# Travel time Indicator Report – March 2006

**Auckland Results**

1. The table and graphs on pages 6 -7 summarise the results of the March 2006 surveys, comparing them with the findings of previous surveys, which commenced in May 2002.

2. The routes surveyed in March 2002 were different to subsequent surveys. Consequently, results for the March 2002 surveys are not directly comparable. The March 2003 AM peak data was affected by adverse weather.

3. The lowest average actual travel speeds for Auckland continue to be recorded in the AM peak. The AM peak travel speed for March 2006 was 36 km/hr. This continues to be one of the lowest average actual travel speeds of any city or time period surveyed.

4. The PM peak average actual travel speed for March 2006 was 39 km/hr. PM peak average actual travel speeds have remained relatively constant at around 40km/hr since March 2003.

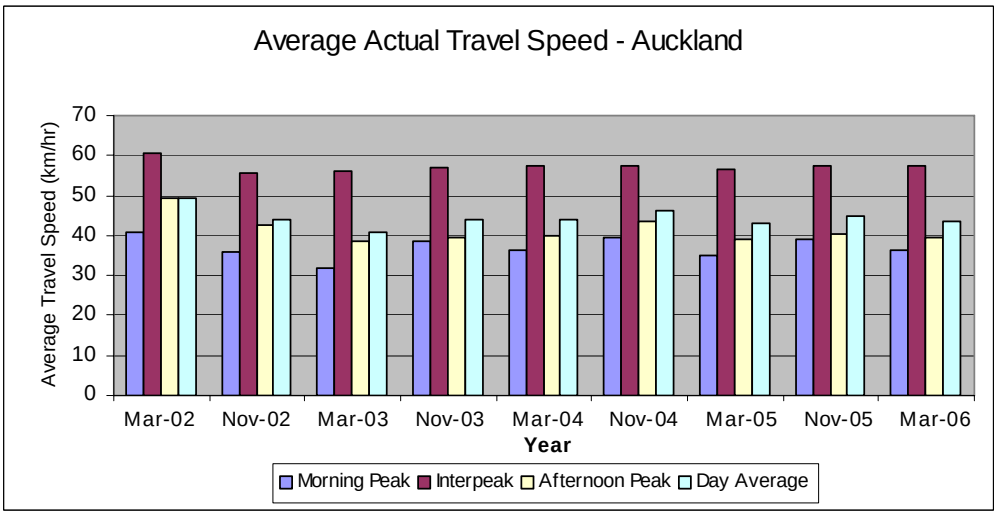
5. The highest level of congestion indicator continues to occur in the AM peak, with the March 2006 congestion indicator of 0.72 minutes (43.2 seconds) delay/km. Although this represents a high degree of congestion, it is 0.06 minutes (3.6 seconds) delay/km less delay than the results for March 2005.

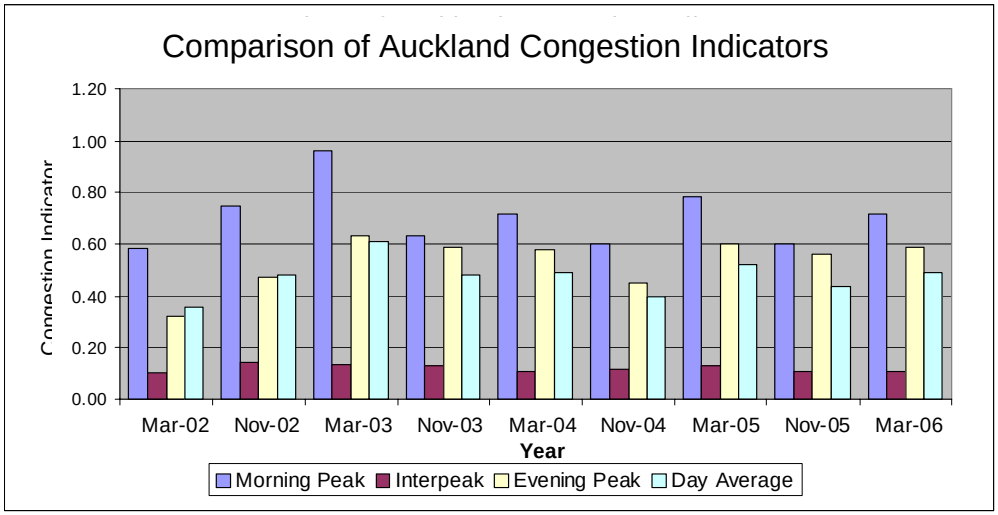
6. The congestion indicator for the inter peak period continues on a constant trend remaining relatively stable at 0.11 minutes (6.6 seconds) delay/km in March 2006. As in previous years, there is a significant drop in the congestion indicator during the inter peak period.

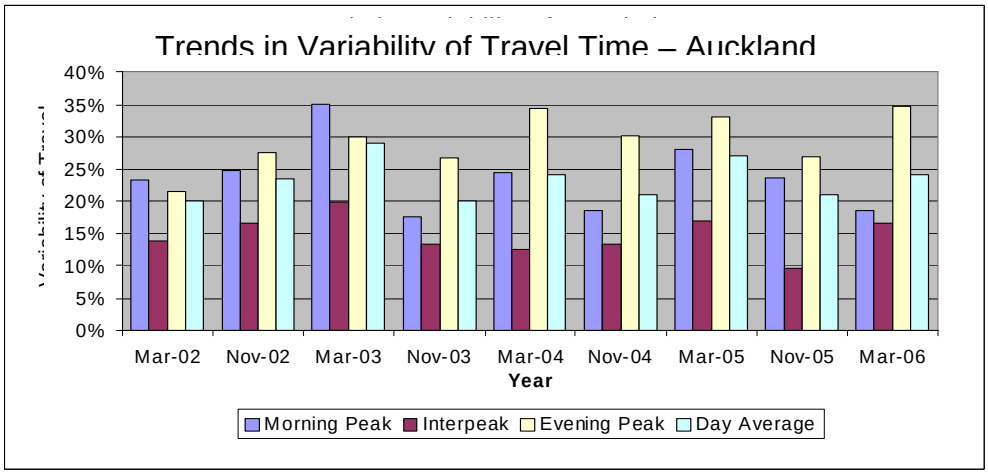
7. Auckland continues to have the highest level of travel time variability with a high degree of uncertainty of travel times experienced by road users. PM peak variability for March 2006, at 35%, is the highest variability of any city or peak period. This means that a journey can take more than a third longer than anticipated.

8. Unlike the PM peak variability of travel time the AM travel time variability has improved and was calculated as 19%. This is the lowest March figure yet recorded for the AM peak period for Auckland.

## Auckland Results



## Table 1: Summary of Auckland Travel Time Performance Indicators

| Indicator | Period | Comparison of Auckland Results | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nov 02 | Mar 03 | Nov 03 | Mar 04 | Nov 04 | Mar 05 | Nov 05 | Mar 06 |
| Average Actual Travel Speed (km/hr) | AM Peak | 36 | 32 | 38 | 36 | 39 | 35 | 39 | 36 |
| | Interpeak | 56 | 56 | 57 | 57 | 57 | 56 | 58 | 57 |
| | PM Peak | 43 | 38 | 40 | 40 | 44 | 39 | 40 | 39 |
| | All Day | 44 | 41 | 44 | 44 | 46 | 43 | 45 | 44 |
| Nominal Travel Speed (km/hr) | | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| Congestion Indicator (CGI) (delay/km) | AM Peak | 0.75 | 0.96 | 0.63 | 0.72 | 0.60 | 0.78 | 0.60 | 0.72 |
| | Interpeak | 0.15 | 0.13 | 0.13 | 0.11 | 0.12 | 0.13 | 0.11 | 0.11 |
| | PM Peak | 0.47 | 0.63 | 0.59 | 0.58 | 0.45 | 0.60 | 0.56 | 0.59 |
| | All Day | 0.48 | 0.61 | 0.48 | 0.49 | 0.40 | 0.52 | 0.44 | 0.49 |
| Variability of Travel Time | AM Peak | 25% | 35% | 18% | 25% | 19% | 28% | 24% | 19% |
| | Interpeak | 16% | 20% | 13% | 13% | 13% | 17% | 10% | 17% |
| | PM Peak | 28% | 30% | 27% | 34% | 30% | 33% | 27% | 35% |
| | All Day | 24% | 29% | 20% | 24% | 21% | 27% | 21% | 24% |

**Wellington Results**

9. The table and graphs on page 9-10 summarise the findings of the travel time surveys from March 2006, comparing them with the previous survey results.

10. The routes were altered between the 2002 and 2003 surveys to achieve a more representative selection of roads. The timing of the surveys was also fine tuned to catch the congestion 'pinch points' in Wellington.

11. Average actual travel speeds have increased across all time periods for March 2006 compared to previous March surveys.

12. The lowest average actual travel speeds continue to occur in the AM peak period, with the results of the March 2006 survey recording a low of 50 km/hr. This is a 5km/hr increase from March 2005, and 4km/hr higher than March 2004.

13. Congestion indicators have decreased for all time periods for March 2006 compared to previous March surveys.

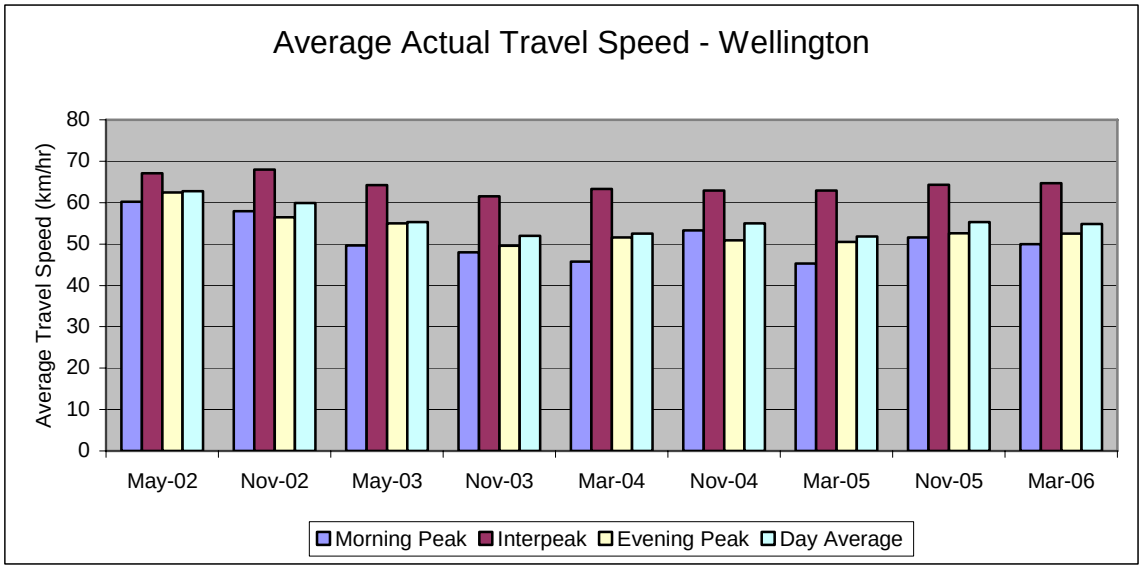
14. The highest levels of congestion continue to occur in the AM peak period. However, the March 2006 congestion indicator of 0.44 minutes (26.4 seconds) delay/km is significantly lower than the figure of 0.57 minutes (34.2 seconds) delay/km in March 2005 and 0.54 minutes (32.4 seconds) delay/km in March 2004.

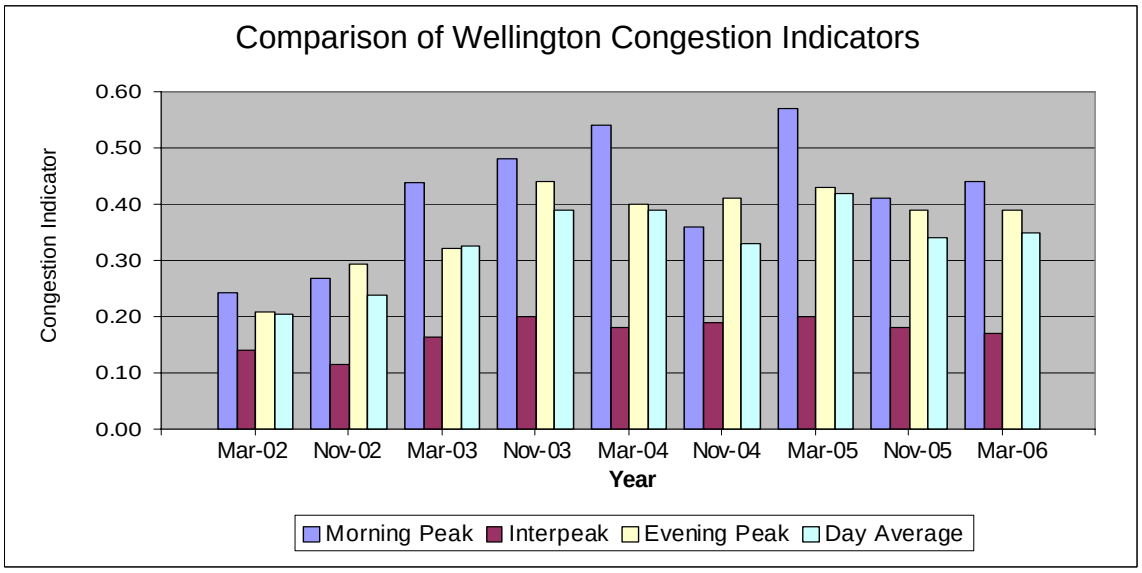
15. Congestion during the PM peak period has remained relatively constant from November 2003 to March 2006. The March 2006 congestion indicator of 0.39 minutes (23.4.seconds) delay/km is 0.04 (2.4 seconds) lower than March 2005, and 0.01 (0.6 second) lower than March 2004.

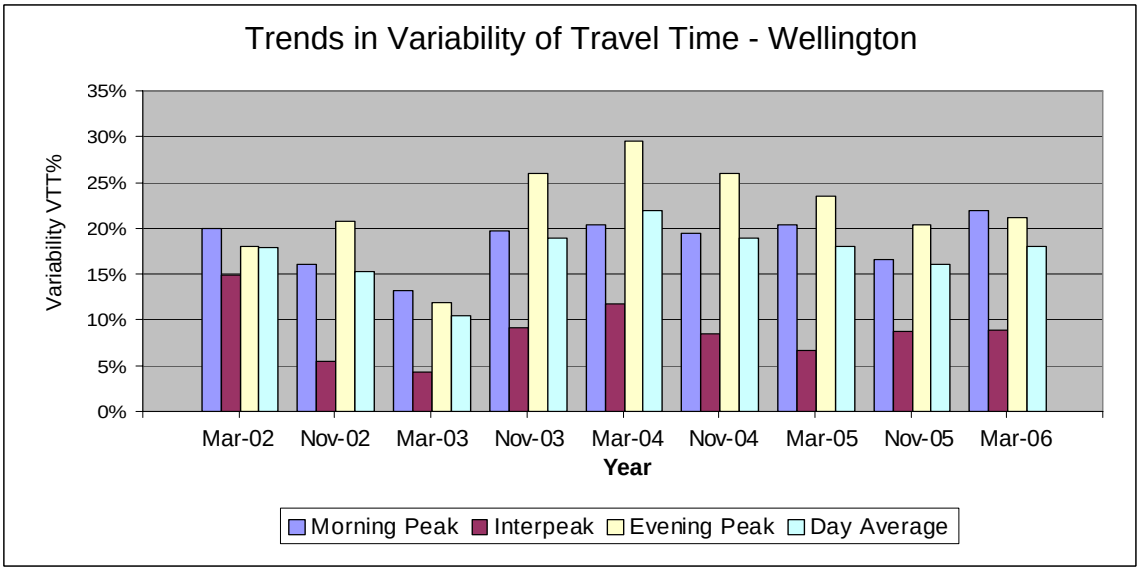
16. Since November 2003 travel time variability has remained relatively constant, however AM peak and inter peak variability have increased slightly from previous years.

17. The highest variability continues to be in the PM period, with a 21% variability in travel time, however, variability for the PM peak period has reduced since the peak of 30% in March 2004.

## Wellington Results



## Table 2: Summary of Wellington Travel Time Performance Indicators

| Indicator | Period | Comparison of Wellington Results | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **May 2002** | **Nov 2002** | **May 2003** | **Nov 2003** | **Mar 2004** | **Nov 2005** | **Mar 2005** | **Nov 2005** | **Mar 2006** |
| Average Actual Travel Speed (km/hr) | AM Peak | 60 | 58 | 50 | 48 | 46 | 53 | 45 | 52 | 50 |
| | Interpeak | 67 | 68 | 64 | 62 | 63 | 63 | 63 | 64 | 65 |
| | PM Peak | 62 | 56 | 55 | 50 | 52 | 51 | 51 | 53 | 53 |
| | All Day | 63 | 60 | 55 | 52 | 53 | 55 | 52 | 55 | 55 |
| Nominal Travel Speed | | 80 | 78 | 79 | 79 | 79 | 79 | 79 | 79 | 79 |
| Congestion Indicator (CGI) (delay / km) | AM Peak | 0.24 | 0.27 | 0.44 | 0.48 | 0.54 | 0.36 | 0.57 | 0.41 | 0.44 |
| | Interpeak | 0.14 | 0.11 | 0.16 | 0.2 | 0.18 | 0.19 | 0.2 | 0.18 | 0.17 |
| | PM Peak | 0.21 | 0.29 | 0.32 | 0.44 | 0.4 | 0.41 | 0.43 | 0.39 | 0.39 |
| | All Day | 0.2 | 0.24 | 0.33 | 0.39 | 0.39 | 0.33 | 0.42 | 0.34 | 0.35 |
| Variability of Travel Time | AM Peak | 20% | 16% | 13% | 20% | 20% | 19% | 20% | 17% | 22% |
| | Interpeak | 15% | 5% | 4% | 9% | 12% | 9% | 7% | 9% | 9% |
| | PM Peak | 18% | 21% | 12% | 26% | 30% | 26% | 24% | 20% | 21% |
| | All Day | 18% | 15% | 10% | 19% | 22% | 19% | 18% | 16% | 18% |

**Tauranga Results**

18. The table and graphs on page 12-13 summarise the findings of the travel time surveys from March 2006, comparing them with the previous survey results, which commenced in April 2003.

19. A key feature of Tauranga is that congestion is an all day occurrence, and is not confined to peak periods. The difference between peak and off-peak travel time and congestion indicators for Tauranga is less than for any other city surveyed.

20. Results for the March 2006 survey suggest that the downward trend identified in previous years has checked, with average actual travel speeds for all time periods remaining the same or showing an increase in travel speeds from the March 2005 results.

21. The March 2006 AM peak average actual travel speed for Tauranga was 53km/hr. This is the highest result since 2003.

22. The weekday inter peak average actual travel speeds have also increased to 57km/hr, up 3km/hr from March 2005, the highest March result since 2004.

23. PM peak average actual travel speeds have remained constant at 54km/hr.

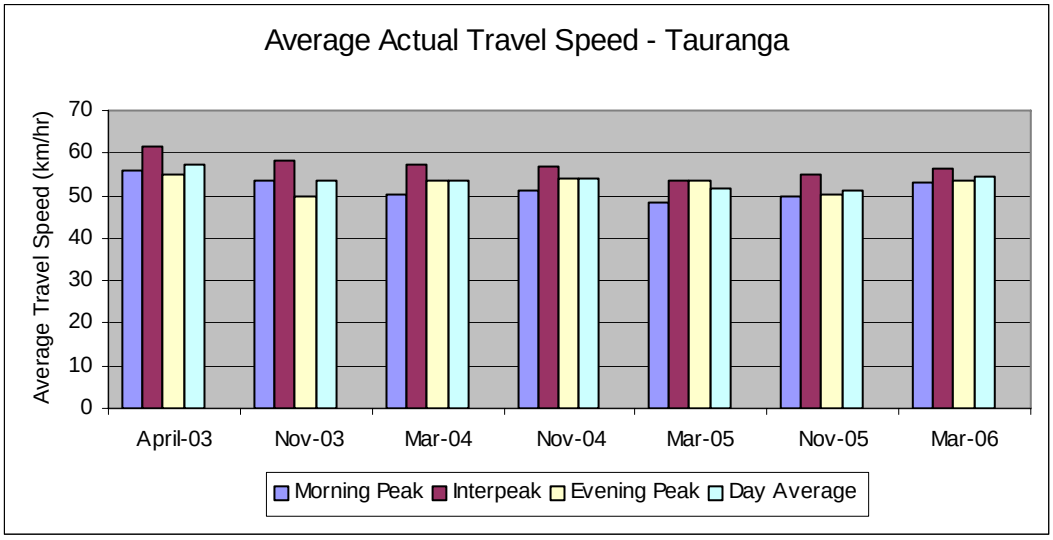
24. The AM peak congestion indicator has dropped to 0.36 minutes (21.6 seconds) delay/km, compared to a March 2005 result of 0.47 minutes (28.2 seconds) delay/km. This is the lowest AM peak congestion recorded since 2003.

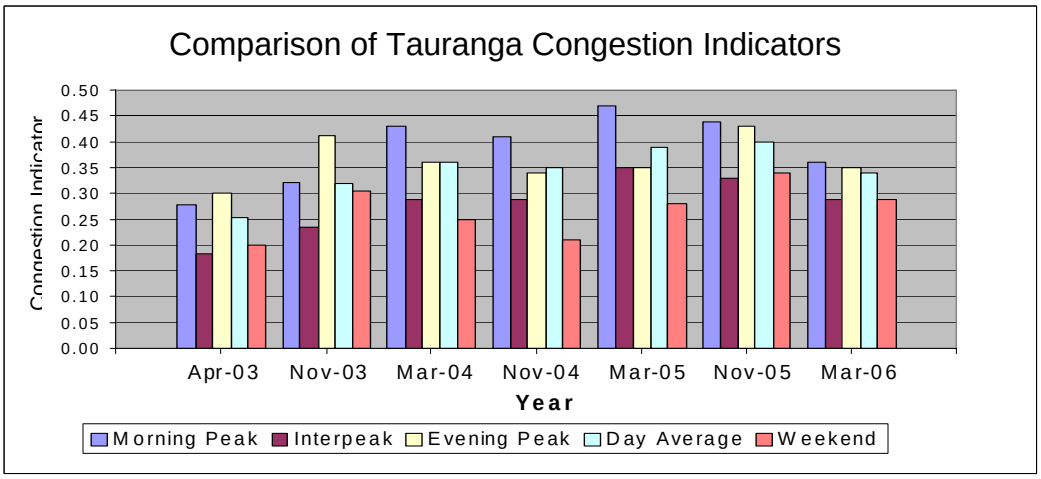
25. A notable feature regarding congestion in Tauranga is that the difference between AM and PM peak congestion has largely disappeared. AM peak congestion has dropped 0.36 minutes (21.6 seconds) delay/km, while PM peak has remained constant at 0.35 minutes (21 seconds) delay/km.

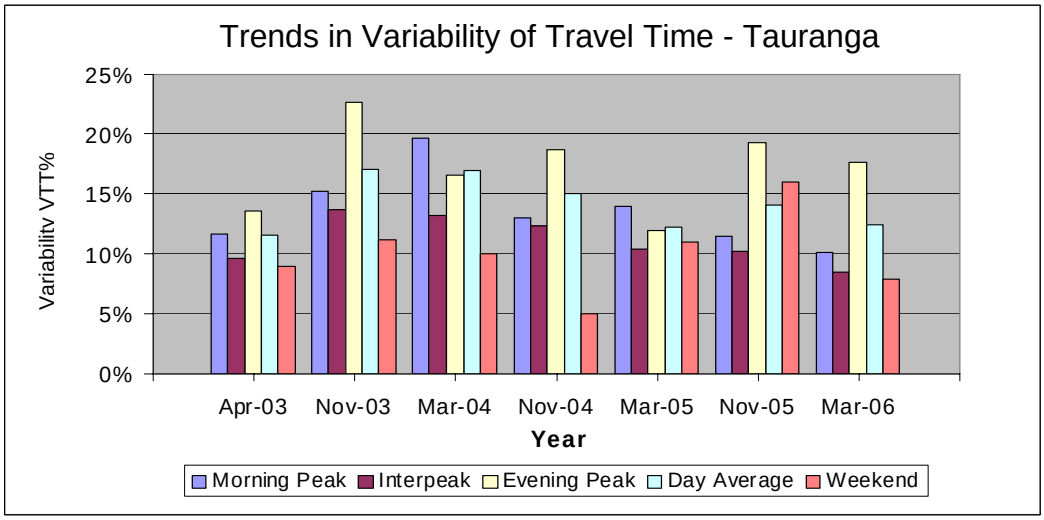
26. Weekend congestion in Tauranga remains comparable to weekday inter peak congestion, at 0.29 minutes (17.4 seconds) delay/km for inter peak on weekdays, and 0.25 minutes (15 seconds) delay/km for weekend periods.

27. Travel time variability during March 2006 has decreased for AM, inter peak, and weekend peak periods, but has increased for the PM peak period. The greatest level of variability remains in the PM peak period, which has a variability of 18%.

## Tauranga results



## Table 3: Summary of Tauranga Travel Time Performance Indicators

| Indicator | Period | Comparison of Results | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Apr 03 | Nov 03 | Mar 04 | Nov 04 | Mar 05 | Nov 05 | Mar 06 |
| Average Actual Travel Speed (km/hr) | Weekday AM Peak | 56 | 54 | 50 | 51 | 49 | 50 | 53 |
| | Weekday Interpeak | 61 | 58 | 57 | 57 | 54 | 55 | 57 |
| | Weekday PM Peak | 55 | 50 | 54 | 54 | 54 | 50 | 54 |
| | Weekday All Day | 57 | 54 | 53 | 54 | 52 | 51 | 54 |
| | Weekend | 60 | 55 | 59 | 61 | 57 | 54 | 59 |
| Nominal Travel Speed (km/hr) | | 76 | 76 | 78 | 78 | 78 | 78 | 78 |
| Congestion Indicator, CGI (Delay/ km) | Weekday AM Peak | 0.28 | 0.32 | 0.43 | 0.41 | 0.47 | 0.44 | 0.36 |
| | Weekday Interpeak | 0.18 | 0.23 | 0.29 | 0.29 | 0.35 | 0.33 | 0.29 |
| | Weekday PM Peak | 0.30 | 0.41 | 0.36 | 0.34 | 0.35 | 0.43 | 0.35 |
| | Weekday All Day | 0.25 | 0.32 | 0.36 | 0.35 | 0.39 | 0.40 | 0.34 |
| | Weekend | 0.20 | 0.31 | 0.25 | 0.21 | 0.28 | 0.34 | 0.25 |
| Variability of Travel Time | Weekday AM Peak | 12% | 15% | 20% | 13% | 14% | 11% | 10% |
| | Weekday Interpeak | 10% | 14% | 13% | 12% | 10% | 10% | 8% |
| | Weekday PM Peak | 14% | 23% | 17% | 19% | 12% | 19% | 18% |
| | Weekday All Day | 12% | 17% | 17% | 15% | 12% | 14% | 12% |
| | Weekend | 9% | 11% | 10% | 5% | 11% | 16% | 8% |

**Christchurch Results**

28. The table and graphs on page 16-17 summarise the findings of the travel time surveys from March 2006, presenting them with the previous annual survey results, which commenced in March 2004. Christchurch travel time surveys are undertaken only once per year.

29. Care must be taken when comparing Christchurch survey data between years or between cities. There have only been three surveys undertaken and the routes and starting times have been altered for each of the three surveys. Both Transit New Zealand and Christchurch City Council agreed these alterations in an effort to obtain robust and representative survey data.

30. Careful interpretation of the Christchurch travel time performance indicators collected in March 2006 is required. The results suggest that Christchurch has significant congestion, however, the actual surveyed network contains a high proportion of urban roads and a lower proportion of rural state highways and motorways compared to other monitored cities.

31. Average actual travel speeds have decreased across all time periods for March 2006 compared to previous surveys.

32. The lowest average actual travel speeds continue to occur in the AM peak period, with the results of the March 2006 survey recording a low of 34km/h. This is a 2km decrease from March 2005 and 5km/h lower than March 2004.

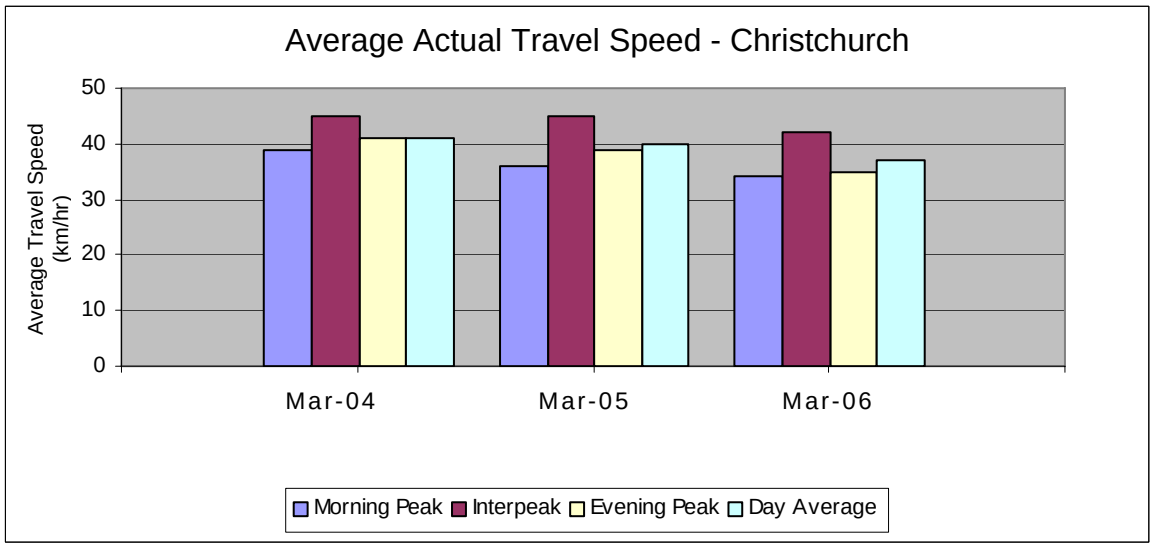
33. Congestion indicators have increased for all time periods for March 2006 compared to previous March surveys.

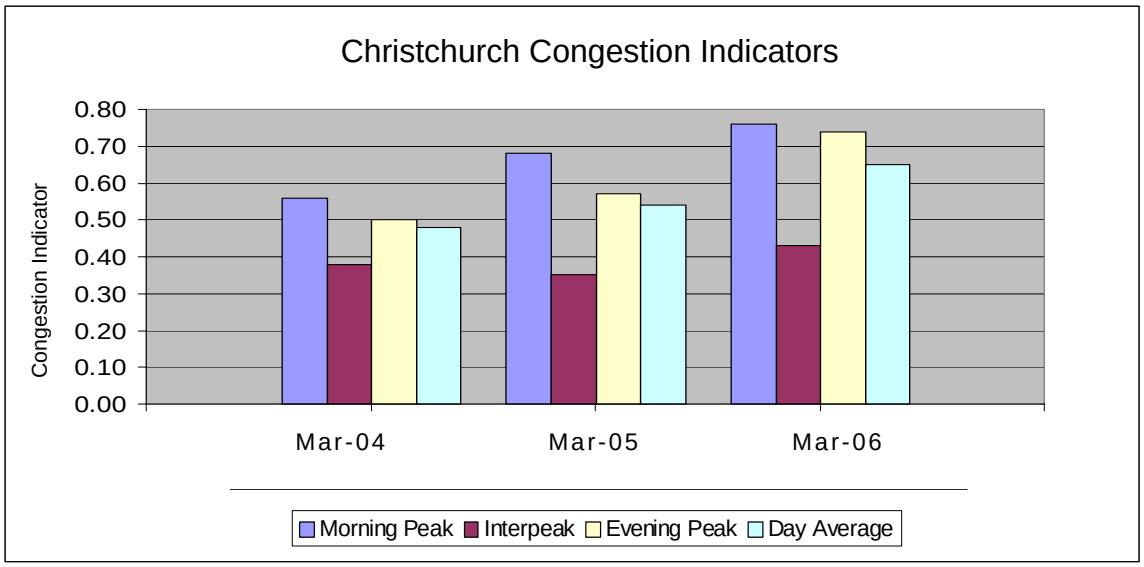
34. The highest levels of congestion continue to occur in the AM peak period. The March 2006 congestion indicator of 0.76 minutes (45.6 seconds) delay/km is above the figure of 0.68 minutes (40.8 seconds) delay/km in March 2005 and 0.56 minutes (33.6 seconds) delay/km in March 2004.

35. Congestion during the PM peak period has followed a similar trend from March 2005 to March 2006. The March congestion indicator of 0.74 minutes (44.4 seconds) delay/km is above the 0.57 (34.2 seconds) figure of March 2005 and the 0.50 (30 seconds) figure of March 2004.

36. Since 2004 travel time variability has remained relatively constant.

## Christchurch Results



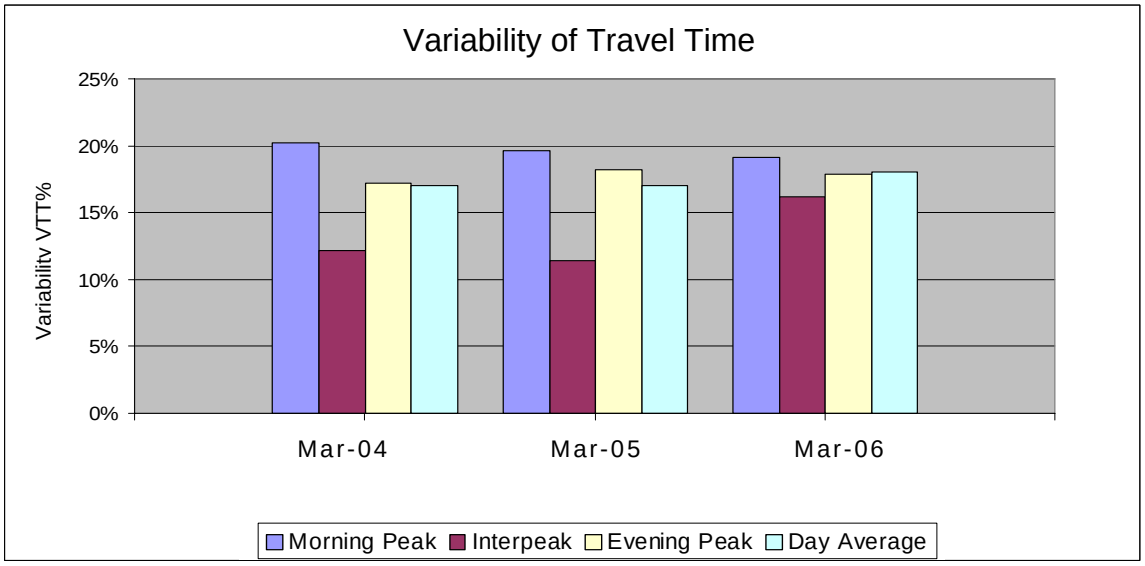
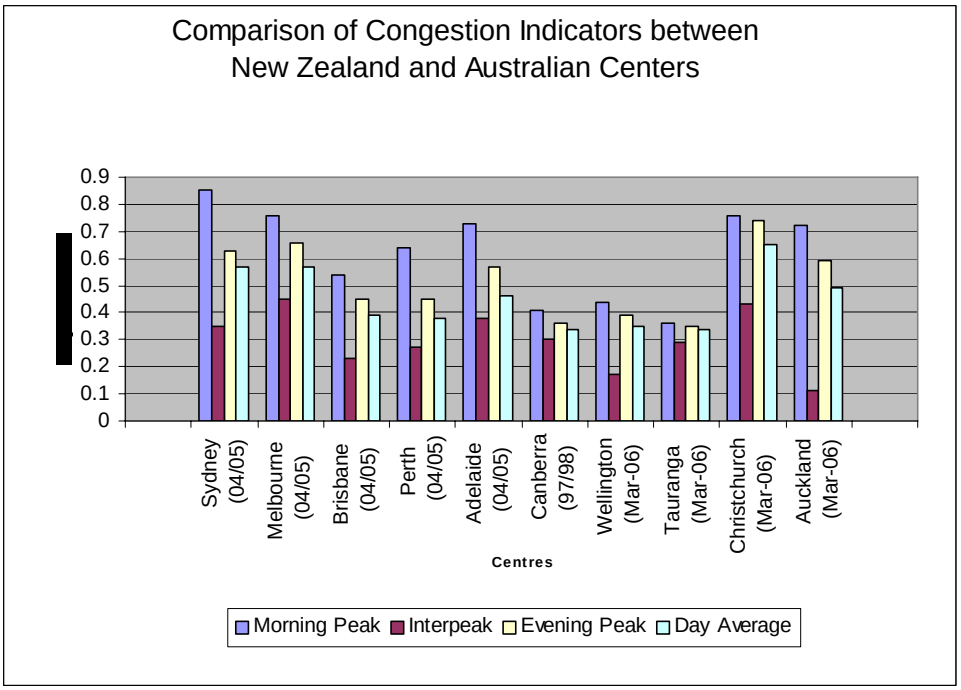



**Table 4: Summary of Christchurch Travel Time Performance Indicators**

| Indicator | Period | Comparison of Results | | |
|---|---|---|---|---|
| | | Mar 04 | Mar 05 | Mar 06 |
| Average Actual Travel Speed (km/h) | AM Peak | 39 | 36 | 34 |
| | Interpeak | 45 | 45 | 42 |
| | PM Peak | 41 | 39 | 35 |
| | All Day | 41 | 40 | 37 |
| Nominal Travel Speed | | 62 | 61 | 61 |
| Congestion Indicator (CGI) (delay/km) | AM Peak | 0.56 | 0.68 | 0.76 |
| | Interpeak | 0.38 | 0.35 | 0.43 |
| | PM Peak | 0.50 | 0.57 | 0.74 |
| | All Day | 0.48 | 0.54 | 0.65 |
| Variability of Travel Time | AM Peak | 20% | 20% | 19% |
| | Interpeak | 12% | 11% | 16% |
| | PM Peak | 17% | 18% | 18% |
| | All Day | 17% | 17% | 18% |

## City Comparisons

37. The following graph provides an illustrative comparison of the congestion indicators recorded in different cities throughout Australasia.

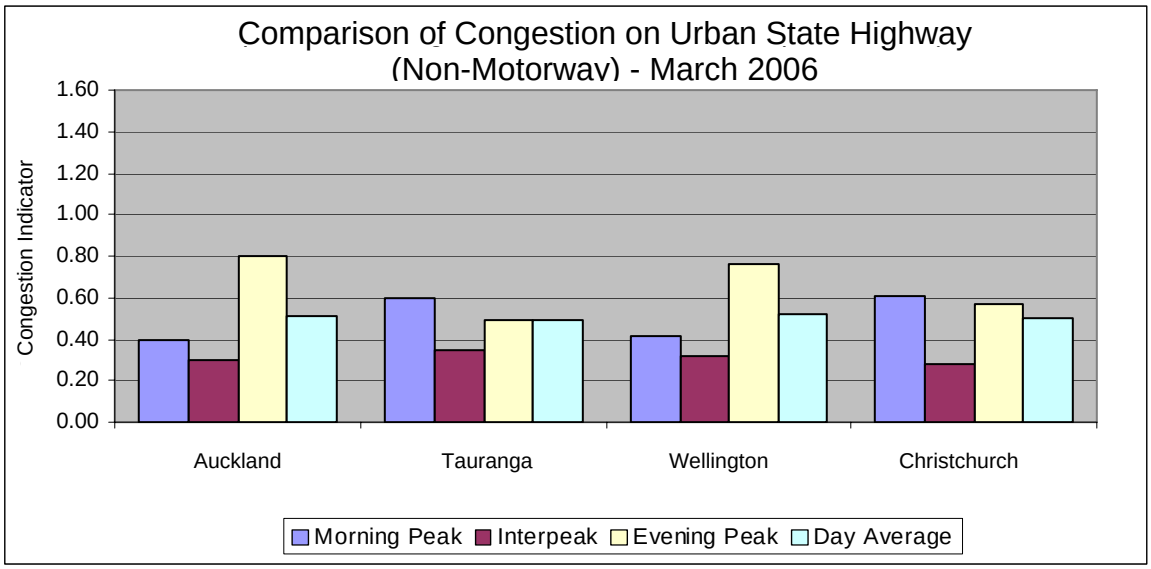


38. Although a useful illustrative tool, direct comparison on overall congestion between monitored cities is not reliable due to the different makeup and speed limits of each of the surveyed routes and cities.

39. Nominal speeds and road hierarchy can differ between different surveyed routes and cities. This makes it difficult to compare congestion indicators of different cities, as the collection methodology may remain the same, but the data will reflect slightly differing road conditions. For this reason, the following sections compare New Zealand cities using similar types of road network.

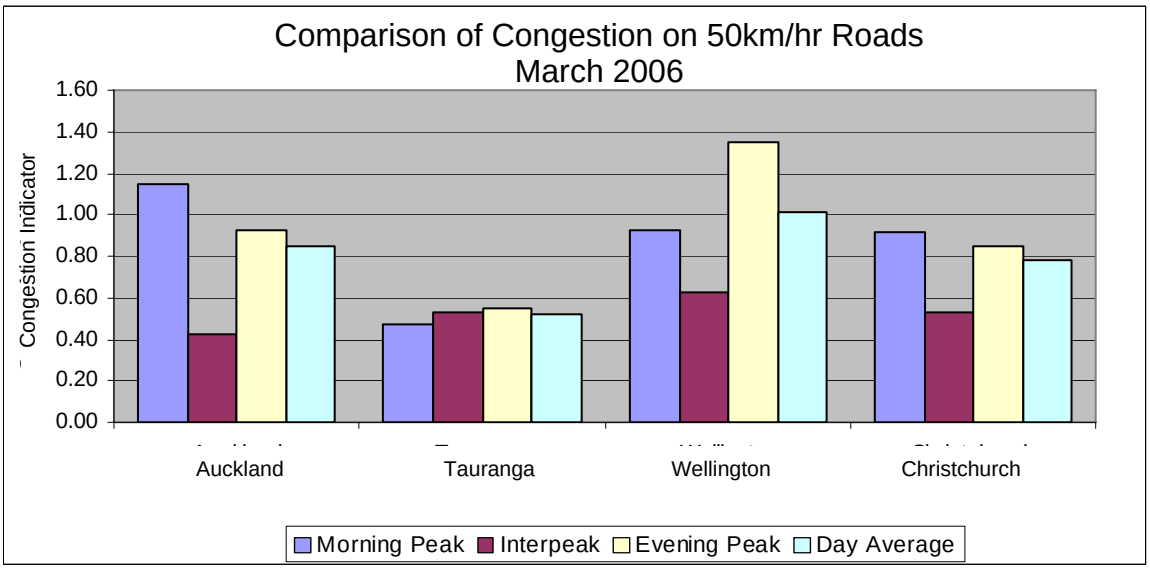
## Comparison of Congestion – New Zealand road networks

40. In order to compare cities in New Zealand, the following graph contains a comparison of congestion indicators between cities where only the urban state-highway (non-motorway) portions of the surveyed road network has been analysed.




41. It can be seen that the highest congestion indicator for traffic on urban state highways (non-motorways) occurs in the Auckland PM peak period, followed closely by the Wellington PM Peak period.

42. The graph below compares the congestion indicators on roads with a 50km/h speed limit (including any 50km/hr sections of state highway) in each of the surveyed cities.




43. The figure above indicates that Auckland has the highest congestion on 50km/h roads for the AM peak period. Wellington has the highest PM peak congestion for 50km/hr roads.

44. For Auckland, Wellington, and Christchurch high congestion rates occur during AM and PM peak periods, where as for Tauranga the congestion rate remains relatively constant all day. This graph also indicates that congestion is not limited to the state highways portion of the road network.