

Mobility monitor

Transportation Data

Monitoring today,
for tomorrow.

This issue

Vehicles
traveling
outside the
traditional
peak hour

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KEY FINDING

More vehicles entered the downtown outside the morning peak hour in 2006 than in 1996, while fewer entered during the morning peak hour.

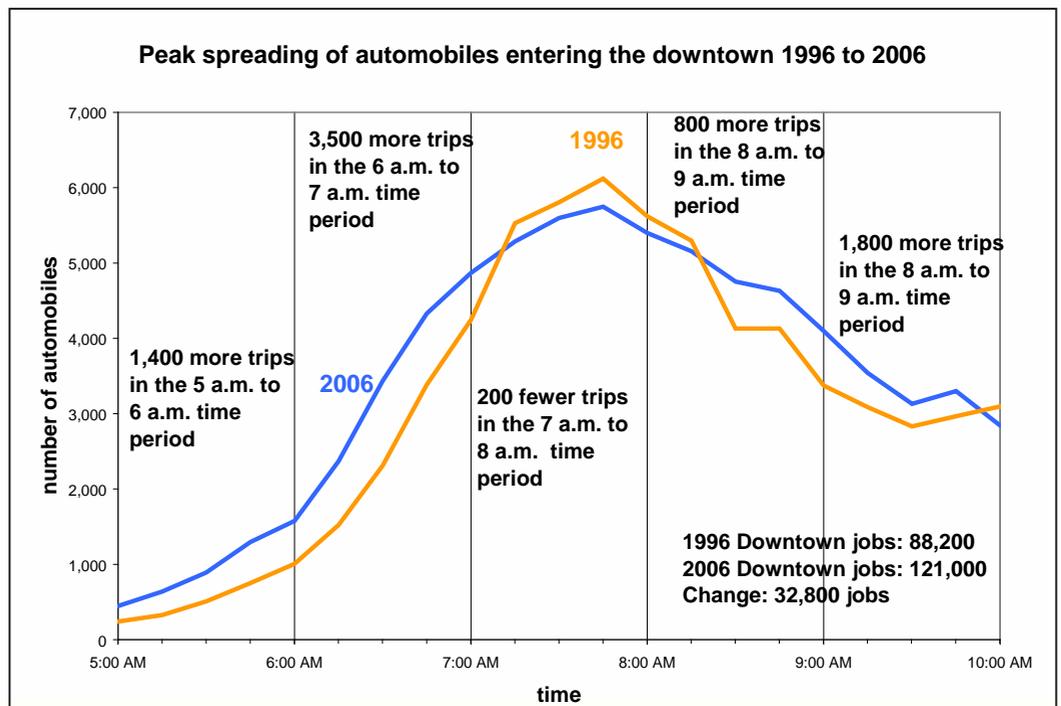
In 1996 traffic in the morning peak hour accounted for 37 per cent of the total traffic during the 5 a.m. to 10 a.m. time period. By 2006 the morning peak hour accounted for only 31 per cent.

The shift was mostly to the 5 a.m. to 7 a.m. time period, with a less dramatic growth in the 8 a.m. to 10 a.m. time period.

The decrease in the morning peak hour coincides with growth in traffic outside the peak hour. This suggests that capacity constraints into the downtown are a factor.

Boundary of the downtown

In this Mobility Monitor the downtown is defined as the area bounded by the Bow River on the north, the Elbow River on the east, the CPR tracks on the south and 14th Street on the west.



KEY FINDING

Although traffic crossing Deerfoot Trail eastbound and westbound has increased for all time periods, traffic in the morning peak hour is not growing as fast.

The spreading of peak hour traffic crossing Deerfoot Trail eastbound and westbound between 1996 and 2006 is not as clearly visible in the chart below as it was for traffic entering the downtown.

In 1996 traffic in the 7 a.m. to 8 a.m. time period accounted for 32 per cent of the total traffic in the 5 a.m. to 10 a.m. time period. By 2006 this time period accounted for only 28 per cent.

The largest increase was in the 6 a.m. to 7 a.m. time period. The time periods after 8 a.m. did not grow as much. The 5 a.m. to 6 a.m. time period grew the least.

The spreading of the peak on Deerfoot Trail occurred, even though volumes in the peak hour continued to grow. This suggests that peak spreading of traffic crossing Deerfoot Trail is not due to capacity constraints on crossing Deerfoot Trail.

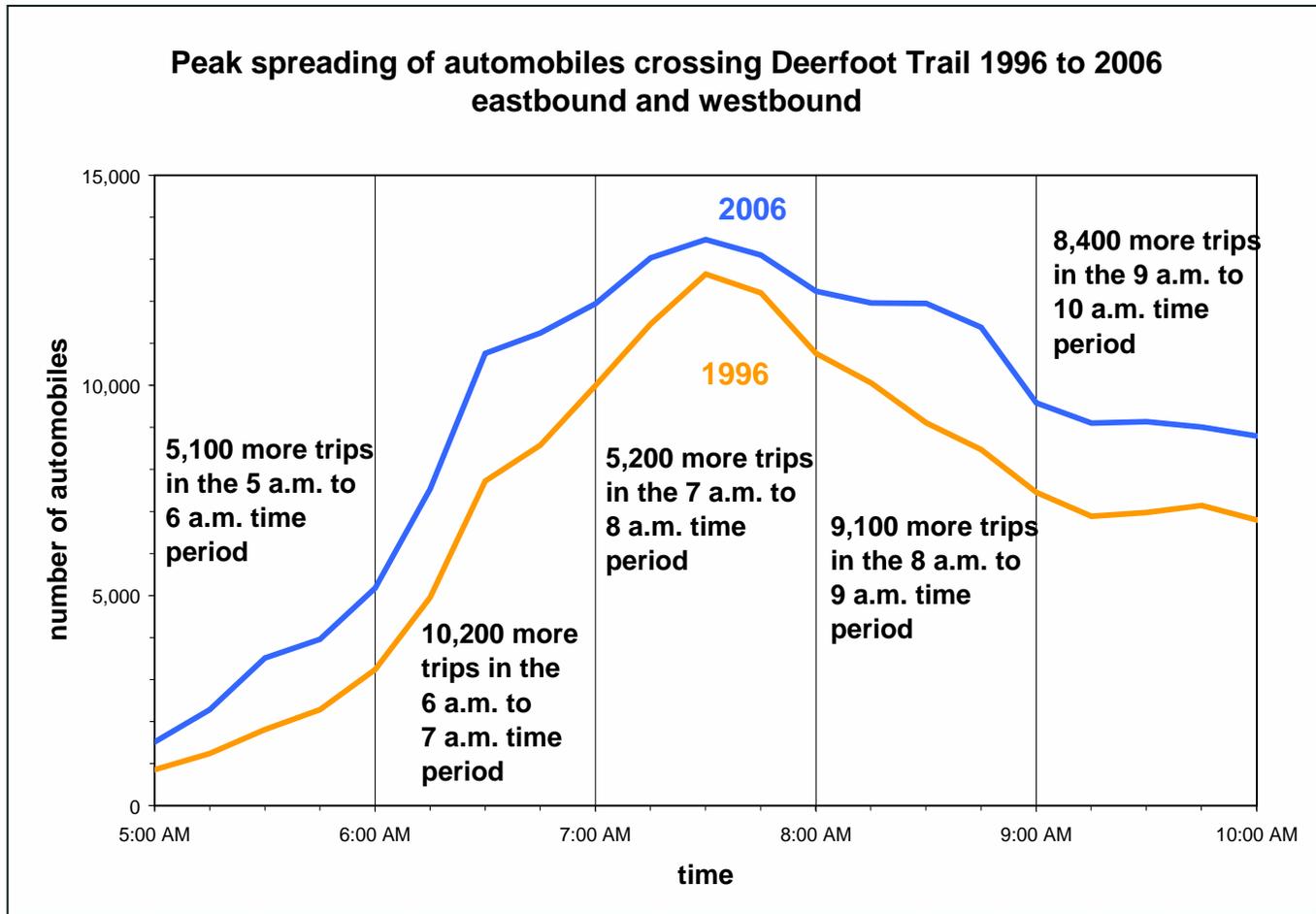
Congestion elsewhere in the network, increased acceptance of flexible work hours by employers and changes in the type of employment could also explain the growth in traffic outside the peak.

The Deerfoot Trail screenline

The information on traffic crossing Deerfoot Trail in this Mobility Monitor is based on traffic crossing the Deerfoot Trail screenline. The Deerfoot Trail screenline follows along the west side of Deerfoot Trail, from Country Hills Boulevard to Bow Bottom Trail. South of Bow Bottom Trail the boundary follows the Bow River.

What is a screenline?

A screenline is a natural or artificial barrier that divides the city into two parts. Counts of traffic crossing this barrier are used to track changes in traffic demand.



KEY FINDING

Northbound traffic crossing Glenmore Trail shows larger increases in traffic outside the morning peak hour than within the morning peak hour.

The spreading of northbound peak period traffic across Glenmore Trail in 1996 and 2006 is clearly visible in the chart below.

In 1996 traffic in the 7 a.m. to 8 a.m. time period accounted for 36 per cent of the total traffic in the 5 a.m. to 10 a.m. time period. By 2006 this period accounted for only 30 per cent.

The largest increase was in the 6 a.m. to 7 a.m. time period. The time periods after 8 a.m. did not grow as much. The 5 a.m. to 6 a.m. time period grew the least.

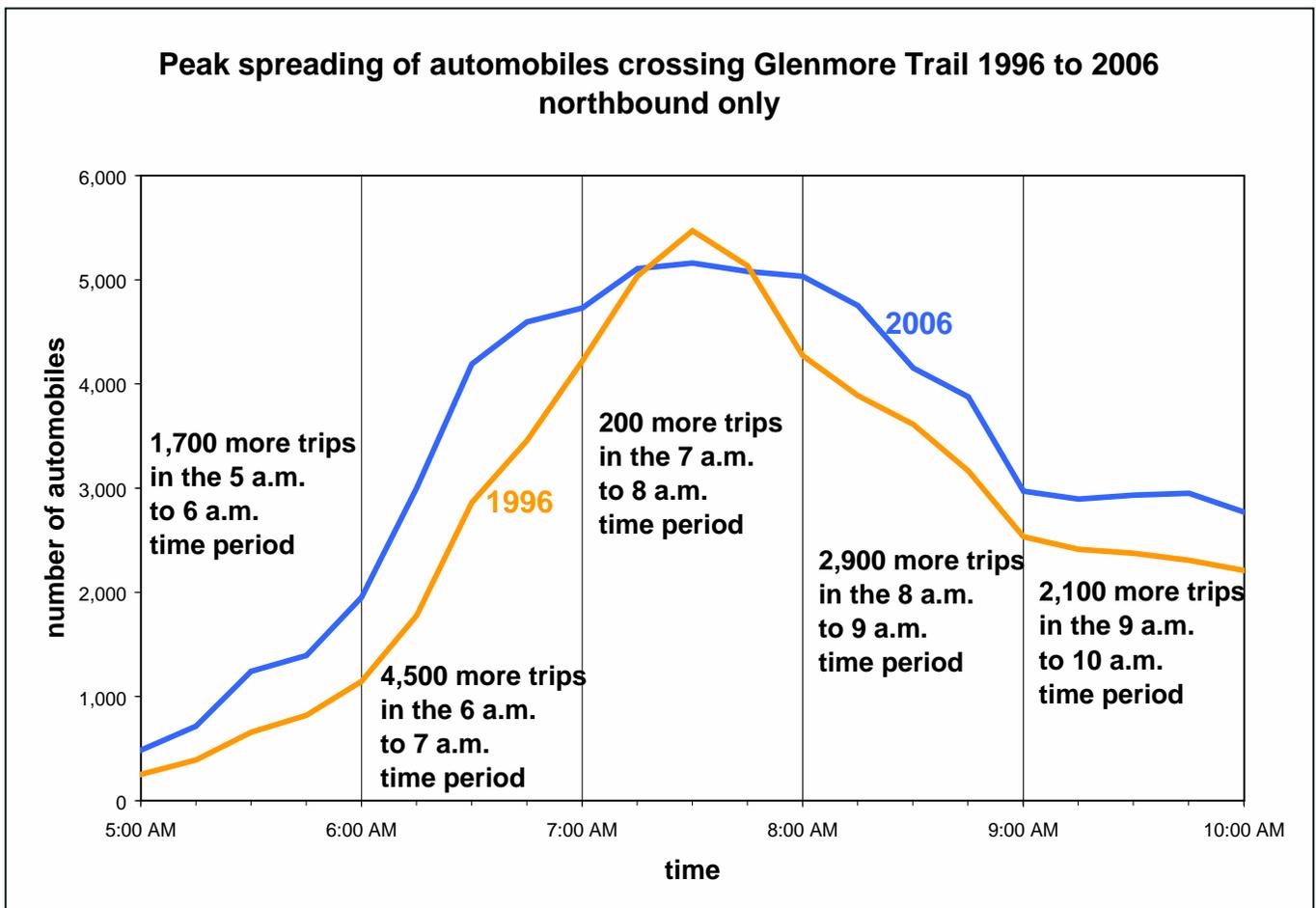
The small change in traffic volumes during the morning peak hour and the higher increases outside the morning peak hour suggest that capacity constraints crossing Glenmore Trail are a factor in peak spreading.

The Glenmore Trail screenline

The information on traffic crossing Glenmore Trail in this Mobility Monitor is based on traffic crossing the Glenmore Trail screenline. The Glenmore Trail screenline follows along the south side of Glenmore reservoir, and then along the south side of Glenmore Trail, from 14 Street SW to 84 Street SE. Some minor roads crossing Glenmore Trail were not included.

What is meant by peak hour?

The peak hour is the one hour period during which the most traffic passes. Some people call this "rush hour." Typically the morning peak hour in Calgary is 7:15 a.m. to 8:15 a.m. The peak period is the two hour period during which the most traffic passes. Typically the morning peak period in Calgary is 7 a.m. to 9 a.m. Peak spreading is when traffic shifts to before and after the peak hour.



Implications

The data presented in this Mobility Monitor suggests that the morning peak traffic period is getting longer throughout the city. Encouraging people to shift the time they travel to less congested time periods is an objective of the Calgary Transportation Plan (CTP).

For the downtown and Glenmore Trail, capacity constraints of the road system appear to be primary factor in peak spreading.

Traffic crossing Deerfoot Trail shows both substantial growth in peak traffic and a shift away from the peak. This suggests that capacity constraints on the roads crossing Deerfoot Trail are not the only important factor in shifting traffic away from the peak.

Congestion elsewhere in the network could contribute to a shift away from the peak. Another possible factor is the increased acceptance of flexible work hours by employers. Flexible work hours allow employees to adjust the time they travel. Changes in the type of jobs can also cause people to shift the time they travel.

The trend of people becoming more flexible about when they travel is desirable, since it contributes to a decrease in peak hour traffic. The road network is designed to accommodate peak hour traffic, so a lower peak reduces the need for more road construction.



Recommendations

Consider tracking changes in traffic volume peaking on an ongoing basis.

Consider undertaking a similar study of changes in the peaking of transit passengers, pedestrians and cyclists.

Sources of Information

The information in this Mobility Monitor was from traffic counts collected by the Transportation Data division using automated traffic counters. For some locations counts were not available for the years considered. In these cases, counts from other years were used. This does affect the final results, but since the number of locations is small the effect is not great.

How accurate and reliable are these data?

How concerned should you be by the potential for error in the data presented in The Mobility Monitor? The counts were usually for a single day and traffic on a given road can vary by as much as 10 per cent from one day to the next. However, by adding many roads together, as was done in this Mobility Monitor, does reduce the variance of the total volume.

Even so, a change from one year to the next may be due to some random event, such as the weather, accidents or illness. This is why it is wise to look at trends, since changes that are consistent over a long period of time are more likely to be real, and not just the result of random events.

It must be kept in mind that no one source of information can claim to be infallible. Consideration and appropriate weighting of other sources of information is to be encouraged before making decisions.

The Mobility Monitor

The Mobility Monitor is part of the Ongoing Monitoring and Implementation Program (OMIP) for the Calgary Transportation Plan (CTP). The purpose of the Mobility Monitor is to report on strategic trends and events that affect the implementation of the CTP, and to recommend future actions. The Mobility Monitor is produced by the Transportation Data division of Transportation Planning.