

Smart Christchurch 'Multi-Modal Counting' Trial Policy

1. Document purpose

This policy describes how CCTV cameras are being used for a multi-modal counting project trial in the Smart Christchurch programme and how we are collecting and using personal information in connection with this trial and safeguarding citizens' privacy.

The primary purpose of CCTV cameras is for crime prevention and safety and existing privacy policies cover that use.

This policy pertains only to the **secondary** use of a small subset of cameras in our city where camera footage is being automatically processed by a 3rd party data analysis provider to identify mode shapes and direction of travel.

This policy explains what kind of personal information we collect, when we collect it and how we use and store it by setting out the:

- Objective of the trial
- Scope of the trial
- Roles and responsibilities of the stakeholders
- Trial hardware and software
- Data collection and disposal
- Privacy impact and assessment

2. Trial objectives

The objective of the trial is to convert our current 20th century method of counting pedestrians to a smarter, more efficient method that uses 21st century technology and approaches.

An automated pedestrian counting solution will answer questions such as:

- What lanes do people travel through?
- Where do they like to sit and rest?
- Which precincts, facilities, or events attract the most people?

Pedestrian counting already occurs in the city and is typically done by a group of university students with 'clickers' counting and taking notes about peoples' direction of travel and dwell time over the summer holidays.

The Smart Christchurch team identified an opportunity to create a public-private collaboration that uses existing technology in the city to provide a reliable and consistent, automatically generated dataset to a wider range of stakeholders.

2.1. Expected outcomes

Christchurch will gain powerful insight from understanding how people are using our emerging city. What lanes do people travel through? Where do they like to sit and rest? Which precincts, facilities, or events attract the most people?

The information collected from monitoring pedestrian flow in identified areas can provide information to city stakeholders that will improved their understanding of the day-to-day patterns of city residents and visitors. It can also provide insight on the usage and movements in areas where new facilities have opened such as Tūranga (our new central library) and Hoyts Entex.

The reports produced as a result of this analysis will provide insight to stakeholders such as developers, event managers, the tourism industry, city administrators, planners, and social agencies who provide day to day support for our citizens.

There is an added benefit that data can be given to emergency coordinators responding to shock events such as earthquakes.

3. Trial scope

The cameras used for this trial are located in areas that do not interfere with normal activities of the space nor unreasonably intrude on privacy of individuals. The camera footage being analysed is a 10min interval taken each hour from 8am to 8pm each day. The current location of the cameras being used for multi-modal counting are (see location map in appendix 1):

- Cathedral Square
- Cashel Mall
- Hereford Street
- St. Asaph Street
- The Terrace/Bridge of Remembrance
- Tūranga
- Worcester Boulevard
- New Brighton Mall

4. Stakeholder roles and responsibilities

The key stakeholders involved in this trial are the:

- Trial initiator
- Data analysis provider
- Camera footage providers
- Report generator
- Report recipients

5. Trial initiator

The Smart Christchurch programme has been initiated to deliver rapid proof-of-concept projects to make Council's vision of 'Christchurch as a city of opportunity for all' possible.

Smart Christchurch uses 21st century technology and approaches to connect communities, innovation, and information; creating a better experience for people in Christchurch.

The role of Smart Christchurch is to:

- set up the objectives of the trial
- manage the trial
- evaluate the trial and make a recommendation for a long-term solution based on the outcome

6. Camera footage providers

The cameras being used for this trial are owned by private companies and developers and public agencies such as Christchurch City Council (CCC), Christchurch Transport Operations Centre (CTOC), Development Christchurch, and Christchurch NZ.

The role of the camera footage providers is to:

- provide camera footage to the data analysis provider for processing
- display signage advising the public of the existence and use (both primary and secondary purposes) of the cameras

7. Data analysis provider

The trial is being delivered in partnership with VIP Security Limited. VIP Security has been Christchurch City Council's (CCC) contractor for electronic building security and access since 2002. VIP employees work within the company's existing Security and Confidentiality Policy and in accordance with the CCC – VIP Security Data Access and Privacy Agreement 2002 which includes guidelines on the provision and transfer of data, and confidentiality and privacy.

In addition VIP Security is accredited by the New Zealand Defence Force's (NZDF) Defence Industry Security Programme (DISP) and have annual audits to confirm compliance with the provisions of the NZDF Orders 51 Series, Volume 7 Industrial and Project Security (see appendix 2).

For the purpose of this trial, VIP Security has sole responsibility for the camera footage used in the multi-modal counting trial. All data processing is done at VIP Security's secure premises and the legal responsibility is with VIP Security to protect the data while it remains on-site. They are the owners and sole users of the software being used to process the recorded images. VIP Security is responsible for complying with the Privacy Act 1993.

The role of VIP Security is to:

- be the point of aggregation for the camera footage data
- provide a 'software as a service' model to the trial initiator for automated analytics of modal shapes and directions
- distribute an output of the data containing time of day, day of week, date, direction of travel, and total count in a spreadsheet (or other agreed format) within 24 hours of processing the camera footage data (see sample spreadsheet in appendix 3)
- provide a secure location for the camera footage data while on VIP Security premises
- prevent any malicious use of the camera footage data while on VIP Security premises
- dispose of the camera footage data within 7 days of processing
- Comply with the CCC – VIP Security Data Access and Privacy Agreement 2002
- comply with the Privacy Act 1993 (appendix 4)

8. Report generator

Reports will be produced by CCC (or 3rd parties acting on their behalf) and will be made available to report recipients.

The role of the report generator is to:

- transfer the files received from the data analysis provider into a CCC approved document management system
- make available user-friendly reports of the data that meet the wide range of stakeholders' needs
- provide enhanced reports for camera footage providers
- create a dashboard to operational stakeholders
- make the trial data available quarterly (or as agreed) to the general public

9. Report recipients

Report recipients include developers, event managers, the tourism industry, city administrators, planners, and social agencies who provide day to day support for our citizens.

The role of the report recipient is to:

- Use the insights gained in the reports to improve the experience of citizens and visitors of Christchurch
- Provide feedback to the report generator what information is valuable and how the reporting can be enhanced to be even more useful
- Suggest additional sites to the trial initiator for multi-modal counting opportunities that would enhance the commercial and public utility of Christchurch

10. Trial hardware and software

This section describes the hardware and software being used to collect and analyse the camera footage for the multi-modal counting trial.

10.1. Hardware

This section describes the primary hardware that is used for this trial, the cameras that are collecting the footage and the servers that are used for storing and analysing the data.

10.1.1. Cameras

The Smart Christchurch programme uses existing cameras where possible, so that trial costs are minimised. The cameras are located in areas that do not interfere with normal activities of the space nor unreasonably intrude on privacy of individuals.

The camera viewing zones have signs advising the public that they monitoring is taking place for the primary purpose of security and crime prevention and the secondary purpose of gathering analytics. Example signage is provided below:



10.1.2. Servers

The servers that are used for storing and analysing the data during this trial is located at VIP Security in a monitored, secure, server room.

10.2. Software

To minimise human intervention and alleviate privacy concerns, internationally reputable software designed for multi-modal analysis is being used in this trial to count modal shapes and direction of travel on the camera footage.

By using software, counting of pedestrian, bikes, cars, etc. is automatically processed by the software and manual viewing of camera footage is not required.

In order to run the software, the first still images of a recording is visible to the data analyst. However, the data analysts are employees of VIP security who are trained and vetted to comply with the company's security and privacy policies.

11. Data collection and disposal

Camera footage data is collected and held on VIP Security secure premises until processing occurs (approximately one week after capture) and footage is subsequently deleted (approximately week of processing).

The output provided to CCC for the trial is aggregated pedestrian totals in a spreadsheet with generic information such as location, time of day, date, and total count (see appendix 3).

This spreadsheet contains no personally identifiable information as shown below:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Site	Period	0800 Totals	0900 Totals	1000 Totals	1100 Totals	1200 Totals	1300 Totals	1400 Totals	1500 Totals	1600 Totals	1700 Totals	1800 Totals	1900 Totals
2	New Brighton	1/09/2018	16	33	105	221	249	333	272	64	50	48	19	21
3	New Brighton	2/09/2018	7	17	29	46	62	69	42	22	36	10	31	9
4	New Brighton	3/09/2018	3	9	13	28	12	14	19	24	16	11	15	5
5	New Brighton	4/09/2018	1	15	29	36	23	34	39	36	16	19	32	10
6	New Brighton	5/09/2018	3	31	6	40	60	39	18	44	16	19	23	5
7	New Brighton	6/09/2018	7	17	22	40	29	29	26	22	30	24	33	25
8	New Brighton	7/09/2018	7	22	19	53	29	43	26	36	27	38	27	26
9	New Brighton	8/09/2018	41	28	103	118	123	131	104	63	42	18	29	22
10	New Brighton	9/09/2018	4	17	41	39	42	83	36	67	41	31	18	22
11	New Brighton	10/09/2018	6	24	28	16	33	23	41	18	16	39	17	6
12	New Brighton	11/09/2018	6	11	18	34	26	18	31	18	16	13	44	18
13	New Brighton	12/09/2018	11	20	32	33	40	22	15	44	36	24	46	13
14	New Brighton	13/09/2018	2	9	25	36	47	34	21	29	30	18	36	19
15	New Brighton	14/09/2018	8	18	11	26	60	38	56	45	26	22	66	21
16	New Brighton	15/09/2018	31	48	111	288	336	272	257	130	44	28	43	30
17	New Brighton	16/09/2018	6	22	17	54	99	93	157	124	52	41	43	3
18	New Brighton	17/09/2018	8	11	33	29	23	34	34	27	25	17	9	8
19	New Brighton	18/09/2018	13	12	28	29	31	26	29	27	17	42	29	26
20	New Brighton	19/09/2018	11	16	16	24	23	23	29	19	19	20	23	20
21	New Brighton	20/09/2018	1	13	20	28	27	54	26	24	28	47	49	8
22	New Brighton	21/09/2018	3	16	10	23	29	40	25	23	27	15	24	4
23	New Brighton	22/09/2018	12	49	82	197	292	228	234	73	50	39	59	23
24	New Brighton	23/09/2018	11	7	43	59	61	54	62	36	9	13	22	13
25	New Brighton	24/09/2018	5	25	36	26	20	30	22	19	15	17	20	2
26	New Brighton	25/09/2018	2	14	8	21	22	21	32	33	22	23	24	11
27	New Brighton	26/09/2018	10	24	31	40	35	27	35	57	36	24	15	17
28	New Brighton	27/09/2018	14	1	24	34	25	32	49	34	25	42	15	33
29	New Brighton	28/09/2018	9	10	21	21	50	32	23	27	34	33	15	36
30	New Brighton	29/09/2018	11	39	118	239	185	148	186	65	61	33	56	15
31	New Brighton	30/09/2018	7	12	21	30	39	46	53	53	55	27	17	27

12. Privacy impact assessment

This section describes the actions taken to safeguard citizens' privacy within the Multi-modal Counting Trial using the Office of the Privacy Commissioner's Privacy Assessment Toolkit as a guideline (see appendix 5).

The privacy impact for the Smart Christchurch Multi-modal Counting Trial has been assessed as **low** because no personal information will be collected, used, or disclosed during the trial. Reasons for this assessment include:

- The camera footage data is analysed by software that counts modal shapes and identifies direction paths. This software does not use facial recognition nor do people (data analysts) monitor the footage.

- The camera footage data is aggregated, stored, analysed, and subsequently deleted at a 3rd party security vendor's premises which operates in accordance with the Christchurch City Council (CCC) – VIP Privacy and Confidentiality Agreement 2002 as well as the Privacy Act 1993.
- The output provided to CCC for the trial is aggregated pedestrian totals in a spreadsheet with generic information such as location, time of day, date, and total count.
- The cameras being used for this project are existing cameras owned privately by a business or by a public agency such as CCC or Christchurch Transport Operations Centre (CTOC). Most of these cameras are being used for crime and safety prevention as well as for traffic monitoring.
- The analysis for this trial is automated, non-personal, and is similar to the traffic monitoring already taking place on the CTOC cameras.
- There is a data collection, retention, and deletion agreement which minimises malicious or accidental misuse of camera footage data.
- Signage will be installed in camera zones in compliance with the Privacy Act.
- The public have been aware of CCTV cameras and their use for many years. Value-added post-analysis conducted automatically by reputable purpose-built software to produce aggregated shape totals is unlikely to elicit a negative response from the public.

Related Documents

APPENDIX	TITLE	DOCUMENT
1	Smart Christchurch Multi-Modal Counting Trial – Camera Location Map	 Multi-modal analysis CCTV camera locations.pdf
2	NZDF Certificate of Accreditation	 NZDF Certificate of Accreditation.pdf
3	Sample Multi-Modal Counting Trial Data Report	 Sample Report - Pedestrian Count.xls
4	Privacy Act 1993	 Privacy Act 1993.pdf
5	Privacy Analysis: Smart Christchurch 'Multi-Modal Counting' Trial Policy	 Smart Cities - Smart Christchurch Multi-Modal Counting Trial Policy.docx

Document Owner

The document owner is the Smart Christchurch Team.

Document approval

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