

**SB**

**255**



**Subject:** (H) TRA hearing 4/27

**Date:** Sun, 25 Apr 2004 09:01:21 -0800

**From:** Lee Ann Lucas <lee\_lucas@dps.state.ak.us>

**To:** Barbara C Cotting <barbara\_cotting@legis.state.ak.us>

**CC:** allen storey <allen\_storey@dps.state.ak.us>, Robyn Ramos <robyn\_ramos@dps.state.ak.us>

Good morning Barbara -

Have had a request for Lt. Allan Storey to be available on-line for questions regarding SB 255 - Illegal Preemption Devices and SB 316 - Seat Belt Violation for the (H)TRA hearing 4/27. Lt. Storey's # in Anchorage is 269-4532. Unless I hear otherwise from you, I will provide him with the Bridge # to call in on off-net.

Thanks, Lee Ann Lucas

# Alaska State Legislature

SENATOR  
GENE THERRIAULT

Mailing Address:  
119 N. Cushman Suite 101  
Fairbanks, Alaska 99701  
(907) 488-0857  
Fax: (907) 488-4271



Senate

While in session  
State Capitol  
Juneau, Alaska  
99801-1182  
(907) 465-4797  
Fax: (907) 465-3884  
SENATE DISTRICT F

## Sponsor Statement SB 255

Senate Bill 255: "An Act relating to traffic preemption devices"

Sponsor: Senator Gene Therriault

---

Senate bill 255 was introduced to reserve the use of Traffic Preemption Devices (TPDs) for legitimate authorized users, including emergency response providers, road maintenance and public transit vehicles. TPDs allow vehicles approaching a traffic signal to override the normal signal control and change the light from red to green. This enables emergency vehicles to proceed more rapidly to the situation they are responding to. Unfortunately, without a change in state law, these devices are available for purchase and use by the general public and indiscriminate use could lead to accidents.

This bill is intended to keep these accidents from occurring, by assuring that only authorized personnel use TPDs. This is accomplished by making it illegal to own a TPD unless you are an approved user. In addition, authorized individuals would only be able to use the device in an official capacity, as defined by this bill. The bill also guarantees that mechanics and other repair personnel are allowed to possess and use TPDs, when installing, repairing or testing them in an official capacity.

# FISCAL NOTE

**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

Fiscal Note Number: 1  
 Bill Version: CSSB 255(STA)  
 (S) Publish Date: 3/5/04

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: Public Safety  
 Title An Act relating to traffic preemption devices. RDU Alaska State Troopers  
 Component AST Detachment  
 Sponsor Senator Therriault  
 Requester Senate State Affairs Component No. 2325

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
-----------------------------	--	--	--	--	--	--

<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2004) cost: 0.0

Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

This bill would ban the possession and use of equipment that will activate traffic "preemption" devices if the user is not involved in an emergency operation. The preemption devices send a signal to a traffic light or other traffic control device to give emergency responders priority at intersections that have been equipped with compatible equipment by changing the traffic light or device. Violation of this section would be a class A misdemeanor.

This bill will have no fiscal impact on the Department of Public Safety.

Prepared by: Lieutenant Al Storey Phone 269-4532  
 Division Alaska State Troopers Date/Time 2/9/04 3:55 PM  
 Approved by: Commissioner William Tandeske Date 2/9/2004  
 Agency Department of Public Safety

# FISCAL NOTE

**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

Fiscal Note Number: 2  
 Bill Version: CSSB 255(STA)  
 (S) Publish Date: 3/5/04

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: Public Safety  
 Title Illegal use of Traffic Preemption Device RDU Fire Prevention  
 Component Fire Prev. Operations  
 Sponsor Senator Therriault  
 Requester Senate State Affairs Component No. 494

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
-----------------------------	------------	------------	------------	------------	------------	------------

<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2004) cost: 0.0  
 Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time		0	0	0	0	0
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)  
 This bill makes it unlawful to possess or use a traffic preemption device when not operating an emergency vehicle.  
 SB 255 will have no fiscal impact to the Department of Public Safety.

Prepared by: Gary Powell, Director Phone 269-5491  
 Division Fire Prevention Date/Time 2/9/04 9:39 AM  
 Approved by: Commissioner William Tandeske Date 2/6/2004  
 Agency Department of Public Safety

# FISCAL NOTE

**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

Fiscal Note Number: 3  
 Bill Version: CSSB 255(STA)  
 (S) Publish Date: 3/5/04

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: LAW  
 Title "An Act relating to traffic preemption devices." RDU CRIMINAL  
 Component CDCO  
 Sponsor Senator Therriault  
 Requester Senate State Affairs Component No. \_\_\_\_\_

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
-----------------------------	--	--	--	--	--	--

<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2004) cost: 0.0  
 Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)  
 This bill makes it a Class A misdemeanor to possess or use a traffic preemption device if a person is not at the time of possession or use, operating a emergency vehicle. An exception is made for employees of a municipality or the state who are authorized to install, repair, or maintain traffic preemption devices provided use of the device is in accordance with such authorization.  
  
 Passage of this legislation will have no foreseeable fiscal impact on the Department of Law.

Prepared by: Kathryn A. Daughettee, Director Phone 465-3673  
 Division Administrative Services Date/Time 2/10/04 9:29 AM  
 Approved by: Kathryn Daughettee for Gregg D. Renkes, Attorney General Date 2/10/2004  
 Agency Department of Law

# FISCAL NOTE

**STATE OF ALASKA**  
**2004 LEGISLATIVE SESSION**

Fiscal Note Number: 4  
 Bill Version: CSSB 255(FIN)  
 (S) Publish Date: 4/15/04

Revision Date/Time (Note if correction): \_\_\_\_\_ Dept. Affected: Administration  
 Title: An Act relating to traffic preemption devices BRU: Legal and Advocacy Services  
 Component: Public Defender Agency  
 Sponsor: Senator Therriault  
 Requester: (S) FIN Component No. 1631

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Personal Services	*	*	*	*	*	*
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	*	*	*	*	*	*

<b>CAPITAL EXPENDITURES</b>						
-----------------------------	--	--	--	--	--	--

<b>CHANGE IN REVENUES ( )</b>						
-------------------------------	--	--	--	--	--	--

**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	*	*	*	*	*	*
1005 GF/Program Receipts						
1037 GF/Mental Health						
Other (Specify Type--Do not abbreviate)						
<b>TOTAL</b>	*	*	*	*	*	*

Estimate of any current year (FY2004) cost: 0.0

Mark this box (X) if funding for this bill is included in the Governor's FY 2005 budget proposal:

**POSITIONS**

Full-time						
Part-time						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

This bill will likely have a fiscal impact on the operations of the Agency, but it is impossible to determine with any accuracy what that impact will be. It is not possible for the Agency to determine how many traffic preemption devices exist or will be possessed or used in violation of this proposed bill. Creating a new offense will impact the Agency however since it is historically appointed in 80% of the criminal cases charged. An indeterminate fiscal note is submitted.

Prepared by: Linda K. Wilson, Deputy Director Phone (907)334-4416  
 Division: Public Defender Agency Date/Time April 6, 2004  
 Approved by: Kevin Jardell, Assistant Commissioner Date 4/6/2004  
 Agency: Administration



State of Alaska  
Department of  
**Public Safety**

Frank H. Murkowski, Governor  
William Tandeske, Commissioner

---

February 9, 2004

The Honorable Gene Therriault  
Alaska State Legislature  
State Capitol, Room 111  
Juneau, AK 99801-1182

Dear Senator Therriault:

The Department of Public Safety supports Senate Bill 255 The Unlawful Possession or Use of Traffic Preemption Device. It is a matter of public safety that these devices are used only during an emergency response by an emergency vehicle. The misuse of these devices could easily endanger the lives of pedestrians and motorists. Possession of these devices by untrained personnel invites their abuse, with what could be tragic results. As a side note, unauthorized use of these devices could generate unfounded complaints to state and local traffic engineers who would attempt to trouble shoot traffic signals for problems that don't exist. Unauthorized use would undermine public confidence and support for continued use and expansion of traffic preemption systems.

The unlawful use or possession of a traffic preemption device warrants the punishment of a class A misdemeanor if convicted.

Sincerely,

William Tandeske  
Commissioner

**Subject:** SB 255

**Date:** Thu, 26 Feb 2004 14:51:21 -0900

**From:** "Kiewik, John G." <KiewikJG@ci.anchorage.ak.us>

**To:** <Senator\_Gene\_Therriault@legis.state.ak.us>

Dear Sir:

Thank you for your efforts in regard to Senate Bill 255.

The Municipality of Anchorage presently uses traffic preemption at several intersections and hopes to someday have a full system wide build out. At present, the system is used by the Anchorage Fire Department.

Anchorage uses the 3M™ Opticom™ Priority Control System which features Vehicle ID. Vehicle ID restricts the use of the system to Fire Department vehicles only, in other words, it is encrypted. The system also has two tiers of service, high priority (emergency vehicles), and low priority (other municipal applications). Many communities use the low priority tier to keep their transit operations efficient (buses on time). Anchorage hopes to use this technology in the near future for its transit and street maintenance operations (snow plowing). However, it is unclear to me if this would be possible under the present wording of the bill. Thank you for your attention in this matter.

John Kiewik, Deputy Fire Chief

Support Services Division

Anchorage Fire Department

907-267-5064

# **An Overview of Transit Signal Priority**

Prepared by the

Advanced Traffic Management Systems Committee and  
Advanced Public Transportation Systems Committee  
of the  
Intelligent Transportation Society of America (ITS America)

The revised document was endorsed by the  
ITS Public Transportation Forum of ITS America and America Public  
Transportation Association (APTA)  
and  
The Transportation System Operations and Planning Forum of ITS  
America

Published 2002

*Revised and updated 2004*

THE  
FOLLOWING  
DOCUMENT(S)  
ARE  
POOR  
ORIGINAL  
COPIES

### 3. TSP Benefits & Costs

#### 3.1 Benefits

Several benefits are anticipated from implementing a TSP system. These benefits typically include: reduced transit travel times, improved transit schedule reliability, reduced stops which leads to reduced wear and tear on equipment, less pavement maintenance and increased rider comfort, reduced emissions, and ultimately, an increased attractiveness of transit created by an increased competitiveness to the single-occupancy automobile. Some value-added benefits of the TSP system can also exist which are difficult to quantify (e.g., potentially using the TSP system for a fuel management system). Besides the benefits, TSP systems may also have negative impacts. One of the most commonly cited impacts is the potential increase in traffic delay on side streets.

Transit vehicles spend an average of 15% of their trip time waiting at traffic signals. By example, significantly reducing this wait by 40% on average would reduce a 60 minute round trip to 55 minutes, providing a more competitive service. A key point is that if this route requires a 5-minute headway, only 11 buses are required to support that interval, compared with 12 under the 60-minute trip length. Reduced vehicle and operator costs contribute toward a favorable return-on-investment. However, in order to achieve these savings, it is necessary that the reduced travel time be consistent. Since bus trips are scheduled in advance, the allocated running time may only be shortened if the same trip consistently takes less time<sup>5</sup>.

In at least one study, the benefit/cost ratio associated with such reductions from deploying TSP was found to be approximately 2:1 over a 10-year operating period, giving a payback period of approximately 3 years. Note also that a reduction in the number of transit vehicles used means that a decrease in pollution emissions can be achieved as well.

Successful implementation of TSP has been practiced in Europe since 1968. The European philosophy to TSP is generally more aggressive and intended to provide a high reward for transit vehicles and passengers compared to other vehicles. Zurich and Amsterdam have a majority of intersections enabled for TSP. Installations in England and France have shown a 6 to 42% reduction in transit travel time, with only 0.3 to 2.5% increases in auto travel time.

In North America, Los Angeles, Toronto, Portland, Seattle, Tacoma, Chicago, , among others, have TSP installations in place (see Appendix 1). Other communities, such as Albany, Salt Lake City, Houston, Montreal, Broward County, Santa Clara Valley, etc., have TSP projects in the development or deployment stages. In fact, TSP is becoming increasingly important with the growing interest in Bus Rapid Transit (BRT) systems; 11 of the 17 BRT consortium members are incorporating TSP in their designs.

The potential benefits from TSP for reducing transit signal delay, and improving travel times and reliability are encouraging TSP deployment across the continent. In Toronto for example, average transit signal delay reductions of up to 46% using TSP has justified expansion to over 300 signalized intersections (15% of total) along four bus and five streetcar routes, all in mixed traffic. Other TSP deployments include a 2-¼ mile stretch in Cicero, IL on Cermak Road that is the site of an Illinois Department of Transportation demonstration using wire loops at 10 signalized intersections. Chicago Transit Authority and suburban PACE buses, using transponders and absolute TSP, realized an 8-minute trip time versus 12 minutes before TSP (a 33% reduction). In Los Angeles, two projects demonstrated application of TSP in conjunction with the introduction of Metro Rapid, a Bus Rapid Transit system, at approximately 100 signals along of each corridor (14-16 miles)<sup>6</sup>. Results indicated an average 8% decrease in overall bus running time, and a 33-39% reduction in bus delay at signalized intersections.

Studies associated with the deployments<sup>7,8,9</sup> have shown that there has been little or no impact on the travel times of other motorists along streets operating with TSP, when effectively designed. In fact, the deployment of TSP may positively benefit vehicles traveling in the same direction of the transit vehicle by introducing signal coordination, or momentarily widening the green band for that approach to the traffic signal. As such, some study results confirmed modest improvements for the balance of traffic flow along transit routes with TSP. Studies have shown there to be no general pattern of change to pedestrian delay as a result of the implementation of bus transit priority, with any increases or decreases being minimal.

Unfortunately, a limited amount of before and after data exists for TSP systems. Results from a limited number of case studies are summarized in Table 1. These results are based only on field data. A number of before and after studies have also been performed using simulation models<sup>10,11</sup>. It is important to note that the results in Table 1 will vary based on several factors including system design (i.e., transit detection system and signal control equipment), TSP strategy, type of data collection procedure, traffic volumes, and the combination of implementing TSP with other preferential treatments (e.g., queue jumps, exclusive transit lanes, etc.).

### Lessons Learned

- In general<sup>12</sup>, the case studies reveal that implementing TSP results in:
  - Reductions in transit travel times, transit delay, stops, and schedule unreliability; and
  - Minor impacts to cross-street traffic and buses.

Table 1: TSP Benefits and Impacts – Case Studies

Location	Transit Type	No. of Intersections	TSP Strategy	Benefit/Impact
Portland, OR <sup>13</sup> Tualatin Valley Hwy.	Bus	10	early green, green extension	<ul style="list-style-type: none"> <li>• Bus travel time savings = 1.4 to 6.4%</li> <li>• Average bus signal delay reduction = 20%</li> </ul>
Europe <sup>14,16</sup>	Bus	Five case study sites	Various	<ul style="list-style-type: none"> <li>• 10 seconds/intersection average reduction in transit signal delay</li> <li>• 40 to 80% potential reduction in transit signal delay</li> <li>• 6 to 42% reduction in transit travel times in England and France</li> <li>• 0.3 to 2.5% increase in auto travel times</li> <li>• 1 to 2 year payback period for installation of transit priority systems</li> </ul>
Seattle, WA <sup>10,17</sup> Rainier Avenue	Bus	20	early green, green extension	<ul style="list-style-type: none"> <li>• 24% average reduction in stops for TSP eligible buses</li> <li>• 5-8% reduction in travel times</li> <li>• 25-34% reduction in average intersection bus delay for TSP eligible buses</li> <li>• 40% reduction in critically late trips (trips not completed before next trip scheduled start)</li> <li>• Life cycle benefits are \$15,000 service benefit per intersection and \$40,000 passenger benefit per intersection (over 10 years life)</li> </ul>
Sapporo City, Japan <sup>18</sup> Route 36	Bus	unknown	unknown	<ul style="list-style-type: none"> <li>• 6.1% reduction in bus travel time</li> <li>• 9.9% increase in ridership</li> <li>• 7.1% reduction in bus stops at signals which resulted in a 20.8% reduction in stopped time</li> </ul>
Toronto, Ontario <sup>19,20</sup>	Street car, Bus	260	early green, green extension	<ul style="list-style-type: none"> <li>• Up to 46% reduction in transit signal delay</li> <li>• 10 street cars removed from service</li> <li>• 4 buses removed from service in 2 initial corridors</li> <li>• Payback less than 5 years</li> <li>• Cross street traffic not significantly affected</li> </ul>
Chicago, IL <sup>21</sup> Cermak Rd.	Bus	15	early green, green extension	<ul style="list-style-type: none"> <li>• 7 to 20% reduction in transit travel time depending on time of day, travel direction</li> <li>• Transit schedule reliability improved</li> <li>• Reduced number of buses needed to operate the service</li> <li>• Passenger satisfaction level increased since TSP was implemented</li> <li>• 1.5 second/vehicle average decrease in vehicular delay (range: +1.1</li> </ul>

Location	Transit Type	No. of Intersections	TSP Strategy	Benefit/Impact
				<ul style="list-style-type: none"> <li>to -7.8)</li> <li>8.2 second/vehicle average increase in cross-street delay (range: +0.4 to +37.9)</li> </ul>
San Francisco, CA <sup>22</sup>	LRT and Trolleys	16	early green, green extension	<ul style="list-style-type: none"> <li>6 to 25% reduction in transit signal delay</li> </ul>
Minneapolis, MN <sup>23</sup> Louisiana Ave.	Bus	3	early green, green extension, actuated transit phase	<ul style="list-style-type: none"> <li>0 to 38% reduction in bus travel times depending on TSP strategy</li> <li>23% (4.4 seconds/vehicle) increase in traffic delay</li> <li>Skipping signal phases caused some driver frustration</li> </ul>
Los Angeles, CA Wilshire & Ventura Blvds. <sup>24</sup>	Bus	211	early green, green extension, actuated transit phase	<ul style="list-style-type: none"> <li>Introduced as part of Metro Rapid BRT</li> <li>8% reduction in average running time</li> <li>33-39% decrease in bus delay at signalized intersections</li> <li>Minimal impacts to cross street traffic: average of 1 second per vehicle per cycle increase in delay</li> <li>TSP did not change the traffic Level of Service</li> </ul>
Pierce County, WA Pacific Ave and 18th St. corridors <sup>25</sup>	Bus	42	signal coordination, early green, green extension, low priority preempt	<ul style="list-style-type: none"> <li>Initial deployment in two corridors involving both signal coordination and TSP</li> <li>Signal coordination reduced total signal delay 18-70% for general purpose traffic, and 5-30% for transit</li> <li>TSP reduced transit signal delay an additional 20-40% beyond signal coordination</li> <li>TSP had little impact on traffic progression</li> </ul>