

# Trail Usage Report

## Summer 2021



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Prepared by

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[www.uroc.ca](http://www.uroc.ca)

## Introduction

This report covers trail traffic surveys on **Pass Powderkeg** trails for the period **May 1, 2021 to October 31, 2021**.

This is the eighth in a series of summer trail usage reports. A comprehensive description of the equipment and methodology is available in a previous report dated November 2014.

This March 2022 edition shows an **adjusted** Daily Average Count for counter PPTC01 as presented in Figure 2 Daily Average Count. Table 2 Summary Statistics still shows unadjusted values. An explanation for the adjustment is in Discussion of Results.

## Equipment and Methodology

### *Pass Powderkeg*

Six trail traffic counters were installed - referred to as PPTC01, PPTC02, PPTC03 etc. (Pass Powderkeg Traffic Counter 01 and so on). Trail counters were checked, and data downloaded approximately once a month.

PPTC01 was installed on the Double Dirt trail in the woods below the water tank;

PPTC02 was installed on the Double Dirt trail between the water tank and the Dale Strandquist trail;

PPTC03 was installed on the Chainsaw Massacre trail above the Dale Strandquist trail;

PPTC04 was installed on the lower half of Berma-Grin.

PPTC05 was installed on the Buck-50 trail above the mid-hill connection;

PPTC06 was installed on the Buck-50 trail near Southmore;

These trail counter locations are basically the same as used since 2017.

## Results

When discussing the results, we refer to "counts" not "users". We cannot tell whether a single user passes a counter once going outbound and a second time on their return (i.e., counted twice) or whether that user returned by a different route (only counted once).

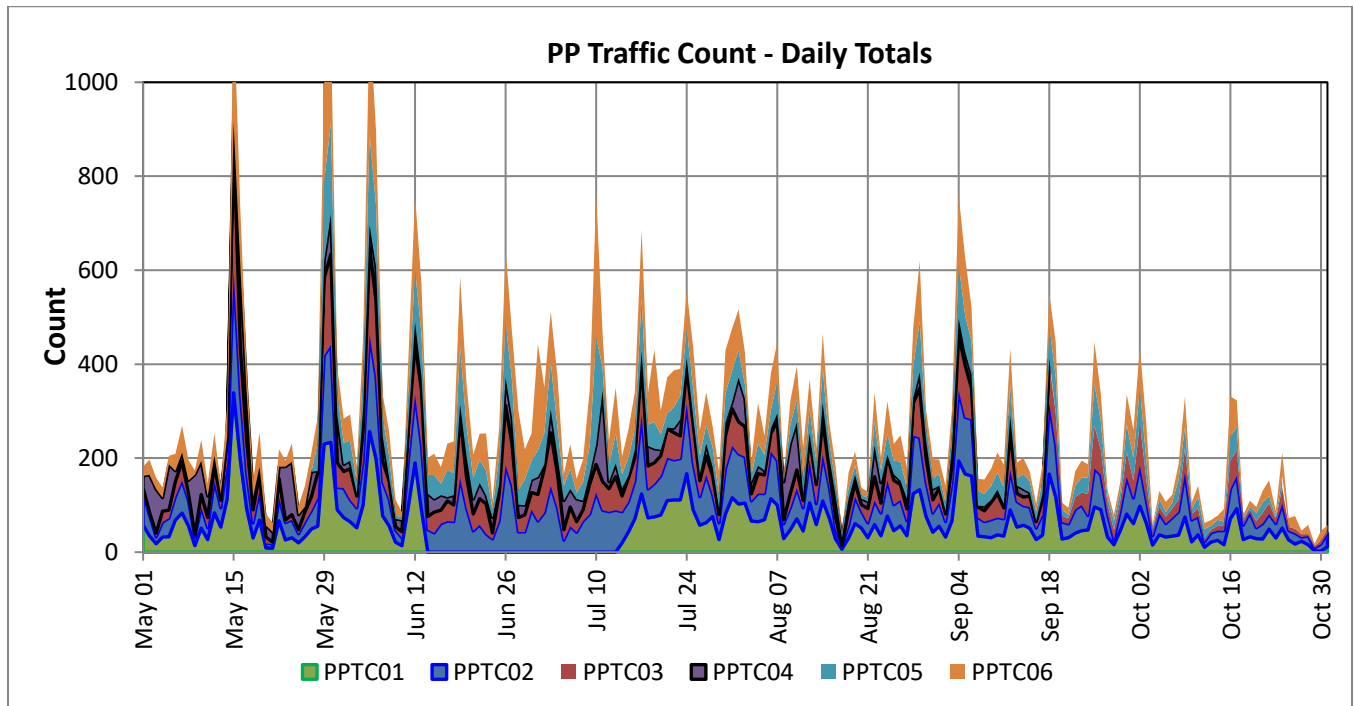
The data has received a limited amount of verification and some processing to remove obvious errors. The verification was simply that of comparing counted traffic with known traffic e.g., when the number of participants and approximate time of passage was known.

The IR counters will count people, large dogs, deer and other large animals i.e., any reasonably large warm body. It cannot indicate whether the user is ascending or descending the trail or whether a person is hiking, biking or using snowshoes.

In the histograms presented in Appendix A, for "Day of the Week", Sunday is represented by "1", Monday by "2" etc. The histograms show normalized data where, for example, the count for a particular day of the week was divided by the total count i.e., its proportion of the total. The normalized data provides a better basis for comparing the distributions for the different locations.

For the "Time of Day" histograms, the first time period is from midnight to 02:59, the second from 03:00 to 05:59 etc. It is probably reasonable to assume that most counts after 10 pm and before 6 am are animal movements. The overnight counts have been typically less than 1% of the total for each data set (after eliminating probable animal movements).

**Pass Powderkeg Summary**



**Figure 1 Traffic Count, Daily Totals Summer 2021**

The above **stacked area graph** gives a general idea of the traffic pattern through the summer season. Individual users may pass several counters, so the daily totals are not helpful in quantifying unique users; it is the pattern of usage that is illustrated – busy weekends, periods of low usage etc.

**Table 1 Alberta Statutory Holidays**

General holiday	2021
Victoria Day	Monday, May 24, 2021
Canada Day	Thursday, July 01, 2021
Labour Day	Monday, September 06, 2021
Thanksgiving Day	Monday, October 11, 2021

An interesting point to note is that the early season pent up demand was manifest in the first major spike in traffic on the May 15-16 weekend (the first weekend of the season when the trails were in good condition and the weather was very pleasant). In contrast, the following long weekend was a complete bust due to significant rain/snow and cold temperatures. Successive weekends also showed major spikes in traffic beyond what had

been previously experienced. This was widely observed in the community with overflowing parking around the trailhead by the Skills Park.

**Summary Table**

**Table 2 Summary Statistics (unadjusted)**

Counter	Trail	Start Date	End Date	No. of Days	Counts		
					Total	Avg Daily	Max Daily
PPTC01	Double Dirt-spresso	May 01	Oct 31	155	10229	66	339
PPTC02	Double Dirt-spresso	May 01	Oct 31	184	11879	65	260
PPTC03	Chainsaw Massacre	May 01	Oct 31	184	8183	44	281
PPTC04	Berma-Grin	May 28	Oct 31	157	5003	32	194
PPTC05	Buck-50, mid-hill	May 28	Oct 31	157	6996	45	229
PPTC06	Buck-50, lower hill	May 01	Oct 31	184	10747	58	302

**Notes:**

1. Start Date – start of reporting period or when counter was first installed; End Date – end of reporting period or when no further data was available.
2. No. of days – number of days between Start and End when valid data was available.

## Discussion of Results

The data provides a good general indication of the overall level of traffic and is useful for year-to-year comparisons. The IR counters provide no meaningful distinction between types of users and undoubtedly includes some animal counts. However, despite the limitations of the IR counters, the installations have remained consistent for up to eight years, so the data is considered to be valid for year-to-year comparisons. From a trail managers perspective, the data helps to show which trails are favoured by users and on what type of trail the club should focus its development activities.

The 2021 summer biking season overall showed a similar level of trail traffic to that of 2020 however the distribution through the season showed some differences. There was a total of 53,037 counts in 2021 versus 53,173 in 2020 (for the same six counters) – so essentially the same level of usage.

In 2020, with the onset of Covid restrictions, people increasingly turned to outdoor recreation when other options were limited. Crowsnest Pass biking trails were “discovered” by a wider population, many of whom might have previously travelled to Fernie and points west. The level of traffic was reasonably consistent through May – September 2020 as out of province destinations remained off limits for Albertans. It is interesting to note that the 67% traffic increase in 2020 is very similar to traffic level increases observed elsewhere for recreational trails. Ref. <https://www.americantrails.org/resources/a-data-driven-approach-digging-into-the-numbers-behind-the-pandemic-trail-boom> .

In contrast, for early 2021, when out of province travel was still restricted, we saw our highest ever levels of usage at Pass Powderkeg, even exceeding 2020 peaks. Parking at the Skills Park trailhead was full at weekends and there was spillover along the ski hill road. However, by mid-year, Covid travel restrictions began to ease and level of usage drops slightly thereafter relative to 2020.

The annual change in “Daily Average” count is readily viewed in Figure 2. The daily average count is the best, simple basis for comparison since there are periods of missing data for some counters.

For Figure 2, the average daily count for PPTC01 has been adjusted to present a more reasonable measure of trail traffic at that location. There was a month’s worth of missing data between June 13 and July 12, namely during peak season. For the adjustment, the count for the same period from 2020 was added to compensate and the number of days used in averaging adjusted accordingly. The missing data was the result of a spider setting up home in front of the sensor. With the adjustment, the total of all counts for the year would have been approximately 58,000 which would be a 7% increase from 2020. [Further explanation: For a block of missing data of almost a month, when during the season the data is missing makes a difference. Data missing from peak season will reduce the average; data missing from the tail end of the season will increase the average.]

For 2021, the S7 Ultra was back after skipping 2020. Its route passed the two counters on Buck-50. See the July 10 peaks for PPTC05 Figure 17 and PPTC06 Figure 20. Participation was lower than in previous years because of Covid concerns. The increase in traffic on Buck-50 from S7 is undoubtedly offset by decreased traffic by other users.

Berma-Grin showed a significant increase in traffic continuing the trend after improvements were made in 2019 to make the trail accessible to a wider range of skill levels. The 2019 construction of the 75-cents bypass of the steep OHV trail is also a likely contributing factor since it provides a decent connection between upper Buck-50 and Berma-Grin i.e., a variation on the popular circuit up Chainsaw Massacre and down Buck-50 to the TC Energy pipeline right of way.

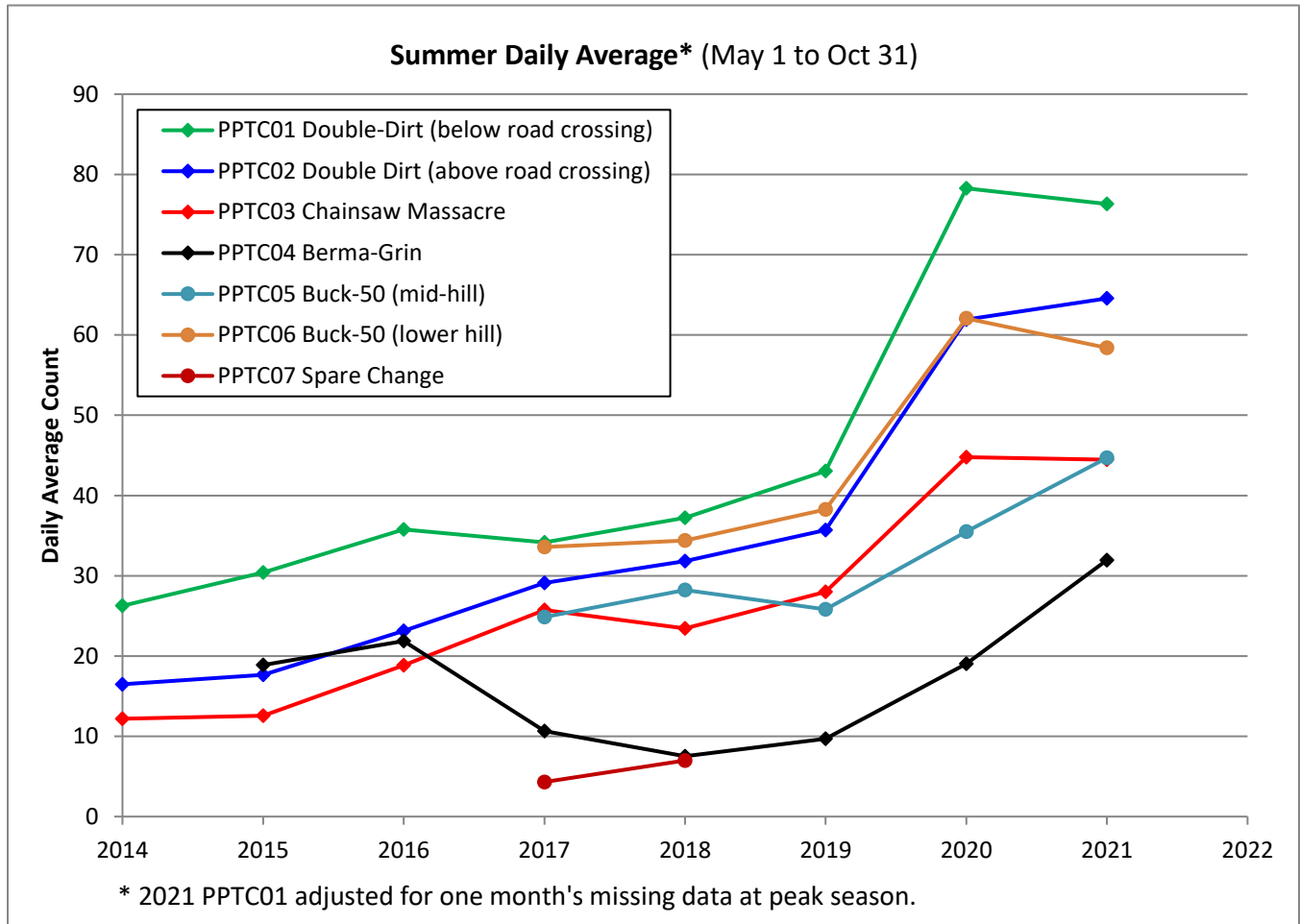


Figure 2 Daily Average Count (adjusted)

- PPTC01 Double Dirt trail in the woods below the water tank
- PPTC02 Double Dirt trail between the water tank and the Dale Strandquist trail
- PPTC03 Chainsaw Massacre trail above the Dale Strandquist trail
- PPTC04 Berma-Grin, lower half
- PPTC05 Buck-50 trail above the mid-hill connection
- PPTC06 Buck-50 trail near Southmore
- PPTC07 Spare Change (this location no longer used)

## Recommendations

Five trail counters will be left out for the winter.

Consider how UROC might access activity tracking app data. An increasingly popular approach to analyzing trail traffic is to combine counter data with Strava and Trailforks heat maps. Heat maps show traffic on just about every trail in Crowsnest Pass and by every type of user. A Strava user may chose to indicate how they are using a trail – hiking, biking, OHV and so on. Some assumptions may be made about user type by examining speed profiles. Heat maps may be benchmarked by comparing heat map traffic data with counter data. This requires a level of detail for the heat maps that is not typically available without payment or to clubs like UROC.

AEP have access to Strava Metro numerical data for 2020 and provided some graphs to us for all the mountain biking trails in Crowsnest Pass. This information is proprietary, and we are not able to include in this report.

Since only a small proportion of trail users track their activity with these apps, caution needs to be used when projecting overall trail use. Ideally, heat map counts need to be compared with counter data for a variety of trails. Clearly certain types of users favour these apps, and their use may be far from uniformly distributed across all types of trails.

Consider acquiring additional counters to monitor activity on new trails. In 2022, UROC expects to build two new downhill only trails at Pass Powderkeg. It will be interesting to see how this affects both overall traffic level and the distribution. The club may want to consider acquiring additional counters from AEP (Crowsnest Nordic is working on this) or possibly redeploying a couple of our current inventory.



## Appendix A: Additional Graphs for Pass Powderkeg Trail Traffic.

For the following graphs, refer to Table 2 for the maximum daily totals.

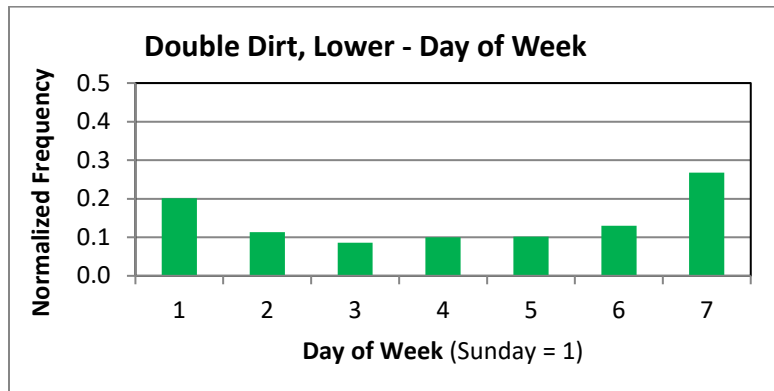


Figure 3

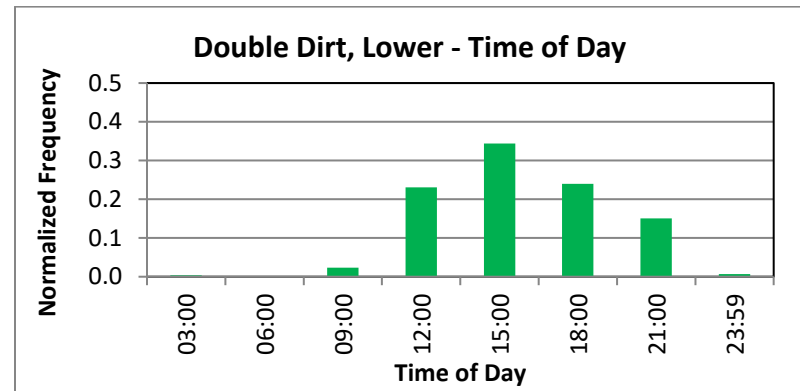


Figure 4

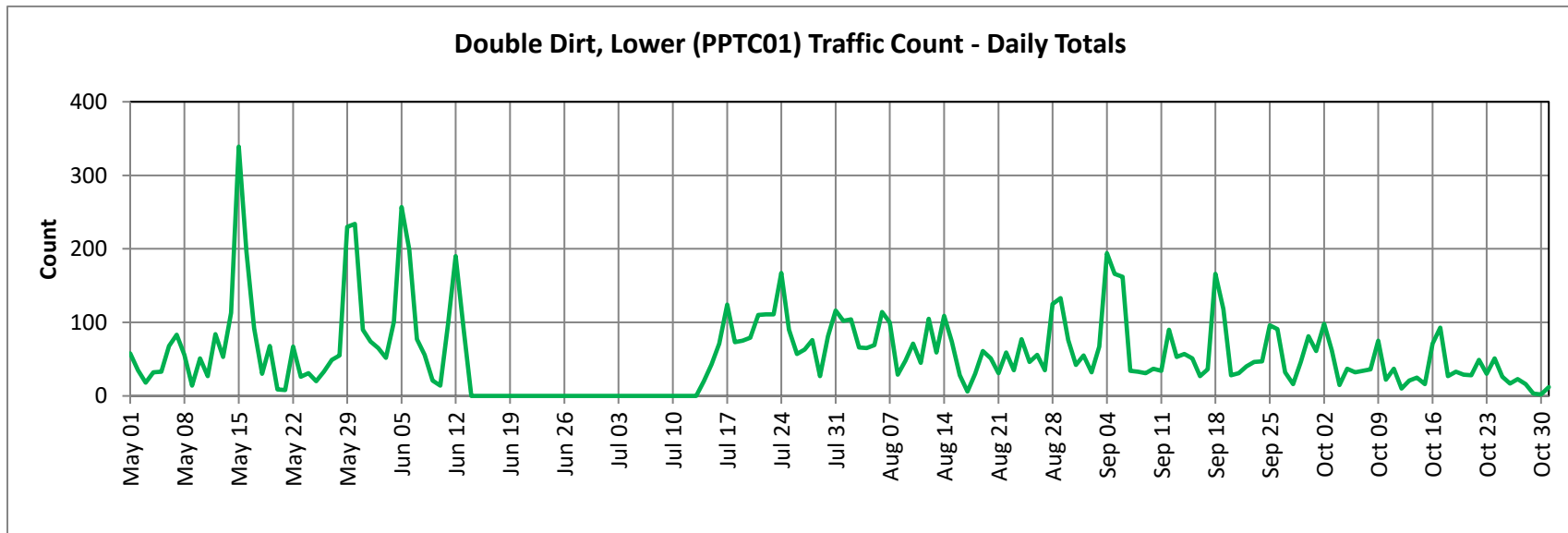


Figure 5

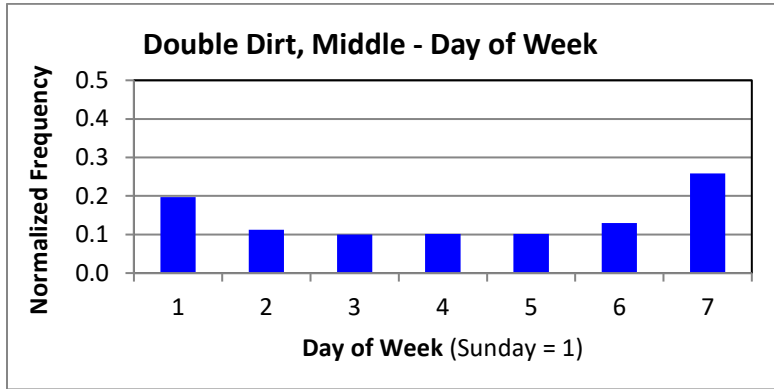


Figure 6

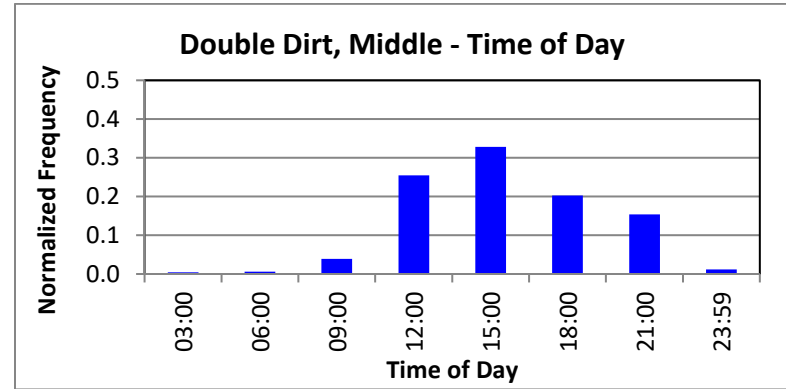


Figure 7

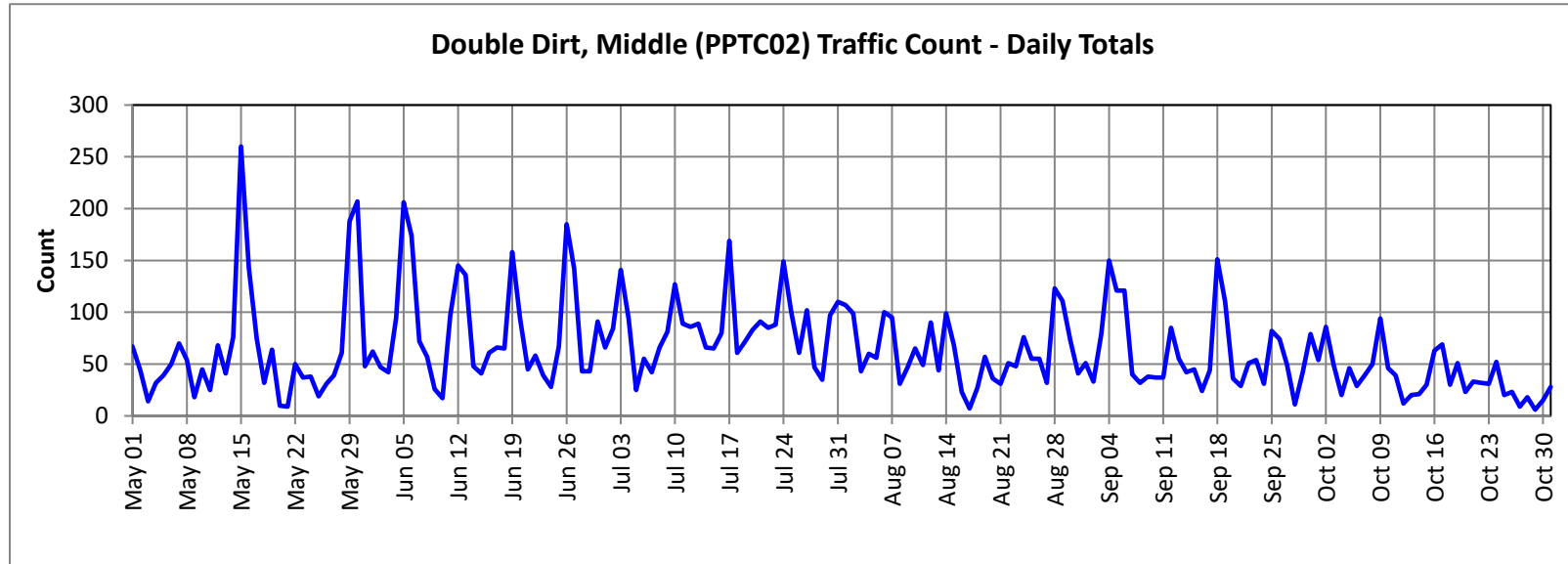


Figure 8

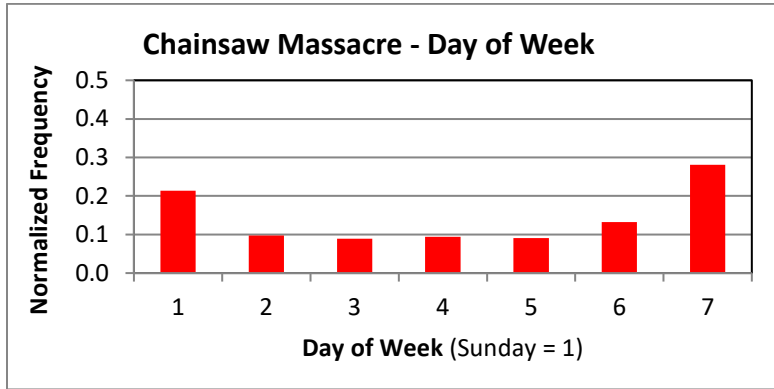


Figure 9

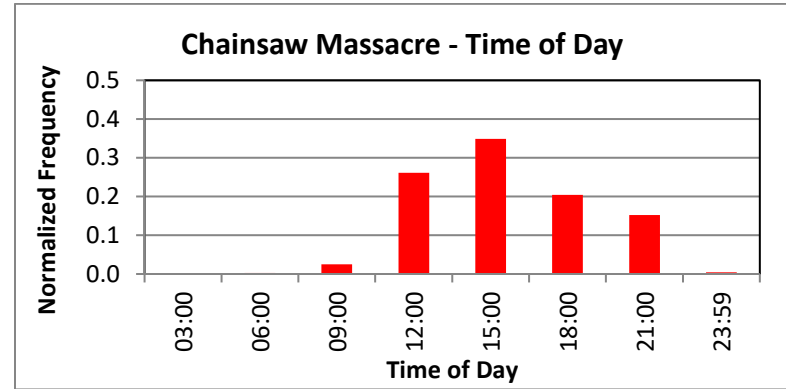


Figure 10

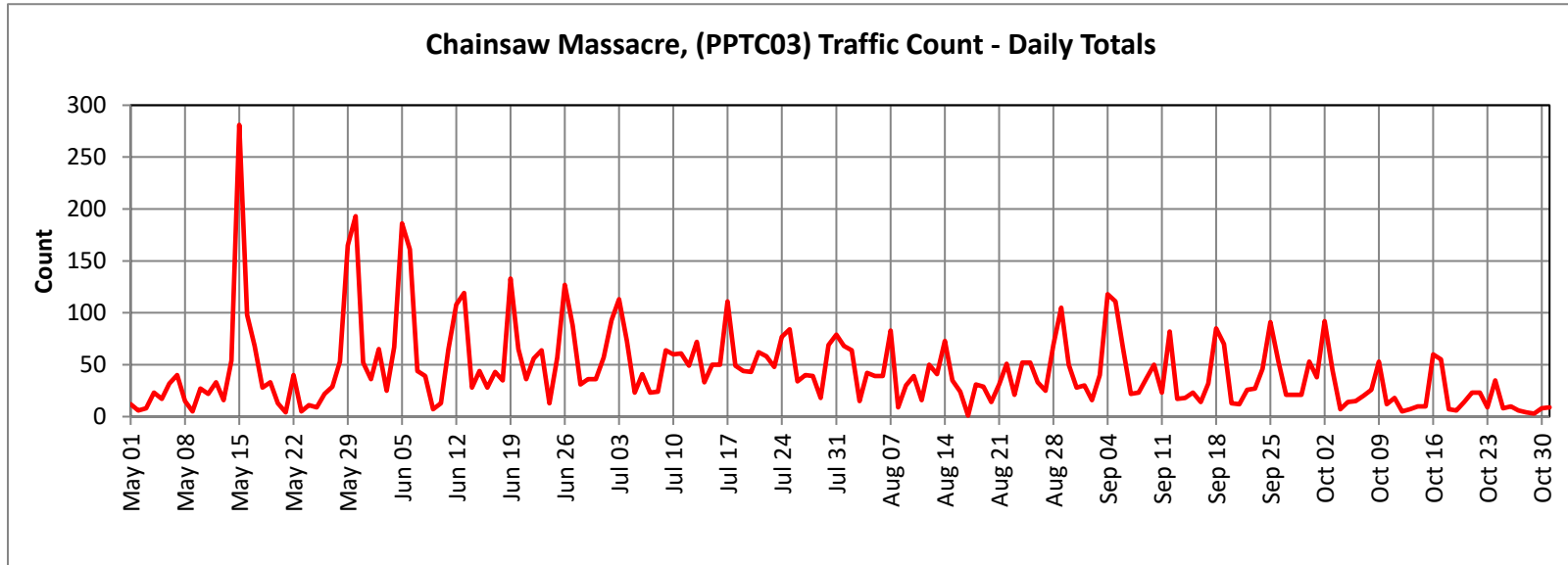


Figure 11

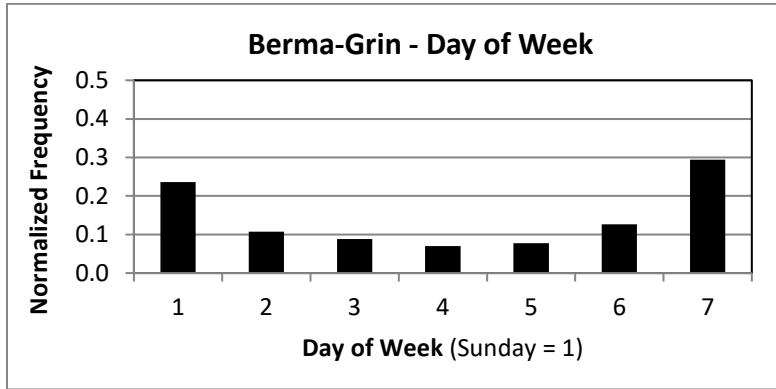


Figure 12

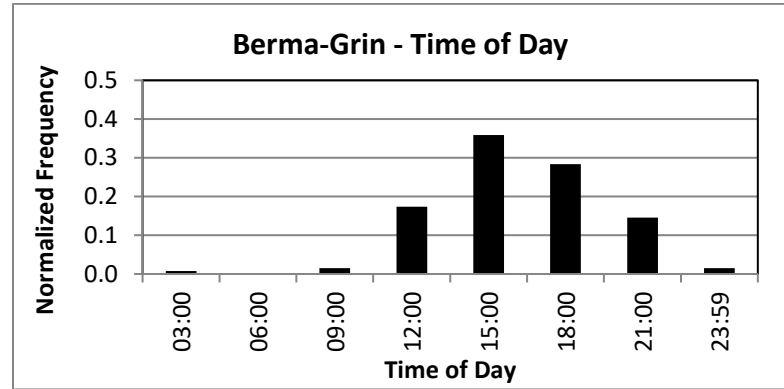


Figure 13

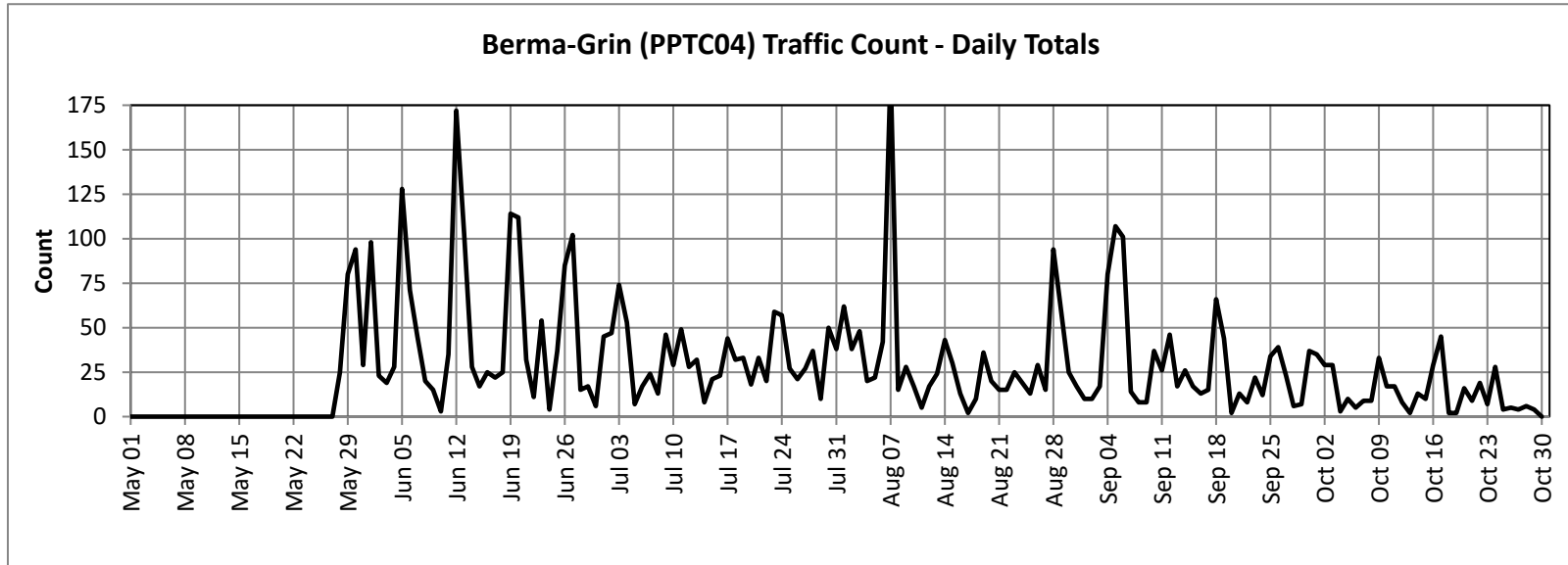


Figure 14

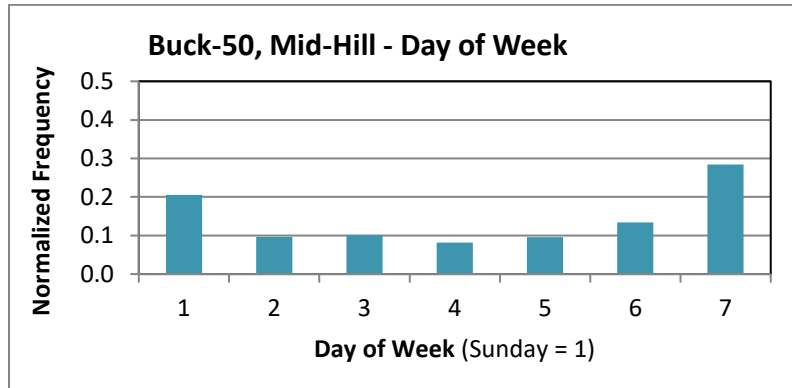


Figure 15

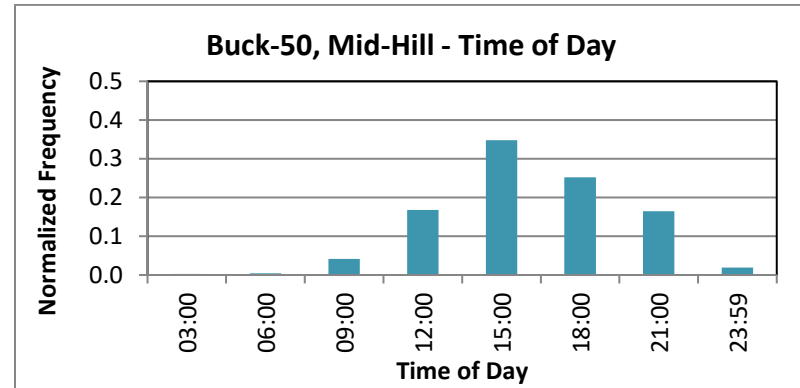


Figure 16

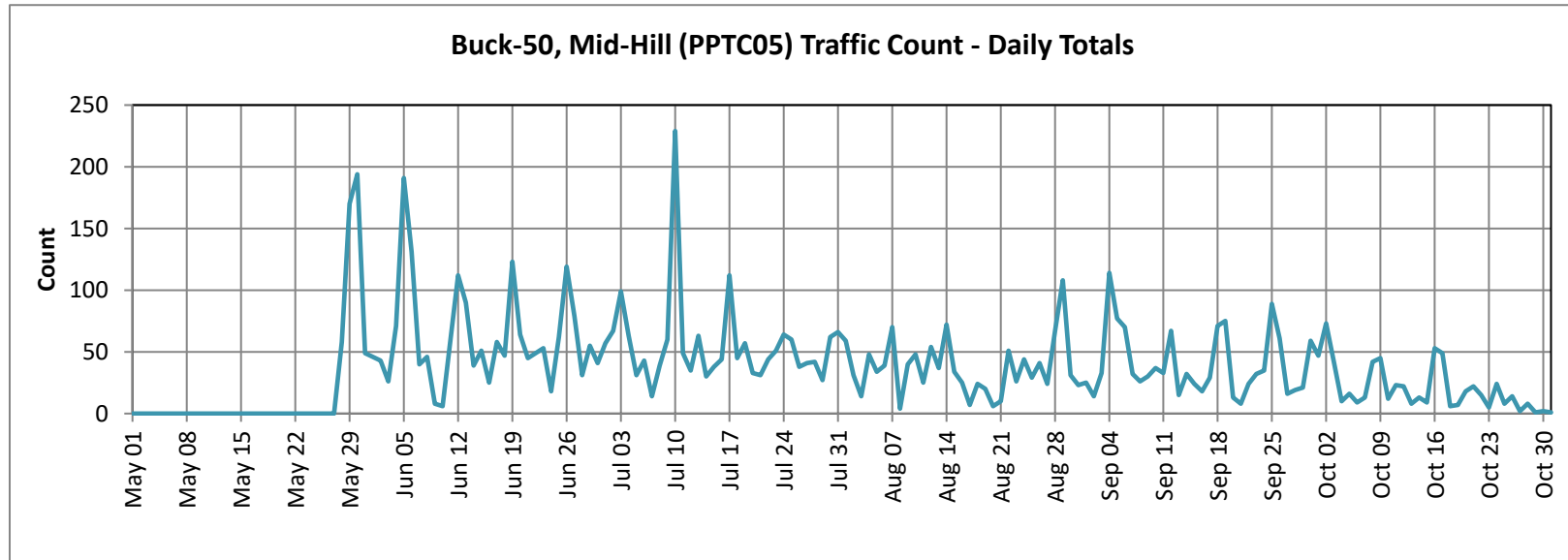


Figure 17

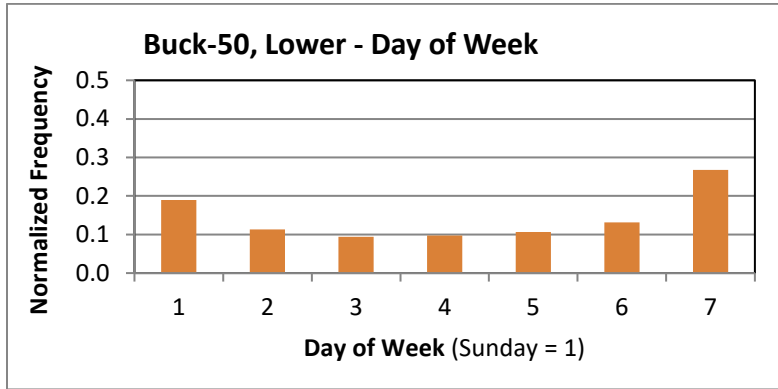


Figure 18

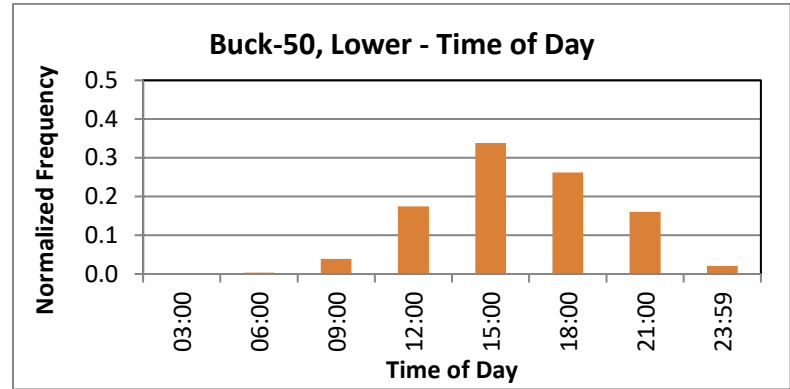


Figure 19

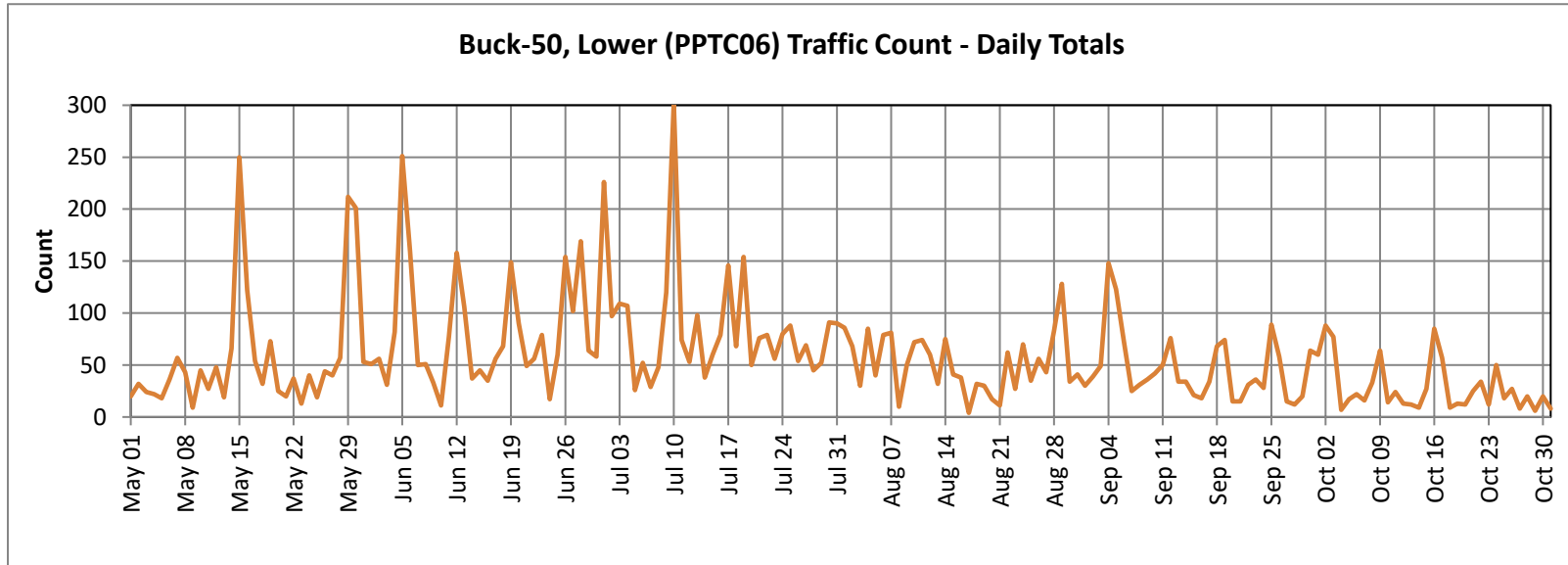
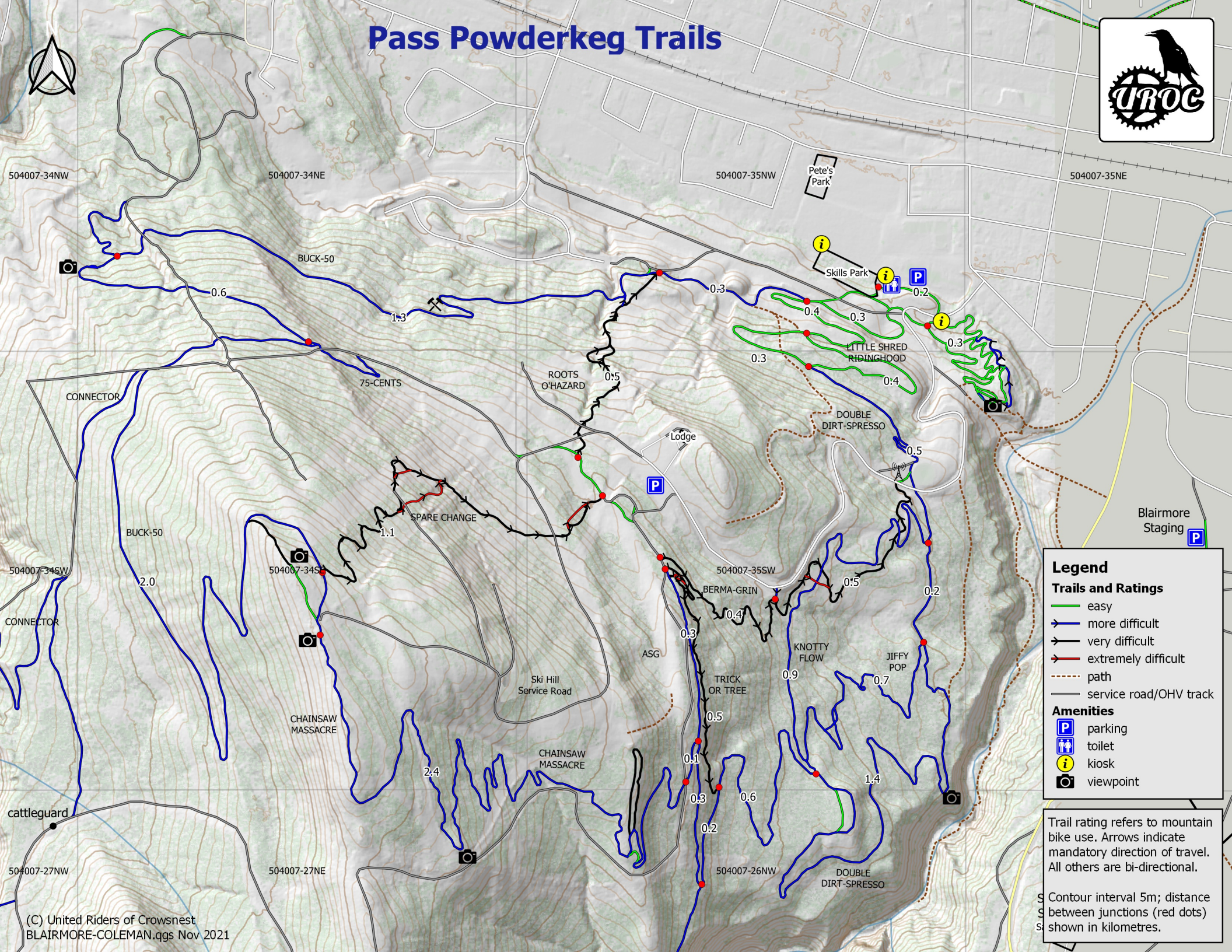


Figure 20

# Pass Powderkeg Trails



**Legend**

**Trails and Ratings**

- easy
- more difficult
- very difficult
- extremely difficult
- - - path
- service road/OHV track

**Amenities**

- P parking
- toilet
- i kiosk
- viewpoint

Trail rating refers to mountain bike use. Arrows indicate mandatory direction of travel. All others are bi-directional.

Contour interval 5m; distance between junctions (red dots) shown in kilometres.