



Christchurch

Transport Operations Centre

A partnership of Christchurch City Council, New Zealand Transport Agency and Environment Canterbury
Keeping Christchurch Moving

LOW TRAFFIC FLOW PERIODS GUIDE

CTOC-TTM-009

Version Control

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Purpose	To provide guidance on when opportunities exist for Higher Impact Works Effecting the Transport Network
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PURPOSE

The purpose of this document is to provide guidance on when lower traffic flows are experienced throughout the year on the transport network in Christchurch. These lower demand periods may present an opportunity for projects with larger impacts to carry out work. This document explains when these low demand periods occur and the opportunities this could present for carrying out higher impact work.

1. General Work & School-Term Traffic Patterns in Greater Christchurch

The busiest traffic flows on roads in greater Christchurch are generally during the weekday (Monday to Friday) morning and evening peaks when people travel to/from work, schools, and daily activities;

- **Weekday AM peak:** 7am to 9am, in some locations stretches to 09:30am
- **Weekday PM peak:** 4pm to 6pm, in quite a few locations roads are busier from 2:30/3pm in areas where there are one or more schools nearby.

The next busiest time is generally the **weekday interpeak** (roughly between 9am and 4pm). It varies by location, interpeak traffic volumes can be 10-40% lower than the AM & PM peaks.

The **weekend peak** occurs approximately from 11am to 4pm and Saturday is generally busier than Sunday. Traffic volumes during this time can be similar to the weekday interpeak, ranging from being around 10% lower to 10% higher than interpeak volumes – again, this varies by location.

Traffic Management (TM) setups which effect travel are likely to have the greatest impact (result in highest delays, frustration, restrict/limit movement etc.) in the weekday AM and PM peaks.

Checking the traffic flows at the specific location of the work and the peak, interpeak, and weekend volumes is generally expected as part of a Traffic Impact Assessment (TIA) for TM setups with impacts proposed during the day on moderate-to-high volume routes.

2. Low Traffic Demand Periods

Traffic ‘demand’ is how many people want to travel at a particular time-of-day. Low flow, or “low demand”, periods occur when the demand to travel is less than the typical peaks described above.

There are three main types of Low Demand periods on the wider Christchurch transport network.

- **Long Weekend:** Annual holidays, Fridays & Mondays and those close to weekends.
- **School Holidays:** Three regular 2-to-3 week School term holidays.
- **Summer Period:** The period from roughly Christmas through the first two weeks of January.

The effects on traffic volumes during these three low demand periods and the opportunities this provides for carrying out higher-impact TM are described below.

In general, *CTOC supports and encourages projects to consider carrying out higher impact works during low traffic flow holiday periods.* Standard processes and procedures apply to higher impact works during holidays. In particular, the expectation that impacts are entered in Forwardworks (FWV) several months in advance of the project delivery is important.¹

¹ See CTOC Transport Impact Assessment Guide, Section 3, page 4. [Traffic management news and information : Christchurch City Council](#)

3. Opportunities During Low Demand Periods

If a high-impact phase of work can be carried out within a low demand time periods, these low traffic demand holiday periods described above may provide the opportunity to;

- Carry out work which has a **necessarily high impact** on the transport network at a time where traffic volumes are lower, and the impact to the community would be reduced.

And/or

- **Increase the resources or use a different delivery method** with a greater associated impact on the transport network to benefit the project, e.g. achieve a shorter construction duration.

Long Weekends

Traffic volumes on a long weekend are similar to typical weekends. They provide a 3- or 4-day period of 'weekend level' traffic flows. This provides an opportunity for **higher impact works taking several days which can't quite be completed during a typical 2-day weekend.**

If works are located on roads which are used as a major route in/out of the City, e.g. State Highways, works would need to consider higher flows leaving the City on the evening before and first morning of a long weekend, and returning to the City on the last day of the long weekend.

School Term Holidays

School Term Holidays occur three times a year, starting near the start of April, the start of July and the middle of October.

- Most significantly, traffic flows in this period are reduced in the *AM morning peak only*.
- There are no noticeable differences in the PM evening peak
- Flows may be lower in the afternoon in areas directly around Schools.
- Inter-peak traffic flows remain similar and may be mildly higher than typical weekdays.

In the AM peak traffic flows may reduce by approximately 10%, congestion reduces more significantly (an illustration of this is shown in the last section).

School Term Holidays provide the opportunity to carry out higher impact works that particularly **effect the direction of traffic in-bound to the city and in areas immediately around Schools.**

In some cases, there may be the opportunity to adjust the work approach so that more impactful work is carried out in the AM peak during a School Holiday and the impacts in the PM peak are reduced, e.g. changing the direction of a one-way closure for the duration of the works.

Summer Holiday Period

To support retail activity, CTOC generally restricts traffic management activities from the period before Christmas and during the Boxing Day sales, exemptions are considered. Accounting for this, the following points are noted with traffic flows over this period;

- From Dec 27th to Jan 3rd, day traffic volumes are **reduced by a significant amount**. Volumes can reduce by half or more. Weekend volumes are also lower.
- Volumes start to increase in the week after the New Year holiday (from around the 6th of Jan) towards typical levels. Volumes in this week are around 25% lower than typical.
- By the 2nd and 3rd week after New Year volumes are closer to typical, similar to the term School Holiday periods.
- There are two 'extreme' days where traffic volumes are the lightest in the entire year, Christmas Day and New Year Day.

The summer holiday period presents the following opportunities;

- A roughly 10-day period where traffic volumes are significantly less than at any other time of year (27th Dec to around 5th Jan). **Very high impact work taking several weeks to complete could be accommodated.**
- A longer period, 22 days (27th Dec to around 17th Jan), where **high impact work can be more readily accommodated.**
- Two days where **extreme impacts** can be accommodated, e.g. full closures of critical infrastructure and/or very high-volume routes (25th Dec and 1 Jan).

The above points are illustrated in a graph in section 5. Traffic Flow Examples.

4. CTOC Support and Approval Process

As described above, Long Weekends, School Term Holidays, and Summer Holiday Periods provide opportunities for carrying out higher impact works on the transport network and reducing the impact to the community and/or providing a benefit to the project (e.g. by being able to carry out the work more resource effectively).

CTOC supports these approaches and encourages projects which have the potential to have a higher impact on travel and access to consider and, if appropriate, plan works during holiday periods.

CTOC may have difficulty supporting higher impact works where the opportunity to work in a lower demand period does not appear to have been fully considered.

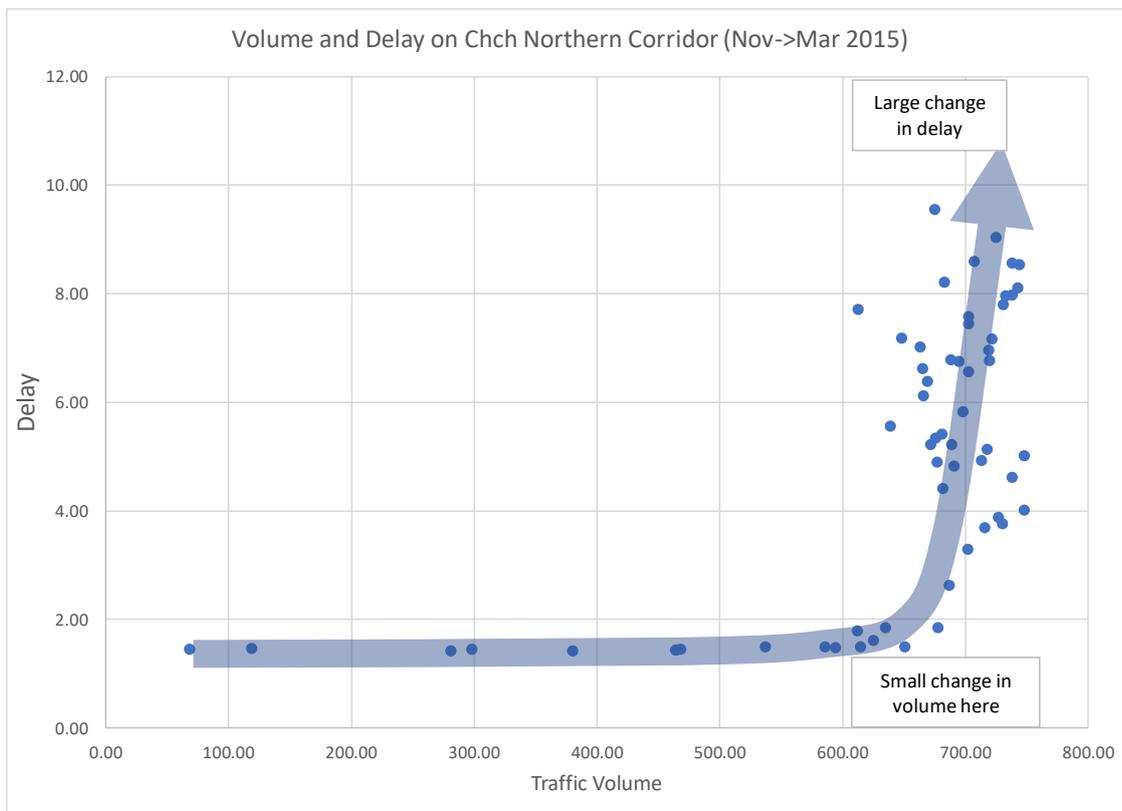
As noted, standard impact pre-approval and TMP approvals apply. However, there is a stronger emphasis on planning works with large potential impacts in advance, e.g. by entering impacts into Forward Works Viewer several months ahead of scheduled works.

5. Traffic Flow Examples

Example of Relationship Between Delay and Volume

The graph below shows delays and traffic volumes from 2015 on the Christchurch Northern Motorway through the summer holiday period and into February / March. The volume is from just before the AM peak, it shows that a relatively small change in travel demand (600vph-700vph) leads to a large change in delays (no delay to 10min delays).

This graph is an illustration of why the 10% reduction in traffic in the weekday AM peak during term school holidays leads to a much larger reduction in congestion and delays.



Summer Holiday Period Traffic Example

The graphs below show the traffic volumes on the Christchurch Southern Motorway city-bound through November, December, and January 2019-2020. These graphs provide a good illustration of the points relating to periods of opportunity during the Summer Holiday period.

