Oregon Department of Transportation
and
Oregon Traffic Control Devices Committee

Red Light Running (RLR) Camera Guidelines

2004

OREGON DEPARTMENT of TRANSPORTATION
TRANSPORTATION OPERATIONS DIVISION
TECHNICAL SERVICES
TRAFFIC MANAGEMENT SECTION
http://www.odot.state.or.us/traffic

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Red Light Running Camera Guidelines 2004.doc

Approved by the State Traffic Engineer, in consultation with the Oregon Traffic Control Devices Committee for use on State Highways and adopted by the Oregon Traffic Control Devices Committee as a guide to assist Oregon cities in the deployment of Red Light Running (RLR) Cameras.

Original signed by

Ed Fischer, State Traffic Engineer

Date: May 14, 2004

Original signed by

Robin Lewis, OTCDC Chair

Date: May 14, 2004

The Oregon Transportation Commission approved guidelines for the operation of red light running cameras in January 2002.

Red Light Running (RLR) Camera Guidelines

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Introduction

This document has been prepared by the Oregon Department of Transportation (ODOT) and the Oregon Traffic Control Devices Committee (OTCDC) to assist local jurisdictions in the deployment of Red Light Running (RLR) Cameras. In response to what appeared to be a growing disrespect for traffic laws in general and disobeying red traffic signal indications in particular, the Oregon Legislature enacted a law in 1999 to help Oregon communities effectively enforce and reduce red light running. In 2001 and 2003 the Oregon Legislative Assembly expanded and revised the program.

Supporting Legislation

Chapter 339, Oregon Laws 2003, based on Senate Bill 764 passed by the 72nd Oregon Legislative Assembly revised ORS 810.434-.436. Revisions are indicated in **bold-faced** type.

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SECTION 1. ORS 810.434 is amended to read:

(1) Any city with a population of 30,000 or more may, at its own cost, operate cameras designed to photograph drivers who violate ORS 811.265 by failing to obey a traffic control device. Notwithstanding the population requirement of this section, the City of Newberg may operate cameras as provided for other cities in this section.

(2) Cameras operated under this section may be mounted on street lights or put in other suitable places.

(3) A city that chooses to operate a camera shall:

(a) Provide a public information campaign to inform local drivers about the use of cameras before citations are actually issued; and

(b) Once each biennium, conduct a process and outcome evaluation for the Department of Transportation that includes:

(A) The effect of the use of cameras on traffic safety;

(B) The degree of public acceptance of the use of cameras; and

(C) The process of administration of the use of cameras.

(4) The Department of Transportation shall provide an executive summary of the process and outcome evaluations to each regular session of the Legislative Assembly. The summary shall be presented to the Legislative Assembly by March 1 of the year of each regular session.

*(5) (a) Except as otherwise provided in paragraph (b) of this subsection, a city authorized to operate cameras under this section may not operate the cameras at more than **eight** intersections in the city.*

*(b) A city with a population of 300,000 or more may not operate cameras at more than **12** intersections in the city.*

SECTION 2. ORS 810.435 is amended to read:

Photographs taken under ORS 810.434 may be submitted into evidence in a trial, administrative proceeding or other judicial or quasi-judicial proceeding only for the purpose of proving or disproving a violation of ORS 811.265.

SECTION 3. ORS 810.436 is amended to read:

(1) Notwithstanding any other provision of law, if a city authorized to do so by ORS 810.434 chooses to operate a camera that complies with this section and ORS 810.434, a citation for violation of ORS 811.265 may be issued on the basis of photographs from a camera taken without the presence of a police officer if the following conditions are met:

(a) Signs are posted, so far as is practicable, on all major routes entering the jurisdiction indicating that compliance with traffic control devices is enforced through cameras.

(b) Signs are posted near each traffic control device at which a camera is installed, indicating that a camera may be in operation at that device.

(c) If the traffic control device is a traffic light, the yellow light shows for at least the length of time recommended by the standard set by the Institute of Transportation Engineers.

(d) *The citation is mailed to the registered owner of the vehicle, or to the driver if identifiable, within 10 business days of the alleged violation.*

(e) *The registered owner is given 30 days from the date the citation is mailed to respond to the citation.*

(f) *A police officer who has reviewed the photograph signs the citation. The citation may be prepared on a digital medium, and the signature may be electronic in accordance with the provisions of ORS 84.001 to 84.061.*

(2) If the person named as the registered owner of a vehicle in the current records of the Department of Transportation fails to respond to a citation issued under subsection (1) of this section, a default judgment under ORS 153.102 may be entered for failure to appear after notice has been given that the judgment will be entered.

(3) A rebuttable presumption exists that the registered owner of the vehicle was the driver of the vehicle when the citation was issued and delivered as provided in this section.

(4) A person issued a citation under subsection (1) of this section may respond to the citation by submitting a certificate of innocence or a certificate of nonliability under subsection (6) of this section or any other response allowed by law.

(5) A citation for violation of ORS 811.265 issued on the basis of photographs from a camera installed as provided in this section and ORS 810.434 may be delivered by mail or otherwise to the registered owner of the vehicle or to the driver if the driver is identifiable from the photograph.

(6) (a) If a registered owner of a vehicle responds to a citation issued under subsection (1) of this section by submitting, within 30 days from the mailing of the citation, a certificate of innocence swearing or affirming that the owner was not the driver of the vehicle and a photocopy of the owner's driver license, the citation shall be dismissed. The citation may be reissued if the jurisdiction verifies that the registered owner appears to have been the driver at the time of the violation.

(b) If a business or public agency responds to a citation issued under subsection (1) of this section by submitting, within 30 days from the mailing of the citation, a certificate of nonliability stating that at the time of the alleged violation the vehicle was in the custody and control of an employee or was in the custody and control of a renter or lessee under the terms of a motor vehicle rental agreement or lease, and if the business or public agency provides the driver license number, name and address of the employee, renter or lessee, the citation shall be dismissed with respect to the business or public agency. The citation may then be reissued and delivered by mail or otherwise to the employee, renter or lessee identified in the certificate of nonliability.

(7) The penalties for and all consequences of a violation of ORS 811.265 initiated by the use of a camera installed as provided in this section and ORS 810.434 are the same as for a violation initiated by any other means.

(8) A registered owner or an employee, renter or lessee against whom a judgment for failure to appear is entered may move the court to relieve the owner or the employee, renter or lessee from the judgment as provided in ORS 153.105 if the failure to appear was due to mistake, inadvertence, surprise or excusable neglect.

Approved by the Governor June 12, 2003.
Effective date January 1, 2004.

RLR Camera System Implementation

RLR Cameras monitor both the flow of traffic at the stop location and the condition (or color) of the traffic signal indication on the approach. Special detectors, commonly loops cut into the pavement, check for the passage of vehicles into the intersection and if the traffic signal phase condition is red cause pole mounted cameras to record pictures of the vehicle position, license plate and driver. Upon verification by a police officer, the vehicle owner is issued a citation through the mail. RLR Camera systems should differentiate between vehicles running a red light and those vehicles stopping slightly beyond the stop bar or those vehicles, after stopping, making a legal turn against a red indication.

RLR Cameras are not a panacea for intersection safety problems. RLR Cameras should be installed only where a safety problem with red light running has been documented and then only after other means have failed to solve the problems[1]. When used, they should be a part of a process that considers education, enforcement and engineering, which are essential to any traffic safety program. Enhanced traffic safety is the principal aim of RLR Camera enforcement programs.

Typically RLR Camera Systems are installed under contract, by a commercial firm that specializes in such systems. These contracts cover the furnishing, installation and operation of the RLR Cameras. The firm may also prepare the evidence for verification by local law enforcement and mail the citation. As compensation, the firm usually collects a predetermined fee for this service when the citation fine is received. Costs that the local jurisdiction must cover include internal expenses for engineering plan review, site evaluation and field engineering during the installation phase of the RLR Camera System. Local jurisdictions also can purchase, install and operate RLR Camera Systems or can enter into agreements with other jurisdictions to provide all or a portion of this service.

If the candidate location is at a state highway intersection or on a state highway approach, application to and approval of the Oregon Department of Transportation is required.

[1] Other means should include, but not be limited to, the following. (1) Assuring proper sight distance; (2) Assuring speed zones are consistent with engineering practice; (3) Assuring that the number, size and location of vehicle heads are consistent with the MUTCD and ODOT Traffic Signal Policy and Guidelines; and (4) Assuring that the traffic signal timing is consistent with traffic volume, speed and specific intersection design elements.

Public Information Campaign and Sign Requirements

Oregon Law requires that cities provide a public information campaign to inform local drivers about the use of RLR Cameras before citations are actually issued. Educating the public is a critical step in reducing red light running. In order to effectively change poor driving habits, drivers must be made aware that RLR Cameras are in use. It is recommended that cities hold well-publicized kickoff events and issue periodic press releases about the effectiveness of RLR Camera enforcement within their jurisdictions.

Oregon law also requires that signs be posted, so far as practicable, on all major routes entering the jurisdiction indicating that compliance with traffic control devices is enforced through cameras. The law further requires that signs indicating that a camera may be in operation be posted near each intersection at which a camera is installed.

Operational Considerations

- RLR Cameras should not affect the display or the operation of the traffic signal.
- Power for RLR Camera equipment may be provided from the traffic signal cabinet and should be on its own clearly identified circuit breaker.
- Contact closures as may be required for red and yellow indications on RLR Camera approaches should be electrically isolated from traffic signal equipment.
- Detection loops for RLR camera equipment should not be wired through the traffic signal cabinet, associated electrical conduit, or junction boxes and shall not interfere with the operation of detector loops used for traffic signal operation. At state highway intersections, segregated wiring is required.
- Traffic signal timing changes should not be made to increase the possibility of vehicles running red lights. If a review of traffic signal timing prior to RLR Camera installation identifies inappropriate yellow change interval values that require adjustment, these adjustments shall be made prior to operation of the RLR Camera system.
- Traffic signal timing changes may be made in response to substantial changes in approach speed, design changes, etc.
- Signal plans showing the location of all proposed and existing equipment should be prepared.
- Signs at each City Limit, informing the public that compliance with traffic control devices in enforced through the use of cameras, shall be provided if not already in place. A RLR Camera sign on each covered approach shall be installed and should be shown on or as an attachment to the signal plans. Refer to the ODOT ***Sign Policy and Guidelines for the State Highway System*** for guidance on signs that should be posted.

Siting Considerations

RLR Cameras may not be appropriate at locations where:

- Recent geometric or traffic signal design changes have been made. Supporting crash records may not be applicable in the new configuration.
- Traffic signals have been installed within the previous year. Crash history may be too short to support RLR Camera use.
- Geometric or traffic signal design changes are scheduled and an engineering evaluation indicates such changes may substantially alter the need for RLR Camera enforcement.

- Road or utility work is anticipated during the first year of RLR operation.
- Traffic pattern changes resulting from development, construction detours or similar events are anticipated during the first year of RLR operation.
- An electrical interconnect with "railroad active warning devices" is provided on the approach.
- Design, operation or maintenance is inconsistent with state or local standards and practices.

Safety and Operations Report

A Safety and Operations Report is required for all RLR Camera Systems to be installed at intersections on state highways and is strongly recommended for all other locations since it can provide the basis for the process and outcome evaluation required in ORS 810.434(3)(b). It may be desirable to secure the services of a Professional Engineer to conduct the necessary study.

In addition to a general project narrative, the Safety and Operations Report should address to the extent practical the following:

Crash History - An engineering study of the crash experience at the intersection should be conducted.

- Target crashes for reduction at a RLR installation are angle crashes where the driver of one of the vehicles disregarded the traffic control device. Oregon crash records include codes for driver error that describe these crashes (codes are "DISREGARDED TRAFFIC SIGNAL" or "DISREGARDED STOP SIGN OR SIGNAL").
- Target crashes coded to driver attention may also be included in the study.
- The study should identify the relative crash problem of the intersection based on nearby intersections of similar volume, geometry, and traffic control.

Crash Potential - Documentation supporting the potential for crashes may be included in the report. Crash potential may be supported by any of the following (or other relevant data):

- Traffic citation data
- Complaints
- Enforcement observations
- Speeds, traffic volumes and grades
- Traffic signal spacing
- Proximity to freeway ramp terminals

Design, Operations, and Maintenance Issues –Copies of signal plans showing the location of all proposed and existing equipment should be included. A description of how the RLR Camera System will be operated and maintained should be provided. Any design, operations, or maintenance issues that could affect the potential effectiveness of a RLR Camera System should be identified.

Public Information Campaign – The public information requirements as outlined in ORS 810.434 (3)(a) should be addressed.

Budget – A budget for system implementation and operation should be developed.

PE Certification – The jurisdiction proposing to install a RLR Camera System should secure the services of a Professional Engineer to attest that the traffic signal is operated and maintained in

accordance with the MUTCD and appropriate state and local guidelines. If the signal is on a state highway and is operated and maintained by ODOT this certification is not necessary.

Biennial Report Requirement

Oregon Law requires that once each biennium all cities using RLR Camera Systems must conduct a process and outcome evaluation for the Department of Transportation[2] that includes:

- The effect of the use of cameras on traffic safety
- The degree of public acceptance of the use of cameras
- The process of administration of the use of cameras

Regardless of the jurisdiction in the position of road authority, the jurisdiction overseeing the operation of a RLR Camera System shall prepare the Biennial Report and submit it in January at the start of the regular session of the Oregon Legislature to:

Oregon Department of Transportation
Transportation Safety Division
Attn: Law Enforcement/Judicial Program Manager
235 Union Street NE
Salem, Oregon 97301-1054

The Biennial Report should include the following information:

- Name, address, and phone number of person who will be the main RLR contact for this jurisdiction.
- Date of implementation.
- Number of intersections at which RLR Cameras are installed.
- RLR contractor name.
- Crash data specific to RLR locations for the 3-year period prior to RLR Camera installation and post RLR camera installation data to identify average crash rate and annual change.
- Public information surveys (if available) regarding jurisdiction's use of RLR Cameras.
- Copies of media releases sent as a part of the public RLR awareness program.
- Description of areas of concern or difficulty in administering the RLR Camera enforcement program.
- Available information on the local courts ability to handle the increase in citations.
- “Success stories" to share with the legislature about local RLR program such as major reductions in serious injuries and fatalities in the local jurisdiction due to RLR Camera systems.
- Assessment of how many intersections at which your jurisdiction would consider RLR Camera operation if there were no limit to the number of locations. This may be used to assess potential reductions in crash injury/fatality rates.

ODOT is responsible for presenting a summary of all reports received to the Legislative session by March 1st of the year of each regular session.

[2] The Transportation Safety Division is responsible for the preparation of the biennial report.

Procedure for State Highways

State Traffic Engineer approval is required for RLR Camera installation and operation at all State-owned intersections regardless of operation or maintenance responsibilities. The following procedure should be followed:

- The Applicant:
  - Submits letter to ODOT District requesting authorization to install and operate a RLR Camera at a specific State-owned intersection. The letter shall identify a responsible party to whom an ODOT permit will be issued and the point of contact responsible for the construction, operation, and public information requirements. The letter shall be accompanied by:
    1. The Safety and Operations Report.
    2. A statement of consistency with the Operational Considerations.
    3. Applicant shall ensure that signs at each City Limit, informing the public that compliance with traffic control devices is enforced through the use of cameras, are provided if not already in place. A RLR Camera sign on each covered approach shall be provided and shown on or as an attachment to the signal plans. Refer to the ODOT ***Sign Policy and Guidelines for the State Highway System*** for appropriate signs.

- The District Office:
  - Establishes an account number through ODOT Financial Services identifying responsible party and budget in an Order to Render Service.
  - Issues Miscellaneous Permit to applicant stating conditions of approval. Conditions include the need for State Traffic Engineer approval.

- The Applicant
  - Signs the permit, acknowledging the conditions of approval.
  - Pays a monetary deposit for the following services:
    1. Plan review by the Traffic Management Section estimated at $200 per RLR Camera approach.
    2. Traffic signal cabinet and intersection modifications required to protect ODOT equipment and provide proper communication to RLR equipment estimated at $1000 per intersection.
    3. Sign installation estimated at $200 per sign.
    4. Relocation or repair of existing traffic control devices resulting from the installation of RLR equipment.

- The District Office
  - Upon receipt of signed permit and deposit, forwards plans and supporting documents to the Region Traffic Manager.

- Region Traffic
  - Reviews RLR design and supporting documents and works with applicant to *ensure* the RLR Camera Enforcement Installation Checklist (see page 11) is complete.
  - If supportive of the proposal, forwards all documents to the Traffic Management Section with a recommendation to approve.

State Traffic Engineer approval will be based on review of supporting documents and completion of final, ODOT approved plans.

RLR Camera Enforcement Installation Checklist

Non-State Highway

Location Information

File Code: _____

Acct. No.: _____

Street Name: _____

Intersecting Street: _____

RLR Camera Approaches: _____

☐ Traffic safety need based on crash history, crash potential and/or observed violation data has been documented.

☐ A public information contact has been identified.

Contact Name: _____ Email: _____

Address: _____ Telephone: _____

☐ Location and approaches have been clearly identified.

☐ Traffic signal indications on the approach are clearly visible from an adequate distance based on field observation. Current MUTCD signal visibility standards are met.

☐ Yellow change intervals are displayed for at least the recommended time (see reverse).

☐ Existing traffic signal coordination with adjacent traffic signals is in place and properly timed.

☐ No significant improvement (project) is scheduled or planned that would substantially alter the need for a RLR Camera.

☐ Signs indicating that compliance with traffic control devices is enforced through cameras are posted (or will be provided by this project) on all major routes entering the jurisdiction.

☐ Signs indicating that a camera may be in operation will be posted on all approaches where a camera is to be installed.

☐ No known reason why a RLR Camera should not be installed.

Checklist completed by: _____ Date: _____

Cities authorized to operate RLR Camera
systems as of December 31, 2003 include:

Albany
Beaverton
Bend
Corvallis
Eugene
Gresham
Hillsboro
Keizer
Lake Oswego
Medford
Newberg
Portland
Salem
Springfield
Tigard

*The OTCDC recommends that the following equation be used to calculate the **minimum** yellow clearance time to be used on RLR approaches. It is based on guidance given in the **Traffic Engineering Handbook (5th Edition)** published by the Institute of Transportation Engineers in 1999.*

$$Y = t + v/(2a \pm 64\,g)$$

where: Y = *length of yellow change interval, to the nearest 0.1 second;*
t = *driver perception/reaction time, generally assumed as 1.0 second;*
v = *velocity of approaching vehicle, in feet per second;*
a = *deceleration rate, typically 10 ft/s^2; and*
g = *grade of approach, in % divided by 100 (positive for upgrade, negative for downgrade)*

RLR Camera Enforcement Installation Checklist

State Highway

Location Information File Code: _____

TSSU Location ID: _____ Region: _____ District: _____ Acct. No.: _____

Highway Name and Route Number: _____

Intersecting Street: _____

RLR Camera Approaches: _____

Applicant (City/County): _____

☐ Local jurisdiction has documented traffic safety need based on crash history, crash potential and/or observed violation data.

☐ A local jurisdiction point-of-contact has been identified.

Contact Name: _____ Email: _____

Address: _____ Telephone: _____

☐ Location and approaches have been clearly identified.

☐ Traffic signal indications on the approach are clearly visible from an adequate distance based on field observation. Current MUTCD signal visibility standards are met.

☐ Yellow change intervals are displayed for at least the recommended time (see reverse).

☐ Existing traffic signal coordination with adjacent traffic signals is in place and properly timed.

☐ No significant improvement (project) is scheduled or planned that would substantially alter the need for a RLR Camera.

☐ Signs indicating that compliance with traffic control devices is enforced through cameras are posted (or will be provided by this project) on all state highways entering the jurisdiction.

☐ Signs indicating that a camera may be in operation will be posted on all approaches where a camera is to be installed.

☐ No known reason why a RLR Camera should not be installed.

Checklist completed by: _____ Date: _____

Cities authorized to operate RLR Camera
systems as of December 31, 2003 include:

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