Report to the
Oregon Transportation Commission

Recommendation for Setting Speed Limits on Interstate Highways In Oregon

by the
Oregon Speed Zone Review Panel

September 17, 2004

Summary of Recommendations

Three specific issues were reviewed by the Oregon Speed Zone Review Panel based on the draft recommendation by the State Traffic Engineer regarding changes in speed limits on Oregon's interstate highway system. These issues and the Panel's recommendation are as follows:

Issue 1: Raise the Maximum Speed Limit for Rural Interstate Highways from 65 mph to 70 mph

Recommendation:
Retain the existing maximum speed limit of 65 mph on rural interstate highways should be retained.

Issue 2: Raise the Maximum Truck Speed Limit for Rural Interstate Highways from 55 mph to 60 mph

Recommendation:
Retain the existing maximum speed limit of 55 mph for trucks on rural interstate highways.

Issue 3: Raise the Maximum Speed Limit for Sections of Urban Interstate Highways in Portland, Salem, Eugene and Medford from 55 mph to 60 mph

Recommendation for Interstate 84 in the East Portland Metro Area:
Increase the speed limit on Interstate 84 east of Interstate 205 in the Portland metro area from 55 mph to 60 mph for cars and retaining the 55 mph limit for trucks.

Recommendations for Interstate 5 in Salem
Extend the northbound 65 mph zone on Interstate 5 southerly 0.18 miles and the southbound 65 mph zone southerly 1.17 miles.

Increase the speed limit from 55 mph to 60 mph for cars while retaining the 55 mph limit for trucks.

Recommendations for Interstate 105 and Interstate 5 in Eugene
Retain the existing 55 mph speed limit on Interstate 105.

Retain the existing 55 mph speed limit on Interstate 5.

Recommendations for Interstate 5 in Medford:
Extend the 65 mph zone on Interstate 5 on the north end of Medford 2.5 miles to the south.

Retain the existing 55 mph speed limit for the remaining 3.85-mile section through Medford.

Introduction

The Oregon Department of Transportation (ODOT) adopted the administrative rule (OAR 734-020-0010) for adjusting speed limits on interstates in Oregon. This rule states that the Oregon Speed Zone Review Panel will make a recommendation to the Oregon Transportation Commission for reasonable and safe speed limits for sections of the interstate system.

The OAR requires that as part of the Speed Zone Review Panel's report, the basis for its recommendations shall be explained. This basis shall include information obtained from an engineering investigation report, an issues report and comments received at public meetings.

The "*Engineering Investigation Report – Oregon Interstate Speed*", August 12, 2004, was prepared by the Traffic Engineering and Operations Section of ODOT. This report includes the technical data that was collected for investigating the speed zones on practically all sections of the interstate system in Oregon. The report also includes a draft recommendation from the State Traffic Engineer for changes to interstate highway speed limits.

The Issues Report was developed by Portland State University titled "*Impacts and Issues Related to Proposed Changes in Oregon's Interstate Speed Limits*", September 2004. PSU teamed with Oregon Health Sciences University and Kittelson & Associates, Inc. to produce the report. The report documents the expected impacts to a wide range of policy issues associated with speed and setting speed limits.

As required by the OAR, the Speed Zone Review Panel conducted public meetings throughout Oregon to receive input regarding the draft recommendations presented in the Engineering Investigation Report. Five meetings were held the week of August 23, 2004 in Grants Pass, Eugene, Portland, The Dalles, and La Grande. There were a total of 42 people who presented oral testimony at these five meetings.

ODOT also received approximately 222 written public comments either by letter, email or submitted at the public meetings. All comments were compiled by ODOT staff and then documented and summarized in a report titled, "*Public Comments on Interstate Highway Speed Limits*", September 3, 2004.

Based on the State Traffic Engineer's draft recommendation for changes to interstate speed limits, the Panel narrowed its focus to three distinct issues in which to develop its recommendations. These issues are:

1. Raise the maximum speed limit for rural interstate highways from 65 mph to 70 mph.
2. Raise the maximum truck speed limit for rural interstate highways from 55 mph to 60 mph.
3. Raise the maximum speed limit for sections of urban interstate highways in Portland, Salem, Eugene and Medford from 55 mph to 60 mph.

As stated in the Issues Report, as a whole, our society has recognized the benefits of limiting speed choices of drivers by imposing speed limits. However, setting speed limits is not an exact science; it is a public policy matter that is about trade-offs between safety, travel efficiency, and societal values.

The affects of changing speed limits is difficult to predict and to measure due to the complexity of the multitude of variables associated with human behavior, vehicle characteristics, roadway conditions, environmental factors, and law enforcement practices. The Panel spent significant time listening to and reviewing public input and considering the many technical aspects associated with setting speed limits.

Given the importance of this public policy matter, the Panel would like to commend the Governor, the State Legislature, and the ODOT for providing for a review process that includes public input and participation. The Panel appreciates the opportunity to be a part of this process and hopes that this report will be of value to the Commission in making its final decision regarding speed limits on interstate highways in Oregon.

Issue 1: Raise the Maximum Speed Limit for Rural Interstate Highways from 65 mph to 70 mph

Considerations:
Existing speed data indicates that the statewide average 85th percentile speed of passenger cars on rural interstate highways is 71.1 mph. The statewide average for the average speeds of passenger cars on rural interstate highways is 66.3 mph.

The statewide average crash rate for rural interstate highways is 0.24 crashes per million-vehicle-miles. Rural interstate crash rates in Oregon are low compared to national averages and lower than all neighboring states.

Increasing the speed limit will likely result in an increase in travel speeds. As an example, the Issues Report states that a change in the speed limit from 65 mph to 70 mph for passenger cars will likely result in increases of average and 85th percentile speeds of at least 2 mph but more likely 4 mph over time.

Increases in vehicle speeds affects crashes by increasing distance requirements for crash avoidance and causing vehicle control issues.

The risk of crash involvement increases with deviations from the average speed of traffic.

The severity of collisions increases with speed.

As a result of increased vehicle speeds, the number of injuries and fatalities from crashes is expected to increase. If speed limits are raised to 70 mph, a reasonable estimate in the increase in the number of both fatalities and injuries on the interstate highway system is 5 to 15%. The predicted increase translates to an additional 2 to 11 persons fatally injured and an additional 30 to 90 people with major injuries per year.

Increases in vehicle speeds are likely to occur for short sections of roadways adjacent to those interstate highways where speed limits are raised.

Enforcement resources necessary to maintain existing speeds are not likely to be available.

The costs due to crashes are significant. These include the financial costs for emergency services, incident response, traffic delays, long-term public and private health care services for disabled persons, and workplace losses for employees involved in crashes. The social costs include the loss of life and/or the ability to live a normal life and the loss to families and friends. The Issues Report lists estimated values for the comprehensive costs for various types of crashes. A fatal crash is valued at $3.1 million, an incapacitating crash is $180,000; and a property-damage-only crash is valued at $2,000.

In rural areas, the health-related impacts are likely to be disproportionately greater due to fewer emergency medical services and less specialized trauma care.

Increases in speeds will reduce travel time for highway users. Raising the speed limit from 65 mph to 70 mph for passenger cars and light vehicles will reduce existing travel times by an estimated 7.2%. Estimated value of time saved for these users for the 300-mile section of Interstate 84 between The Dalles and Ontario is approximately $13 million per year. For the entire rural interstate system, the estimated value of time saved is $52.7 million per year. This is based on assumed values used in the Issues Report.

Increases in vehicle speeds results in increases in fuel consumption and tailpipe emissions. For passenger cars and light vehicles using the interstate system, an increase in the speed limit from 65 to 70 mph could increase fuel use by an estimated 9% and emissions by about 5%.

Oregon is one of nineteen states that has retained the 65 mph maximum speed limit on rural interstates, and the only western state to do so.

A summary of the written and oral public comments indicates that approximately 50% favored raising speed limits while 44% opposed the idea. The primary reason given for not raising speed limits was safety. Reasons given for raising speed limits include the positive experience other states have had that have raised speed limits to 70 and 75 mph. Although not quantified, it can be assumed that another primary reason for raising the speed limit is the decrease in travel time and the feeling of being impeded by the lower speed limit.

Additional arguments for raising speed limits included the fact that the interstates were designed for higher speeds, and that raising the speed limit would bring more drivers in compliance with the law. The current speed limits create speeders out of many if not most drivers.

Recommendation:
Retain the existing maximum speed limit of 65 mph on rural interstate highways should be retained.

Discussion:

The Panel was unanimous in its recommendation to retain the existing maximum speed limit of 65 mph on rural interstate highways should be retained. The Panel believes that the safety and environmental benefits for keeping the 65 mph speed limit outweigh the travel time benefits of a 70 mph speed limit.

Regarding public testimony, even though the majority of responses favored raising speed limits, it was not an overwhelming majority. Public opinion based on the feedback received is fairly split on this issue.

In response to the arguments made for raising the speed limit, the Panel did not feel that they were convincing enough to justify recommending increased speed limits. Oregon should not raise its speed limits just because other states have higher speed limits. In fact, the Panel believes that Oregon's good safety record is compelling evidence to retain the current speed limits, especially in light of the minimal resources dedicated to enforcement.

The case made for raising speed limits because interstates are designed for higher speeds was considered to be irrelevant. For the many sections of interstate highway that are relatively flat and straight, design speeds as they relate to setting speed limits are not applicable. In fact, a reasonable argument can be made that the numerous sections of interstate highway that are designed for speeds less than 70 mph would justify retaining the lower 65 mph speed limit.

The argument that raising the speed limit would bring many Oregon drivers into compliance with the law was also not persuasive. The Panel agrees with the conclusion in the Issues Report that a 5 mph increase in the speed limit on rural interstates will likely result in up to a 4 mph increase in both the 85th percentile and average speeds. The State of Washington experienced this when it raised its interstate speed limit from 65 mph to 70 mph. Similarly, the majority of the Panel disagrees with the conclusion in the Engineering Investigation Report that the maximum speed limit for most rural interstates could be 70 mph since the existing 85th percentile speed is just over 70 mph is. Without substantial increases in enforcement levels accompanied by decreases in the tolerance for enforcing speeds exceeding the speed limit, any increase in the speed limit would simply raise the bar with respect to the 85th percentile speed.

With one exception, the Panel did not review individual sections of interstate system as broken down in the Engineering Investigations Report. The Panel found no reason to look at raising the speed limit on a piecemeal basis. The Panel strongly believes that consistent speed zoning benefits motorist by providing certainty while driving. However, the Panel did not have data to support this as it was not addressed in the Issues Report.

The Panel did review one individual section of rural interstate highway based on a request by the City Engineer from the City of Wilsonville to lower the speed limit on Interstate 5 from 65 mph to 55 mph within the Wilsonville city limits. Staff in the Traffic Engineering and Operations Section provided the Panel with detailed information about this section. The existing speed and crash data did not suggest that a lower speed limit was needed. The recent fatal crashes cited included median crossing crashes that will be mitigated considerably by the installation of a median cable-barrier system that is currently under construction. Given the recent increase in development activity in the Wilsonville area, reconsideration of this particular speed zone might be appropriate

sometime in the future. The Panel suggests that ODOT do this if requested by the City of Wilsonville.

Issue 2: Raise the Maximum Truck Speed Limit for Rural Interstate Highways from 55 mph to 60 mph

The Engineering Investigation Report did not make a recommendation regarding increasing the maximum truck speed limit on rural interstate highways. However, the Report did state that a 60 mph speed limit would be reasonable and safe for trucks. Given the amount of public comments received regarding the truck speeds and the differential speed limit for trucks, the Panel believed it should review the current 10 mph differential speed and make a recommendation.

Considerations:
The Issues Report states that no compelling research has been found that strongly supports the position that differential speed limits either improve or are detrimental to safety.

The impact on safety, measured by a change in the number of crashes, is not clear. On one hand, reducing the speed differential will likely result in less speed dispersion between cars and trucks. Research indicates that reducing speed dispersion for a more uniform traffic stream will have a positive effect on safety. However, increases in truck speed limits will likely result in increases in truck speeds. Speed increases are generally associated with a negative impact on safety as previously explained. Also, an increase in truck speeds will likely increase the speed dispersion in truck speeds themselves which may have a negative impact on safety.

Experience in states with the 5 mph differential speed limits indicates that over time, truck speeds will nearly equal those of passenger cars. Washington, Montana and Idaho have a 10-mph differential speed for trucks, similar to Oregon. California has a 15-mph differential speed, and the remaining western states have no differential speed for trucks.

Increases in truck speeds will reduce travel time for these highway users. Raising the speed limit from 55 mph to 60 mph for trucks will reduce existing travel times by an estimated 7.5%. Estimated value of time saved for these users for the 300-mile section of Interstate 84 between The Dalles and Ontario is approximately $17 million per year. For the entire rural interstate system, the estimated value of time saved is $46.7 million per year. This is based on assumed values used in the Issues Report.

Federal law promotes safe truck operations, including reasonable and safe speeds, by penalizing drivers who are caught exceeding posted speed limits by 15 mph. This can result in losing one's Commercial Driver's License, which is a strong incentive to not drive at excessive speeds.

Truck drivers are professional drivers that have training and experience to operate their vehicles unlike many drivers of passenger cars and other light vehicles.

Anti-lock brake systems for trucks have greatly improved the handling characteristics of trucks while braking. Studies indicate that even with anti-lock systems, truck braking

distances remain longer than passenger cars on dry pavement. However, on wet pavements, the two are nearly equal.

Recommendation:
Retain the existing maximum speed limit of 55 mph for trucks on rural interstate highways.

Discussion:
Panel members were split on this particular issue, primarily due to the lack of conclusive data that would justify either keeping the 10 mph differential speed limit or reducing it. The benefit of time-savings at the higher speed is substantial; however, the Issues Report did not provide a complete cost/benefit analysis for raising truck speeds. Without reasonably conclusive data, Panel members relied more heavily on public testimony and personal experiences to arrive at a recommendation.

Not unexpectedly, public testimony was relatively split on this matter. In general, those individuals associated with the trucking industry supported reducing or eliminating the differential. Few, if any, in the industry argued for retaining it. The reasons for reducing or eliminating the differential speed included reduced operating and travel time costs and improved safety. Some individuals made the case that due to the gearing ratio in trucks, operating at higher speeds reduced fuel consumption. Known research does not support this argument.

Individuals opposed to reducing or eliminating the truck speed differential were concerned that it would result in higher truck speeds, which in turn, would have a detrimental effect on safety.

Other comments by the public and observations by Panel members include:

- The differential speed allows drivers of passenger cars to readily pass trucks. Given the size of trucks, this was considered to be a positive aspect of the differential speed.
- An increase in truck speeds means a greater dispersion of truck speeds which will result in more trucks needing to pass other trucks, thus creating more congestion.
- The differential speed reduces the smooth flow of traffic by creating a significant speed variance between trucks and other vehicles.
- Slower trucks tend to encourage drivers of passenger cars to hang out in the left lanes.

Given that there is not strong support or overly compelling arguments to change the speed differential, and given the good track record for safety on Oregon's highways, the Panel's recommends retaining the 55 mph truck speed limit on rural interstate highways.

Issue 3: Raise the Maximum Speed Limit for Sections of Urban Interstate Highways in Portland, Salem, Eugene and Medford from 55 mph to 60 mph

The Engineering Investigation Report makes recommendations for increasing maximum speed limits for passenger cars on several sections of urban interstate highways. The 55 mph speed limits on Interstate 84 east of Interstate 205 in the east Portland metro

area, Interstate 5 in Salem, Interstates 5 and 105 in Eugene, and Interstate 5 in Medford were investigated. The Report recommends raising the 55 mph speed limit to 60 mph for passenger cars for each of these sections except Interstate 105 in Eugene and the viaduct section of Interstate 5 in Medford. The Panel reviewed these sections and made its own specific recommendations.

Considerations:
The 55 mph maximum speed limit on urban interstates was originally established based on political boundaries. Providing more uniform speed limits on all interstate highways would benefit drivers in that they would know more readily what speeds are legal and appropriate. Also, as stated in the Issues Report, drivers must feel that the posted speed limit is reasonable; otherwise, they will tend to ignore the limit.

Very few public comments were received regarding these relatively short sections of urban interstate highways. Due to this, it is difficult to gauge public acceptance or concern for the

Interstate 84 in the East Portland Metro Area

Recommendation:
Increase the speed limit on Interstate 84 east of Interstate 205 in the Portland metro area from 55 mph to 60 mph for cars and retaining the 55 mph limit for trucks.

Discussion:
The Panel concurs with the recommendation in the Engineering Investigation Report to increase the speed limit on Interstate 84 east of Interstate 205 from 55 mph to 60 mph for cars and retaining the 55 mph limit for trucks. This 8.3-mile section of Interstate 84 is wide, straight and flat with very few interchanges. The crash rates are well below statewide averages for urban freeways.

Interstate 5 in Salem

Recommendations:
Extend the northbound 65 mph zone on Interstate 5 southerly 0.18 miles and the southbound 65 mph zone southerly 1.17 miles.

Increase the speed limit from 55 mph to 60 mph for cars while retaining the 55 mph limit for trucks.

Discussion:
The Panel concurs with the two recommendations in the Engineering Investigation Report for this section of Interstate 5. The first recommendation is to extend the northbound 65 mph zone on Interstate 5 southerly 0.18 miles and the southbound 65 mph zone southerly 1.17 miles. As stated in the Investigation Report, these new boundaries better align with the merge points, traffic volumes, and the operating characteristics than the existing boundaries. The existing boundaries were based on political urban area boundaries and were not appropriate from an operational perspective.

The second recommendation is to increase the speed limit from 55 mph to 60 mph for cars while retaining the 55 mph limit for trucks. This 9-mile section of Interstate 5 is 6 lanes for approximately seven miles and 4 lanes for approximately 2 miles. The crash rates are both well below statewide averages for urban freeways.

Interstate 105 and Interstate 5 in Eugene

Recommendations:
Retain the existing 55 mph speed limit on Interstate 105.

Retain the existing 55 mph speed limit on Interstate 5.

Discussion:
The Panel concurs with the recommendation in the Engineering Investigation Report to retain the existing 55 mph limit on Interstate 105. The report states that although average and 85th percentile speeds are relatively high, the high traffic volumes, the high congestion levels, the urban character of the roadside, and the fact that this is a relatively short section (2.95 miles) of highway suggest that 55 mph is a more appropriate speed limit.

The Engineering Investigation Report recommended increasing the speed limit on Interstate 5 from 55 mph to 60 mph for cars only. The Panel does not agree with this recommendation and supports retaining the 55 mph speed zone. Even though crash rates for this section are well below statewide averages for urban interstates, the Panel believes that certain factors warrant retaining the existing speed zone. These factors are deficient roadway geometrics, the urban character of the roadside, the relatively short section with 6 travel lanes (2.4 miles), and the likely potential of a carryover effect for higher speeds on both Interstate 105 and Beltline Highway.

Interstate 5 in Medford

Recommendations:
Extend the 65 mph zone on Interstate 5 on the north end of Medford 2.5 miles to the south.

Retain the existing 55 mph speed limit for the remaining 3.85-mile section through Medford.

Discussion:
The Panel concurs with the recommendation in the Engineering Investigation Report to extend the 65 mph zone on Interstate 5 on the north end of Medford 2.5 miles to the south. The existing boundaries were based on political urban area boundaries and were not appropriate from an operational perspective.

The Panel recommends that the 55 mph speed limit be retained for the remaining 3.85-mile section through Medford. Members were in full agreement that the recommendation in the Engineering Investigation Report provided segments of 5-mph increments that were too short and may present enforcement problems.

Other Issues and Recommendations:

- The Panel recommends that

A number of public comments focused on certain highway safety measures that are not directly related to setting speed limits. The Panel wishes to recognize these areas and to ask ODOT, to the extent that it has responsibility for or influence over these, to evaluate these areas and work to make improvements as deemed appropriate. These areas are:

- Increase in speed enforcement levels
- Improve driver education services
- Improve driver attentiveness
- Reduce aggressive driving
- Reduce the tolerance level for speeds over the speed limit that are not enforced

The Panel recommends that ODOT consider doing more work in the following areas prior to or at the time of the next review of speed limits on Oregon highways:

1. Conduct more research to better understand the costs and benefits of raising speed limits. These areas where additional research would be beneficial are:
    - Economic benefits of shorter travel times and improved mobility.
    - Costs associated with incident management due to highway crashes
    - The social impacts to "victims" of speed-related crashes
    - The affect on work zone safety
    - The affect on elderly drivers and their willingness and/or ability to safely drive higher speed facilities
2. Consider the use of variable speed limits especially in eastern portions of the state. These could be based on time-of-day, weather conditions, traffic conditions, etc.
3. Review and consider requiring certain types of vehicles to travel at the maximum truck speed limits. These vehicles include buses, RVs, vehicles with trailers, etc.
4. Review regulations for the use of the left lane on multi-lane highways.
5. Rely less on the 85th percentile speeds in setting speed limits. The 85th percentile is an important factor but is deficient in determining safe and reasonable speeds due to influences from existing speed limits and enforcement practices.
6. Collect data from other states to understand the effect higher speed limits has on speed variances for all traffic and for trucks only.
7. Evaluate the benefits of new operational improvements to trucks.
8. Consider the findings from the required annual evaluations on those sections of interstate where speed limits are raised.
9. Amend OAR 734-020-0010, Section 2(c), to have the Department's recommendation tied directly to the following considerations:
    - Economic impacts including a net cost analysis of cost and benefits.
    - Health impacts including EMS, trauma system, Oregon Health Plan, and disability and social services.
    - Environmental impacts including fuel efficiency, air pollution, and incident management.

The Panel believes that the most effective means for bringing drivers into compliance with Oregon speed laws – in other words, reducing the number of current speeders on our highways – requires three concerted actions:

1. Provide more resources to the Oregon State Police for speed enforcement,
2. Reduce the current 10-15 mph tolerance for speeding. This will require commitments from law enforcement agencies and the court systems to change long-standing practices.
3. Lastly, set speed limits at levels that coincide with speeds that the vast majority of drivers are traveling. As noted in the Engineering Investigation Report, these are currently 70 mph for passenger cars and 60 mph for trucks on most Oregon interstate highways.