIT 257
TURN RIGHT AT FIRST SIGNAL AND FOLLOW SIGNS TO THE FAIRGROUNDS
PARKING IS AVAILABLE AT ALL GATES
EXHIBITORS WITH YELLOW PERMITS SHOULD FOLLOW SIGNS TO EITHER THE
LIVESTOCK ENTRANCE OR MAIN EXHIBITION ENTRANCE

Supplement C: Amber Alert System

The Amber Plan, established in October 2002 by Executive Order No. 02-22, uses the Emergency Alert System, television, radio, the state highway variable message system, and the state Highway Advisory Radio (HAR) system to provide timely emergency information to the public regarding a child abduction. The messages broadcast on a HAR are referred to as Amber Alert messages.

Operation

1. An Amber Alert message shall only be transmitted when there is verification of a legitimate Amber Alert activation from the Oregon State Police (OSP) Northern Communications Center or the Washington County Consolidated Communications Agency (WCCCA) 911 Center.
2. No Amber Alert message shall be transmitted by an ODOT HAR at the request of any other law enforcement offices.
3. When an Amber Alert is active, activation of a HAR is at the discretion of the ODOT Transportation Operations (TOC) shift supervisor.
4. When a HAR is needed to warn motorists of conditions on the highway needing their immediate attention, an Amber Alert message should not be transmitted.
5. The following uses will typically have higher priority than the transmitting of an approved Amber Alert message:
 - Traffic advisories
 - Construction or maintenance operations
 - Adverse weather or environmental conditions
 - Route diversions
6. Unless the Amber Alert is updated with additional vehicle information, or reissued, it should be transmitted for no more than eight hours or until the Amber Alert is officially called off, whichever occurs first. The only exception to this guidelines shall be if the Amber Alert occurs after 8 PM, the Amber Alert will remain active until 9 AM the following morning or until the Amber Alert is officially called off, whichever occurs first.

Approved Amber Alert Messages

The Amber Alert message transmitted on a HAR should be the same message being broadcast by the local radio stations. The following is a sample:

ATTENTION THE EUGENE POLICE DEPARTMENT IS INVESTIGATING A CHILD
ABDUCTION
SUSPECT MAY BE DRIVING A WHITE 1990 TOYOTA CELICA TWO DOOR
LICENSE PLATE NUMBER CL49986
DIRECTION OF TRAVEL IS UNKNOWN
IF YOU ARE ABLE TO PROVIDE ANY INFORMATION THAT MAY ASSIST WITH THIS
INVESTIGATION
PLEASE CALL 911 OR LOCAL POLICE
TUNE TO YOUR LOCAL NEWS STATION FOR UPDATES