

# Washington State Freeway HOV System

February 2007



## What are HOV lanes?

HOV lanes are high occupancy vehicle lanes, also known as carpool or diamond lanes. HOV lanes are reserved for people who share the ride in buses, vanpools, or carpools. They are generally inside (left) lanes and are identified by signs along the roadway and diamond symbols painted on the pavement. Freeway HOV lanes are typically separated from the other lanes on the freeway by a solid white line.

Vehicles must carry at least two people in order to use HOV lanes. The only exception is on westbound State Route 520 between Interstate 405 and the Evergreen Point Floating Bridge where three or more people are required. Public buses, motorcycles, and emergency vehicles may use the HOV lanes regardless of the number of occupants.

## Why do we have HOV lanes?

**Efficiency.** HOV lanes increase freeway efficiency by moving more people in fewer vehicles than the full lanes next to them.

**Reliability.** HOV lanes help express buses stick to their schedules. Carpools and vanpools also receive a more reliable freeway trip.

**Speed, Ease, & Money.** Users cite saving time and money, reduced stress, and convenience as the main reasons they use the HOV system.

**Freeway Demand.** HOV lanes reduce competition for a limited amount of space on the freeways during rush hours.

**Fewer Cars Area-Wide.** HOV lanes reduce the number of car trips on the overall transportation system.

**Air Quality.** Whenever the total number of car trips goes down, less of a burden is placed on the environment.



[www.wsdot.wa.gov/hov](http://www.wsdot.wa.gov/hov)

## The Freeway HOV System

The freeway HOV system is a key part of our state's highway network. It connects many population and employment areas within the greater Seattle metropolitan area, providing north-south and east-west connections between Everett, Seattle, Federal Way, Auburn, Bellevue, Issaquah, Redmond, and other cities. HOV lanes enable commuters to get to work more quickly, and provide an incentive to take the bus, carpool, or vanpool. The HOV lanes also provide access for emergency vehicles when needed.

### How do HOV lanes work?

HOV lanes on the west side of Lake Washington operate 24 hours a day, seven days a week. HOV lanes on the east side of Lake Washington operate between 5 a.m. and 7 p.m., and are open to everyone at night. Direct access ramps (ramps which drop down directly into the HOV lanes) are restricted to carpools, vanpools and buses even when HOV lanes are open to all traffic. Freeway HOV lane operating hours are:

**I-5:** 24 hours a day

**I-90 (east of I-405):** 5 a.m. – 7 p.m.

**I-90 (west of I-405):** 24 hours a day

**I-405:** 5 a.m. – 7 p.m.

**SR 167:** 5 a.m. – 7 p.m.

**SR 520 (east of I-405):** 5 a.m. – 7 p.m.

**SR 520 (west of I-405):** 24 hours a day

Note: This lane requires three or more people.

**Direct access ramps (all):** 24 hours a day.

Note: Direct access ramps at Ash Way are for transit-only.

Vehicles carrying the required number of persons may cross the solid white line and enter or exit HOV lanes at any point. The definition of "person" is not limited by age or driver's license status. There is no weight limit for recreational vehicles or buses, but trucks are limited to 10,000 lbs. Towing is allowed in the HOV lanes as long as an adequate speed can be maintained.

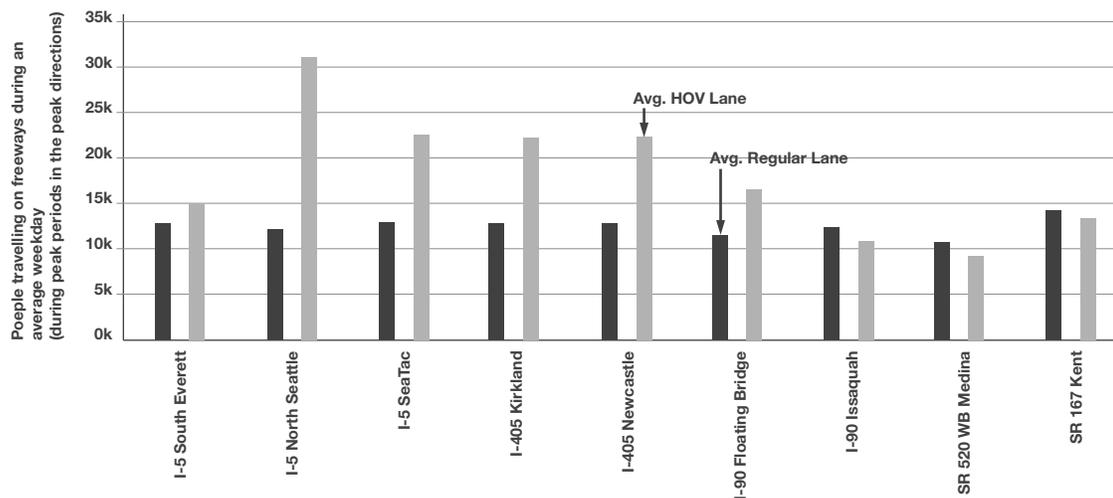
Vehicles in the HOV lanes during operating hours without the required number of people or weighing more than 10,000 lbs. are subject to a \$101 fine from the Washington State Patrol. Citizens may also report HOV lane violators through the HERO program at 206-764-HERO or online at: [www.wsdot.wa.gov/hov/hero](http://www.wsdot.wa.gov/hov/hero).

### What makes HOV lanes efficient?

HOV lanes are designed to maximize the movement of people rather than vehicles, so they often have more people in them than the other lanes even when they don't look full. On I-5 in north Seattle, HOV lanes carry almost three times as many people during the afternoon rush hours as any of the lanes next to them. Buses can carry the equivalent of 20 or even 50 cars. As shown in the chart below,\* most 2005 monitoring locations were recorded as having more people in the HOV lane than in an average adjacent lane during rush hours.

\*This chart compares the number of people carried in HOV lanes to the average lane next to them at different points around the system during the peak commuting hours in 2005. Peak periods normally occur between 6-9 a.m. and 3-7 p.m.

Number of people moving in freeway HOV lanes compared to other lanes in 2005



### Which HOV lanes are less efficient and why?

There were three locations where HOV lanes did not move more people than adjacent lanes during 2005:

**SR 520, Medina:** The westbound HOV lane between I-405 and the Evergreen Point Floating Bridge is the one segment in the HOV system which requires three or more people. This is due to safety reasons. Note that even though person volumes in this HOV lane are slightly lower than the adjacent lanes, this HOV lane experiences congestion during the morning and evening rush hours. The SR 520 Bridge and Replacement Project is expected to result in less congestion and higher volumes in the HOV lane. For more information visit [www.wsdot.wa.gov/projects/SR520bridge](http://www.wsdot.wa.gov/projects/SR520bridge).

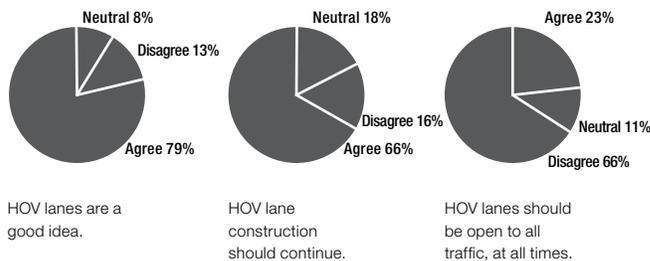
**SR 167, Kent:** Although steadily increasing, HOV volumes on SR 167 lag behind those around the rest of the system. This may be for several reasons, including low transit service levels as well as the draw of Sounder Commuter Rail. Lower usage on this HOV corridor is one of the reasons that SR 167 has been selected as the location for the HOT lanes pilot project. This project will allow solo drivers the use of extra space in the HOV lane for a toll. For more information visit [www.wsdot.wa.gov/projects/sr167/hotlanes](http://www.wsdot.wa.gov/projects/sr167/hotlanes).

**I-90, Issaquah:** Lower HOV usage in this area can primarily be linked to lower congestion levels in the freeway lanes during the commuting hours. However, volumes in the HOV lane have been growing more quickly as freeway congestion has been increasing. The cities of Issaquah and Sammamish are forecasted to experience rapid growth over the next 30 years. HOV usage on this corridor is expected to continue to grow as this area develops.

### What is the public saying about HOV lanes?

HOV lanes in the Puget Sound region are popular with both HOV and solo drivers. A public opinion poll done in 2004 showed that 79 percent of freeway drivers *who do not usually use the HOV lanes* still think the lanes are a good idea. Of this same group, 66 percent feel that HOV lane construction should continue, and disagree with the idea of opening the HOV lanes to everyone all the time. The full opinion poll is available at [www.wsdot.wa.gov/hov/policy](http://www.wsdot.wa.gov/hov/policy).

### 2004 Survey Responses from Solo Drivers



### Would traffic move faster if the HOV lanes were opened to all traffic all the time?

Studies show that HOV lanes encourage commuters to travel together. Many people who do not usually drive alone on the freeway during rush hours would switch to solo freeway driving during the worst commuting periods if the HOV lanes were opened to general traffic—including many of the people who are currently riding the bus, carpooling, and vanpooling. This would quickly result in another clogged lane.

An example of this was the HOV pilot project in Vancouver WA. An HOV lane operated on southbound I-5 through Vancouver from 2001 until 2005 during the morning commute. By the end of the project, this HOV lane carried more people per lane than either of the adjacent freeway lanes. The number of bus riders and carpools increased, HOV speeds and reliability improved, and the public generally approved of the lanes. Other circumstances resulted in a recommendation by the local transportation council to end the pilot. These circumstances included insufficient park-and-ride facilities, cutbacks in transit service coupled with an increase in fares, and a lack of connecting HOV lanes into Portland. Travel time through the corridor has not improved since the HOV lanes were opened to general traffic.

### How well is the HOV system working overall?

Freeway HOV lanes are working well in these ways:

- Freeway HOV lanes move approximately one third of the people on rush hour freeways in only 18 percent of the vehicles.
- The average HOV lane is carrying 1½ times as many people as the average freeway lane.
- HOV lanes are saving users up to 16 minutes per corridor during rush hours. Time savings vary by location.
- Puget Sound enjoys one of the lowest HOV lane violation rates in the nation. The system-wide rate is less than five percent.

WSDOT has established a performance standard for the freeway HOV system: A driver in an HOV lane should be able to drive at least 45 mph during the peak commuting hour 90 percent of the time. Freeway HOV lanes are facing challenges in these ways:

- I-5, I-405, and SR 520 are no longer meeting this performance standard in the main commute directions.
- SR 167 and I-90 show growing volumes but still have space available.

Both over- and under-use of the HOV system are a problem. When HOV lanes are over-utilized and moving slower than 45 mph, it becomes difficult for buses to maintain their schedules, carpools save less time, and part of the incentive to share rides is lost. When HOV lanes are under-utilized, valuable infrastructure is not being used to its full potential, and the overall efficiency of the system suffers.

### What is in the future for HOV lanes?

Population is expected to increase by one million over the next 35 years in the Puget Sound region. Innovative technology and other system management tools will be necessary to help keep everyone moving.

WSDOT will be initiating a study in 2007 to look at ways to help over-utilized HOV lanes. Meanwhile here are some other measures being taken to help the HOV system stay productive:

### NEW LANES

Approximately 45 miles of new HOV lane are currently under construction. These projects will expand the HOV system through Everett, to the Pierce/King County line, and eventually through Tacoma, Puyallup, and Gig Harbor. Pierce County's first HOV lane segment opened on SR 16 in January 2007.



### NEW RAMPS

Ramps that provide direct access to and from the HOV lane are planned for 20 locations throughout the Puget Sound region (see dots on front map). Direct access ramps improve travel time, safety, and reliability by providing a more direct way for HOVs to get in and out of the HOV lanes. They create fewer conflicts between HOVs and general traffic by removing the need for HOVs to weave across other lanes.

Five of these ramps have already been built in partnership with Sound Transit and other agencies, and are producing time savings of up to 12 minutes per round trip. The five direct access ramps that are open for operation are located at the Ash Way Park & Ride, Lynnwood Transit Center, downtown Bellevue, Eastgate Park & Ride, and Federal Way Transit Center. Another three direct access ramp locations are under construction: in Everett (on I-5 at Broadway and at 112th Street SW), and in Totem Lake (on I-405 at NE 128th Street).

### HOT LANE PILOT PROJECT

HOT lane stands for high occupancy toll lane. In underutilized HOV lanes, HOT lanes can allow single occupant vehicles to drive in the lane for a fee. Toll prices vary depending upon how much space is available in the lane; the less space, the higher the toll. In this way the optimum number of vehicles is allowed in the lane. Learn more about our first HOT lane pilot project opening on SR 167 in 2008 by visiting: [www.wsdot.wa.gov/projects/sr167/hotlanes](http://www.wsdot.wa.gov/projects/sr167/hotlanes).

Simulation of SR 167 Pilot Project with HOV lanes converted to HOT lanes

### Americans with Disabilities Act (ADA)

Materials can be provided in large print, Braille, cassette tape, or on computer disk for people with disabilities by calling the contact listed on this page. Persons who are deaf or hard of hearing may contact OEO through the Washington Relay Service at 7-1-1.

### Title VI Statement to Public

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### For more information go to:

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