



## TRANSPORTATION INDICATORS

### Introduction

#### I. Purpose of Transportation Indicators

The key outcomes of the CPP transportation policies are to:

- Enhance Transportation and Land Use Linkages
- Increase the Availability of Modes other than Single Occupant Vehicles.
- Reduce Commercial Traffic Congestion
- Protect and Improve the Transportation Infrastructure

The Transportation Indicators show changes over time in mobility-related phenomena as growth occurs, and the goals of the CPPs are realized. The goals include an increase in regional mobility and progress towards a multi-modal transportation system.

By reporting on parameters that are related to the linkage between transportation and land use development, and on the transportation choices made by King County residents, the Benchmark Report will help the Growth Management Planning Council (GMPC) evaluate regional progress toward the achievement of the Countywide Planning Policies' vision.

Over the past seven years that data for the indicators have been collected, we have learned that some indicators vary on an annual basis while others change minimally over a long term or provide data that is less reliable on an annual basis.

Based on this knowledge, **Indicator 45: Number of land miles of city, county, and state roads and bridges in need of repair and preservation**, is not included in this year's report.

A list of data sources and the policy rationale for each Indicator is included at the end of this chapter.

#### II. Definition of Terms

- **HOV** is a high occupancy vehicle. This usually refers to a car with a driver and at least one other passenger.
- **Mode** is the means of transportation, such as transit, walking, or bicycling.
- **Mode Split** describes the number or proportion of people using each transportation mode.
- **Non-Motorized** types of transportation include walking and bicycling.
- **SOV** is a single occupant vehicle.
- **Transit Ridership** refers to the number of passenger boardings on motorbus, trolleybus, streetcar, DART, or Sound Transit services. These numbers do not include Vanpool, or para-transit ridership.
- **VMT** is vehicle miles traveled. See Environmental Indicator #12 for more information.
- **Volume-to-Capacity Ratio (V/C)** is a level-of-service measure for roadways calculated by dividing traffic volume by the carrying capacity of the road. Typically, a V/C ratio is calculated for the morning and afternoon commute.



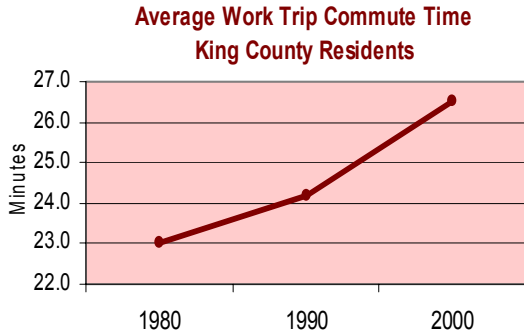
## TRANSPORTATION INDICATORS

**Outcome: Encourage linkages between residences, commercial centers and workplace locations**

### INDICATOR 41: Average Commute Lengths for Major Destinations in King County



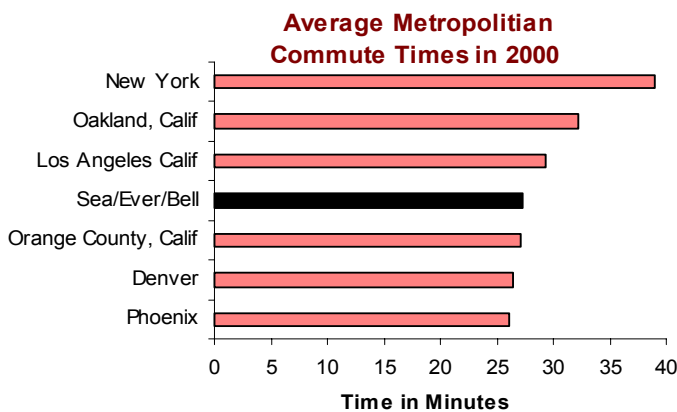
Fig. 41.1



#### About This Indicator

- Figure 41.1 shows that between 1990 and 2000 commute times increased from an average of 24.2 minutes to 26.5 minutes.
- Figure 41.2 shows the average commute time in the Seattle/Everett/ Bellevue area and other metropolitan areas. King County is currently ranked 15<sup>th</sup> for length of commute time.

Fig. 41.2



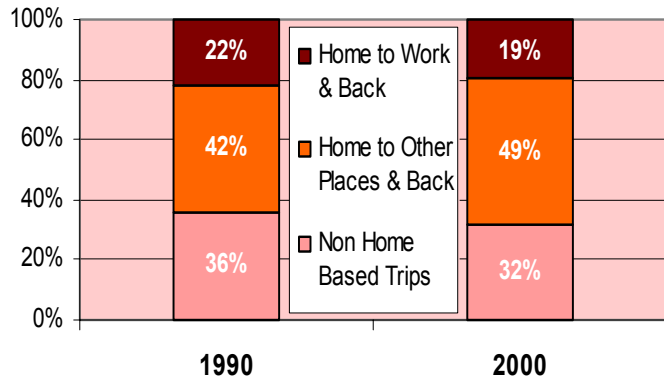
- Figure 41.3 shows the travel times and average travel speeds for the 5 slowest of 22 morning and afternoon monitored commute routes. The slow speeds during commute times suggest that these are the most congested areas in the county.

Fig. 41.3

Major Destination and Return Commute Trip	Average Travel Time at 8 AM (min)	Average Travel Time at 5 PM (min)	Average Speed for Total Trip (mph)
1 Tukwilla to Bellevue am Bellevue to Tukwilla pm I-405	23	27	33
2 Seattle to Bellevue am Bellevue to Seattle pm Over SR-520	17	20	34
3 Bellevue to Seattle am Seattle to Bellevue pm Over SR-520	15	19	37
4 Seattle to Bellevue am Bellevue to Seattle pm Over I-90	13	20	39
5 Auburn to Renton am Renton to Auburn pm SR-167	12	21	39

- Figure 41.3 also shows that 3 of the top five slowest commutes are between Bellevue and Seattle and travel times increased in the evening.
- Figure 41.4 demonstrates that the majority of travel in the Tri-county region during 1990 and 2000 was for non-work related trips. Work related trips from and returning to the home were the lowest percent of trips.
- This data suggest that work commutes are just one fact among several types of travel contributing to congestion on our roads. 80% of car trips are for non-work purposes. Commercial / truck travel also contributes to traffic volumes. (See Indicator 44).

#### Trip Type as Percent of All Trips (Tri-County Region)





# TRANSPORTATION INDICATORS

## Outcome: Increase the Availability of Modes Other than Single Occupancy Vehicles

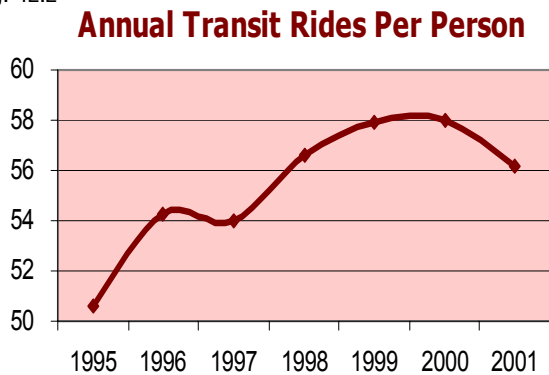


### INDICATOR 42: Metro Transit Ridership

Fig. 42.1

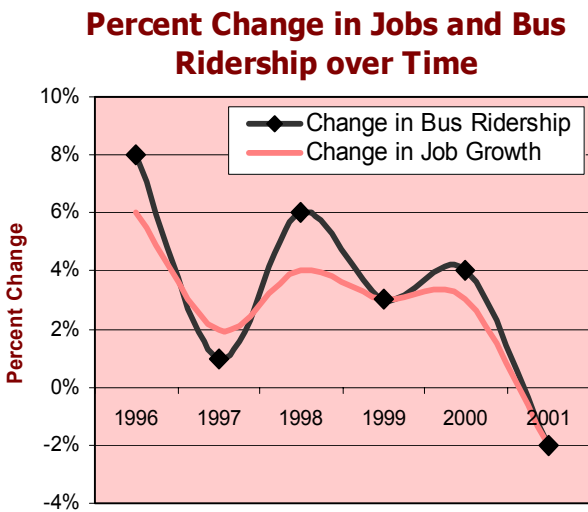
Annual Passenger Boardings on Metro Managed Transit and Sound Transit						
1995	1996	1997	1998	1999	2000	2001
81,657,696	88,334,963	88,926,696	94,256,548	97,127,919	100,814,820	98,827,969

Fig. 42.2



- Figure 42.3 shows that transit use increased at a rate relative to job growth since 1996. The decline in transit use in 2001 was the same as the rate of job loss in the county (2%). It appears that the decrease in ridership is closely correlated to the drop in employment, which resulted from an economic recession in 2001.
- Sound Transit Express buses and Sounder trains have provided 3.3 million passenger trips in two years of service. There was a 42% increase in ridership from 2000 to 2001.

Fig. 42.3



#### Park and Rides

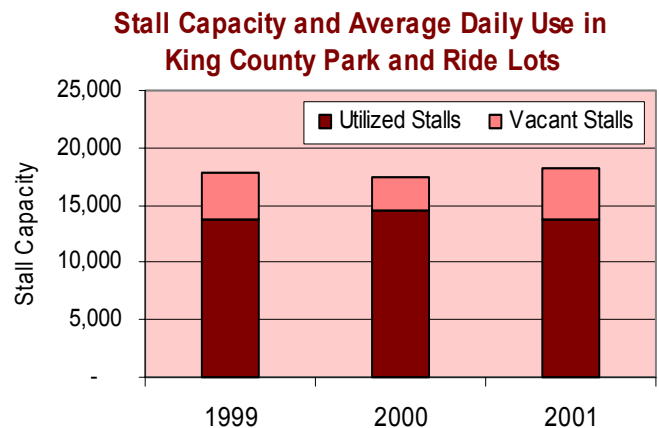
- In 2001 there were 18,283 parking spaces available in park and ride lots in King County. 75% of these spaces were used on a daily basis. This was a 5% decrease in use from 2000.

### About this Indicator

#### Transit Ridership

- Metro ridership decreased by 2% in 2001. Figure 42.2 shows that the average King County resident used transit 56 times. This was down from 58 in 2000.

Fig. 42.4





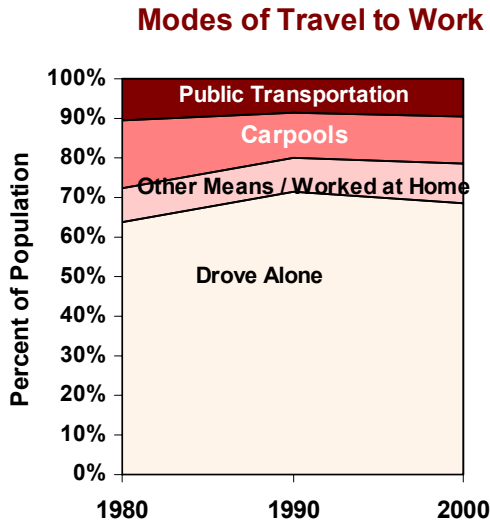
## TRANSPORTATION INDICATORS

### ***Outcome: Enhance Alternatives to Transportation Other Than Single Occupancy Vehicles***

**INDICATOR 43:** Percent of Residents who Walk, Use Transit, Bicycle, or Carpool as Alternatives to the Single Occupancy Vehicle.



Fig 43.1

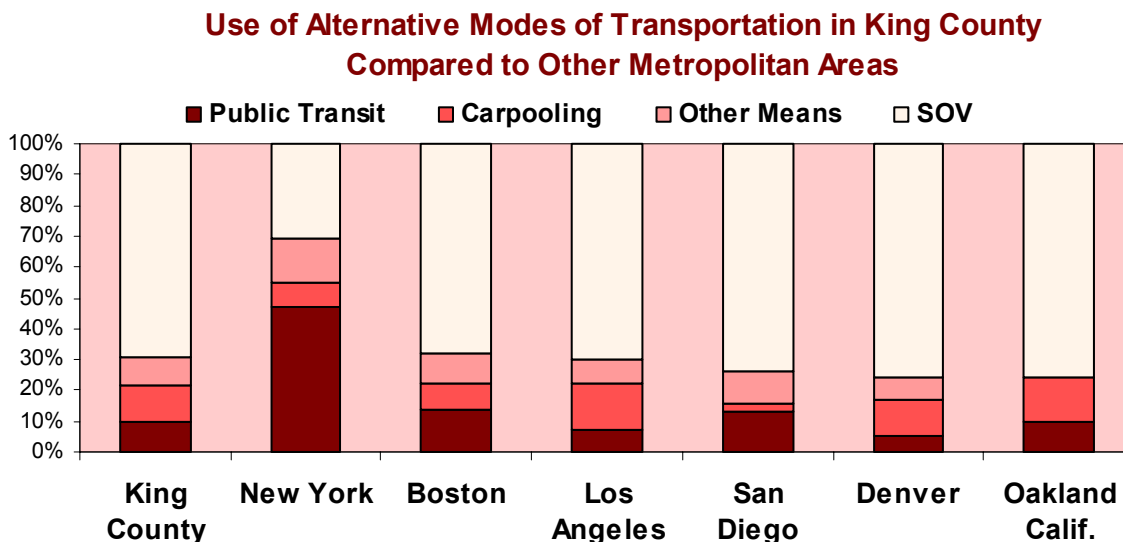


- Figure 43.1 shows that between 1980 and 1990 the rate of single occupancy vehicle (SOV) use increased by 7%. Since 1990 there has been a slight decline in the rate of SOV use and an increase in carpooling. Although there is a lower rate of SOV's in comparison to other modes, the actual number of SOV trips has increased.
- Figure 43.2 shows commuter mode split as a percent of population in King County compared to other metropolitan areas. The overall use rate of alternative transportation modes is similar to most other metropolitan areas except New York, where public transportation is much more commonly used.
- As described in Indicator 41 (see Fig. 41.4), work trips constitute only about 20% of all automobile trips. Non-work trips often involve family members accompanying the driver, thus reducing the proportion of SOV trips.

#### **About this Indicator**

- In King County 69% of commuters drove alone, 12% carpoled, 10% used public transportation, and 10% used other means. Of these other means, 4% walked to work, 4% worked at home, and 2% biked or used other forms of transportation.

Fig. 43.2



# TRANSPORTATION INDICATORS

## Outcome: Reduce Commercial Traffic Congestion

**INDICATOR 44:** Ability of goods and services to move efficiently and cost effectively through the region.



Fig. 44.1

**Increase in Use Rates by Commercial vs. Non-Commercial Vehicles from 1993-2001**

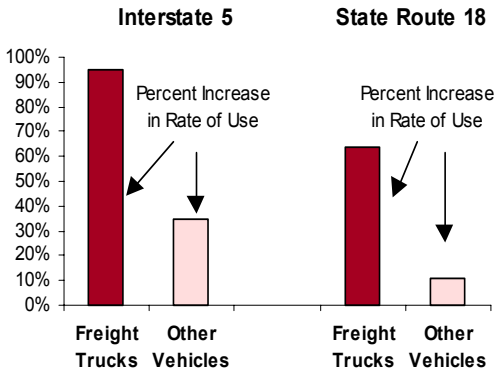
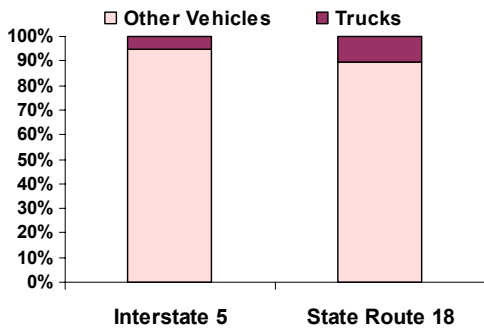


Fig. 44.2

**Trucks as a Percent of All Vehicles in 2001**



**Key to Volume / Capacity Ratios**

- .5 - .75 Travel speed still at or near free flow, but ability to maneuver within the traffic stream is noticeably restricted
- .75 - .9 Travel speeds begin to decline with increasing flows; minor incidents expected to cause queuing.
- .9 - 1.0 Operation at or near capacity and therefore volatile because there are virtually no useable gaps in the traffic stream; maneuverability is extremely limited.

Fig. 44.3

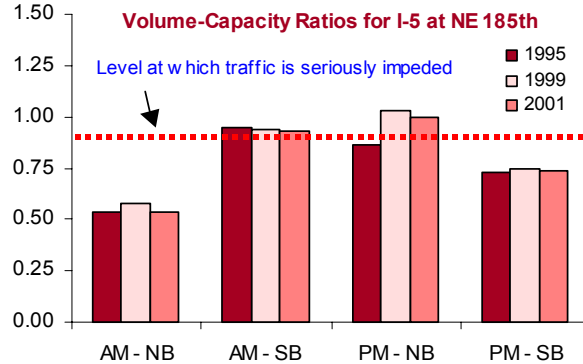
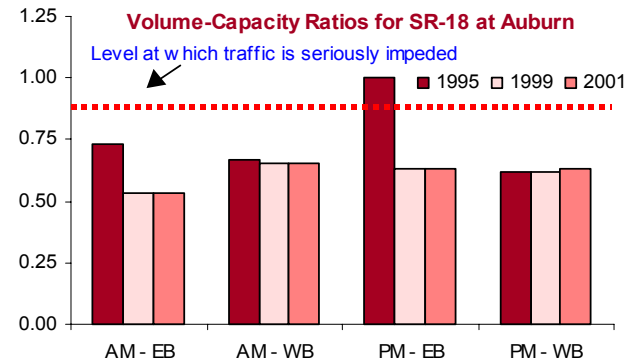


Fig 44.4



### About This Indicator

- Freight trucks have increased as a share of total vehicles on the road since 1993 (Fig. 44.1). On I-5, freight traffic has increased by 64% and cars by 11%. On SR-18, freight traffic has increased by 95% and cars have increased by 35%.
- However, Fig. 44.2 shows that car rather than truck traffic remains the major source of traffic. 95% of vehicles using I-5 at N. 185<sup>th</sup> are cars, and 89% of the vehicles on SR-18 are cars.
- With both more cars and more trucks on the road, commercial traffic is less able to move efficiently through the region.

- Figures 44.3 and 44.4 show the volume capacity ratio for these highways in 1995, 1999, and 2001. The key above describes traffic movement at higher V/C ratios. The V/C ratio for 1999 was modified from the 2000 report to correct for HOV lanes.
- In 2001 the volume capacity measures on SR-18 were at acceptable levels. On I-5 at N.E. 185<sup>th</sup> traffic exceeded capacity in the morning southbound and the evening northbound. N.E. 185<sup>th</sup> is the County boundary, so commuters coming to King County from Snohomish would be passing this point southbound in the morning.

## TRANSPORTATION INDICATORS



### Data Sources and Policy Rationale for Transportation Indicators

#### **Indicator 41: Average Commute Lengths**

**Data Source:** Decennial Census 2000, 1990, 1980. Puget Sound Transportation Panel Survey, the Puget Sound Regional Council, Washington State Department of Transportation.

**Policy Rationale:** The policy rationale based on Countywide Planning Policies: T-1 and T-4. This indicator measures accessibility.

#### **Indicator 42: Metro Transit Ridership**

**Data Source:** Metro Transit General Manager's Quarterly Report, Metro Transit Division. PSRC Puget Sound Trends April 2002. The Washington State Employment Security Department.

**Policy Rationale:** The policy rationale stems from Countywide Planning Policies: FW-18, T-1, T-5 and T-14. Transit demand management plays an important role in the development of key strategies for serving future growth. Transit use affects mode split, air quality, vehicle miles traveled, and traffic congestion. It is a significant part of a multi-modal system.

#### **Indicator 43: Percent of Residents Who Use Alternatives to Single-Occupancy Vehicles**

**Data Source:** Decennial Census of Population: Table DP-3. Profile of Selected Economic Characteristics: 2000, 1990 and 1980. Seattle Times June 8<sup>TH</sup> 2002.

**Policy Rationale:** The policy rationale stems from Countywide Planning Policies: FW-18, FW-19, T-1, T-7, T-8, and T-12. The CPPs encourage the development of an effective multi-modal transportation system that supports the use of modes other than single occupancy vehicles.

#### **Indicator 44: Ability of Goods and Services to Move Efficiently**

**Data Source:** Washington State Department of Transportation.

**Policy Rationale:** The policy rationale stems from the Countywide Planning Policies FW-20 and T-1. Freight and good mobility are critical to the economy and health of the region. Consideration should be given to enhancing mobility for freight and goods movement.