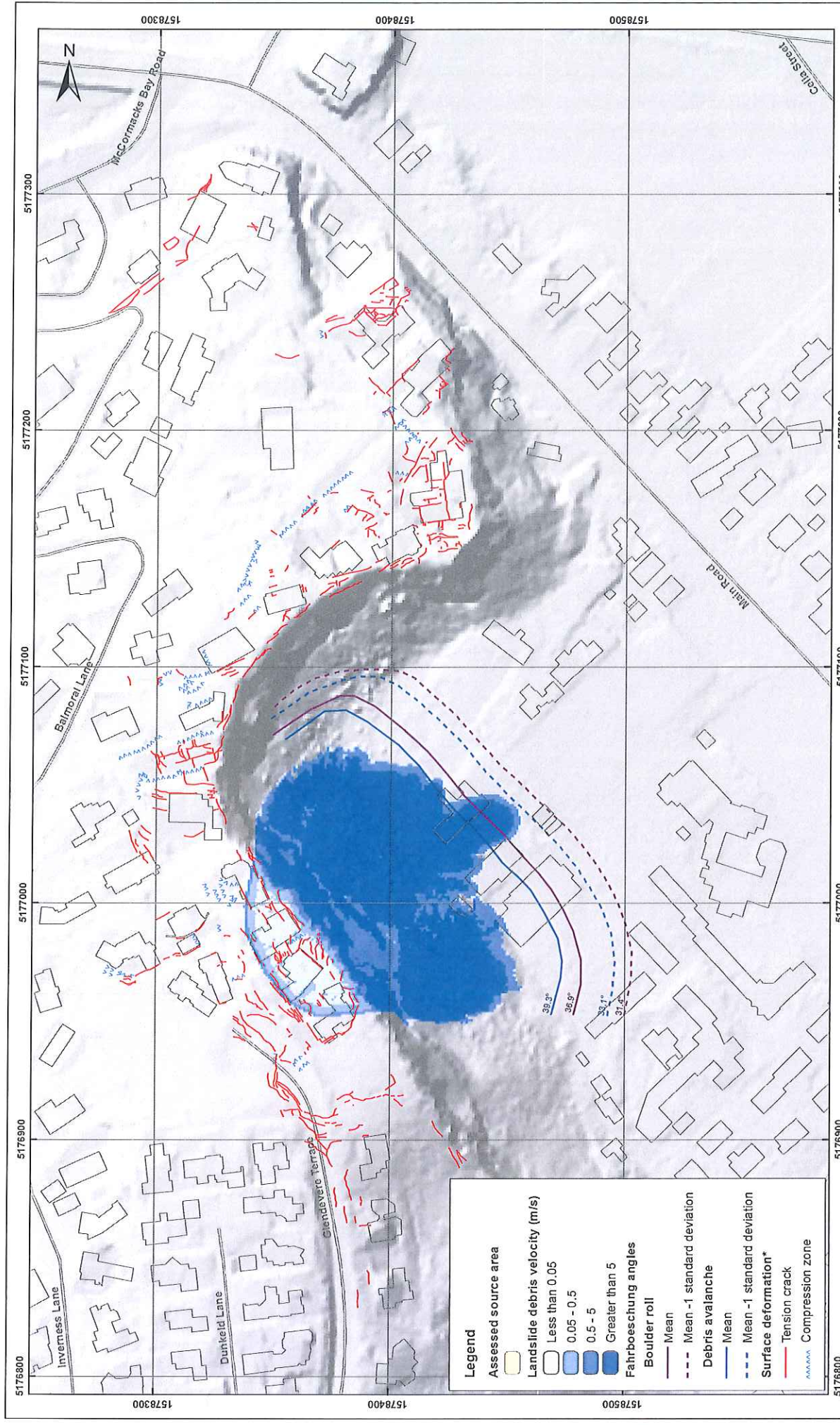
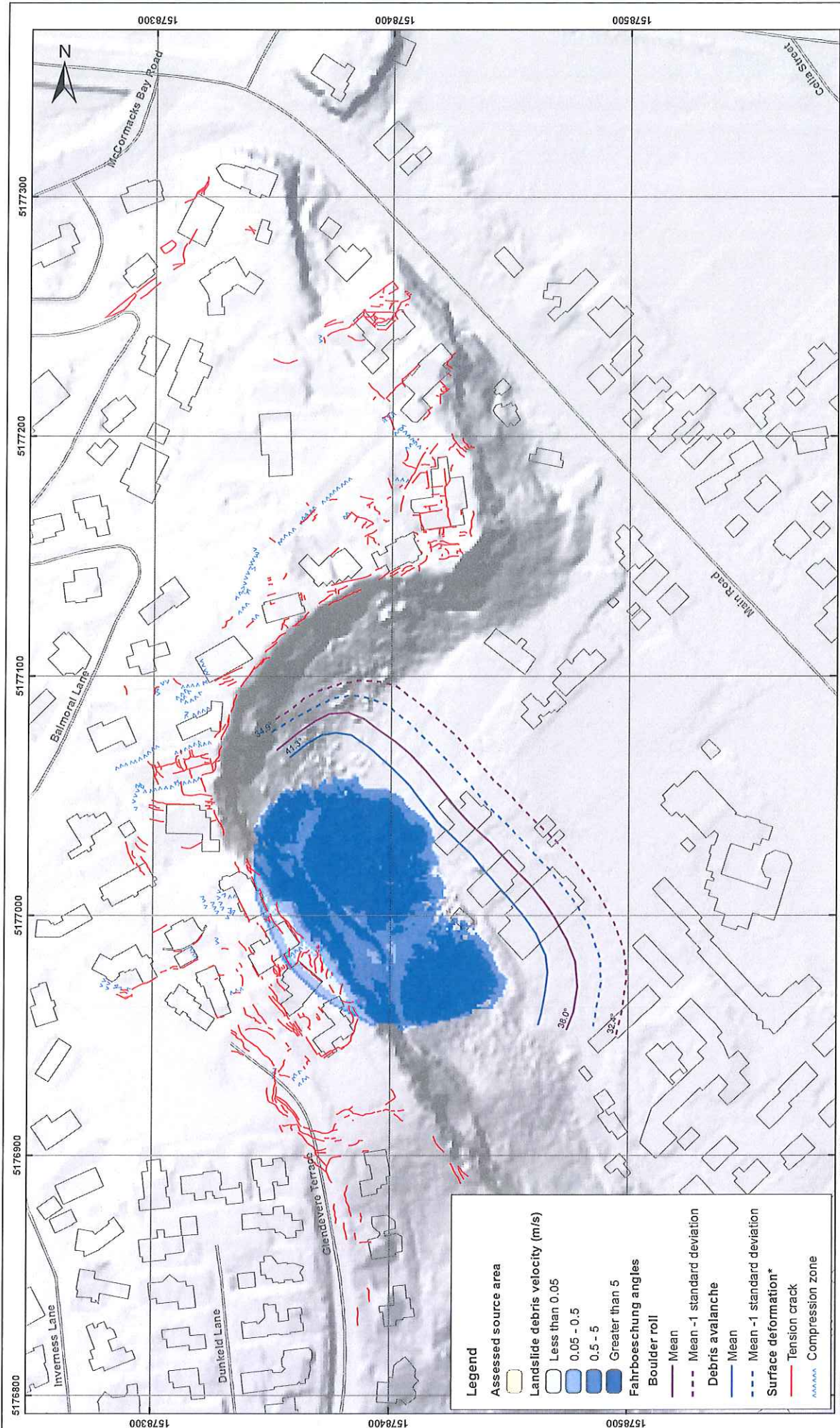


**A8 APPENDIX 8: RAMMS MODELLING RESULTS FOR SOURCE AREAS 1–
3, ESTIMATED LANDSLIDE RUNOUT VELOCITY**



SCALE BAR: 0 50 100 m				ESTIMATED LANDSLIDE RUNOUT VELOCITY Source 1 - Upper Volume (32,000 m ³)		APPENDIX 8	
EXPLANATION: * Taken from report CR2012/317 Background shade model derived from NZAM post earthquake 2011c (July 2011) LIDAR survey resampled to a 1 m ground resolution. Roads and building footprints and types provided by Christchurch City Council (20/02/2012). PROJECTION: New Zealand Transverse Mercator 2000				Map 1			
				Redcliffs - Port Hills Christchurch		FINAL	
				REPORT: CR2014/78		DATE: August 2014	



Legend

Assessed source area

Landslide debris velocity (m/s)

Less than 0.05

0.05 - 0.5

0.5 - 5

Greater than 5

Fahrboeschung angles

Mean

Mean -1 standard deviation

Debris avalanche

Mean

Mean -1 standard deviation

Surface deformation*

Tension crack

Compression zone

SCALE BAR:
0 50 100 m

EXPLANATION:
* Taken from report CR2012/317
Background shade model derived from NZAM post earthquake 2011c (July 2011) LiDAR survey resampled to a 1 m ground resolution.
Roads and building footprints and types provided by Christchurch City Council (20/02/2012).
PROJECTION: New Zealand Transverse Mercator 2000

DRW:
BL, WR

CHK:
CM, FDP

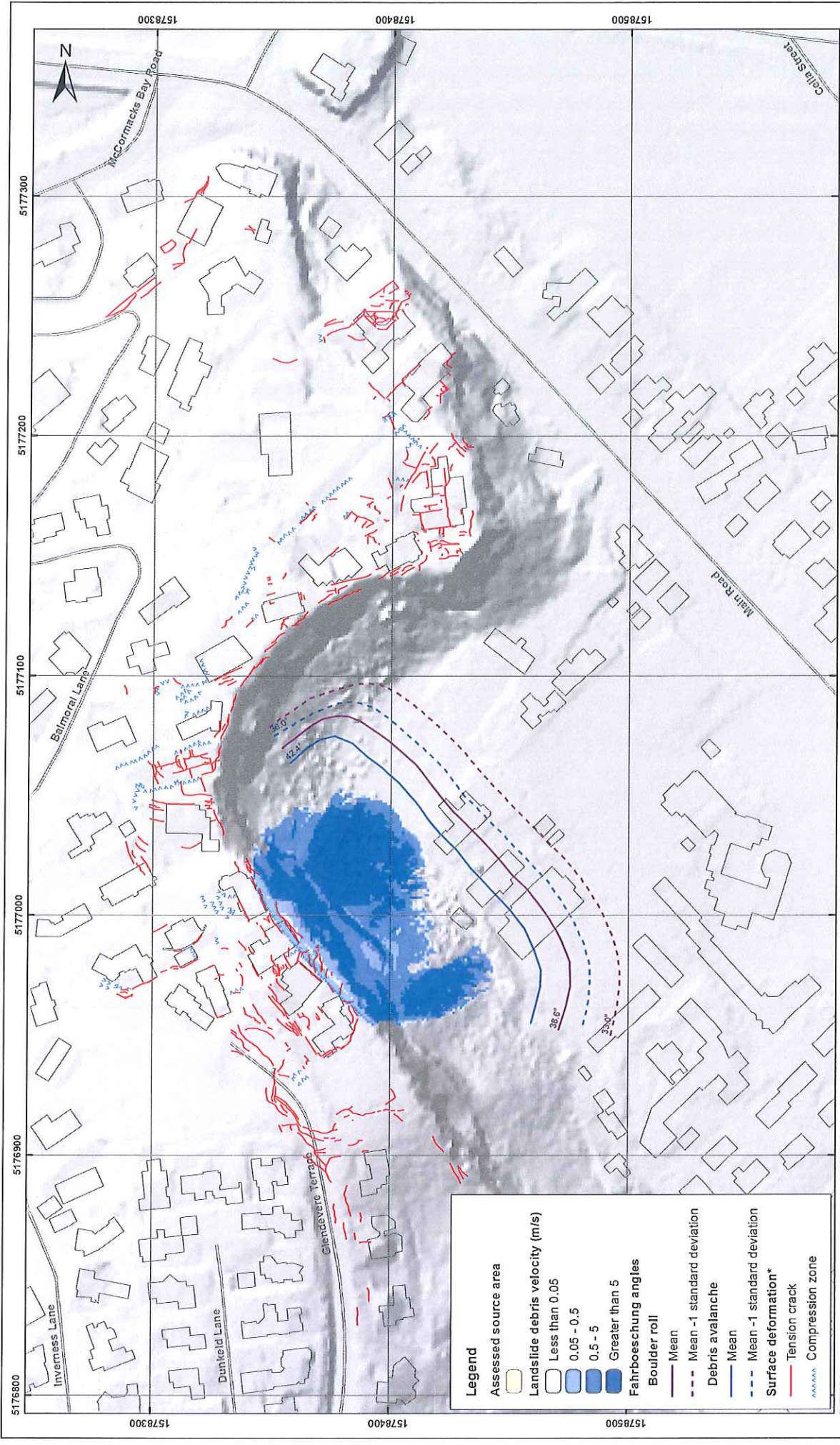
ESTIMATED LANDSLIDE RUNOUT VELOCITY
Source 1 - Middle Volume (12,800 m³)

Redcliffs - Port Hills
Christchurch

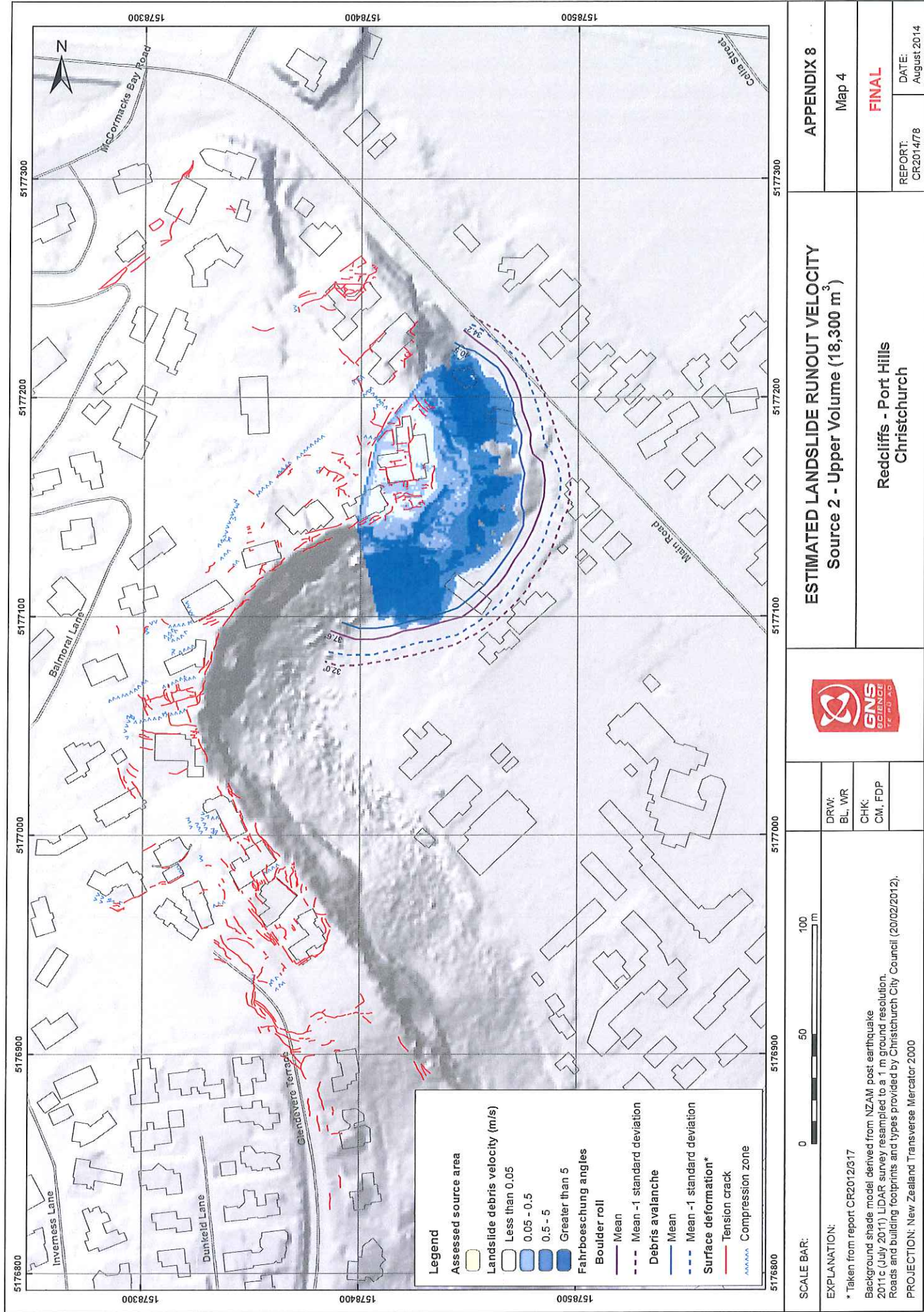
APPENDIX 8
Map 2

FINAL
REPORT:
CR2014/78

DATE:
August 2014



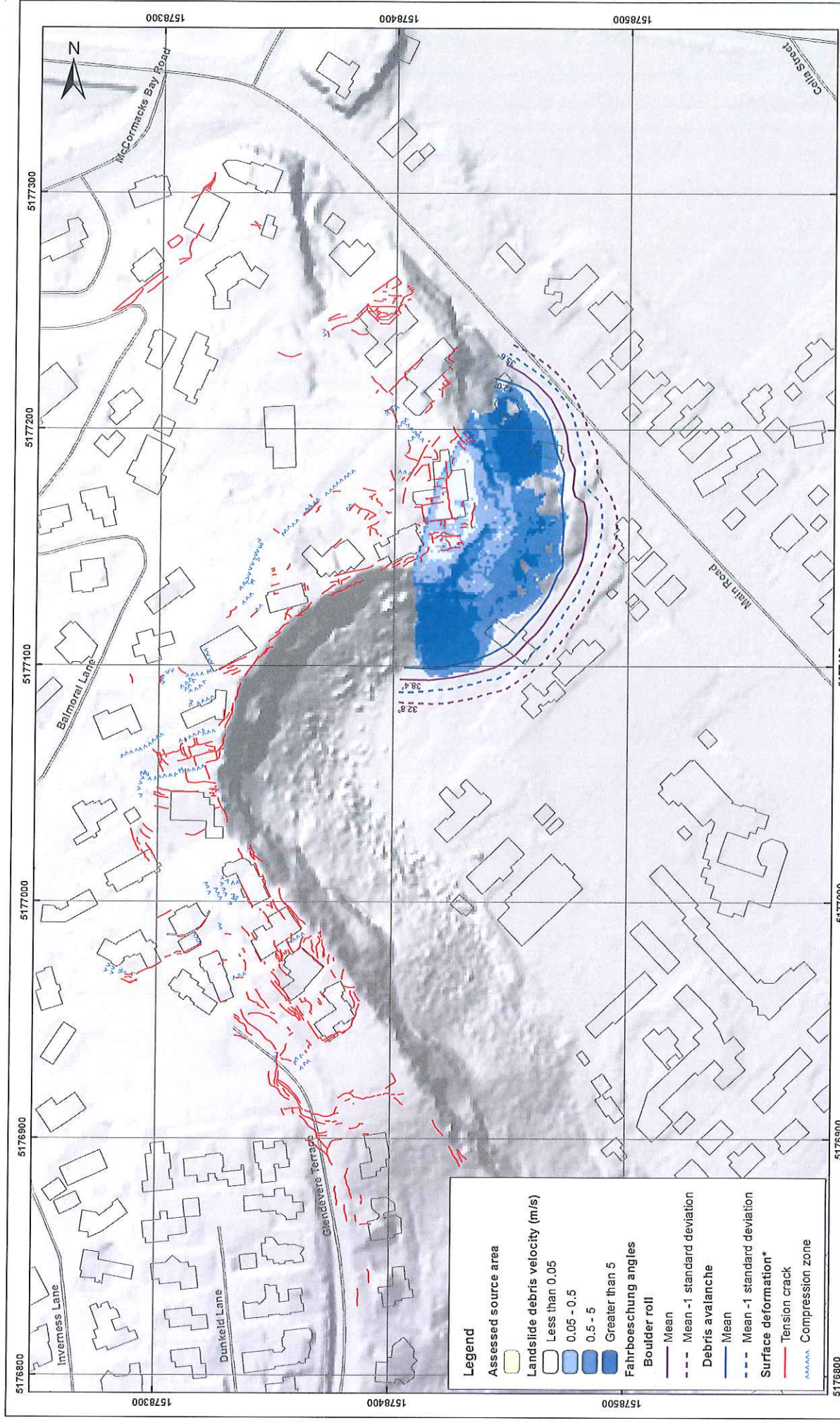
ESTIMATED LANDSLIDE RUNOUT VELOCITY Source 1 - Lower Volume (7,700 m³)		APPENDIX 8 Map 3	
Redcliffs - Port Hills Christchurch		REPORT: CR2014/78	DATE: August 2014
GNS SCIENCE TE PŪ AO		DRW: BL, WR	CHK: CM, FDP
EXPLANATION: * Taken from report CR2012/317 Background shade model derived from NZAM post earthquake 2011c (July 2011) LiDAR survey resampled to a 1 m ground resolution. Roads and building footprints and types provided by Christchurch City Council (20/02/2012). PROJECTION: New Zealand Transverse Mercator 2000		SCALE BAR: 0 50 100 m	



DRW:
BL, WR
CHK:
CM, FDP

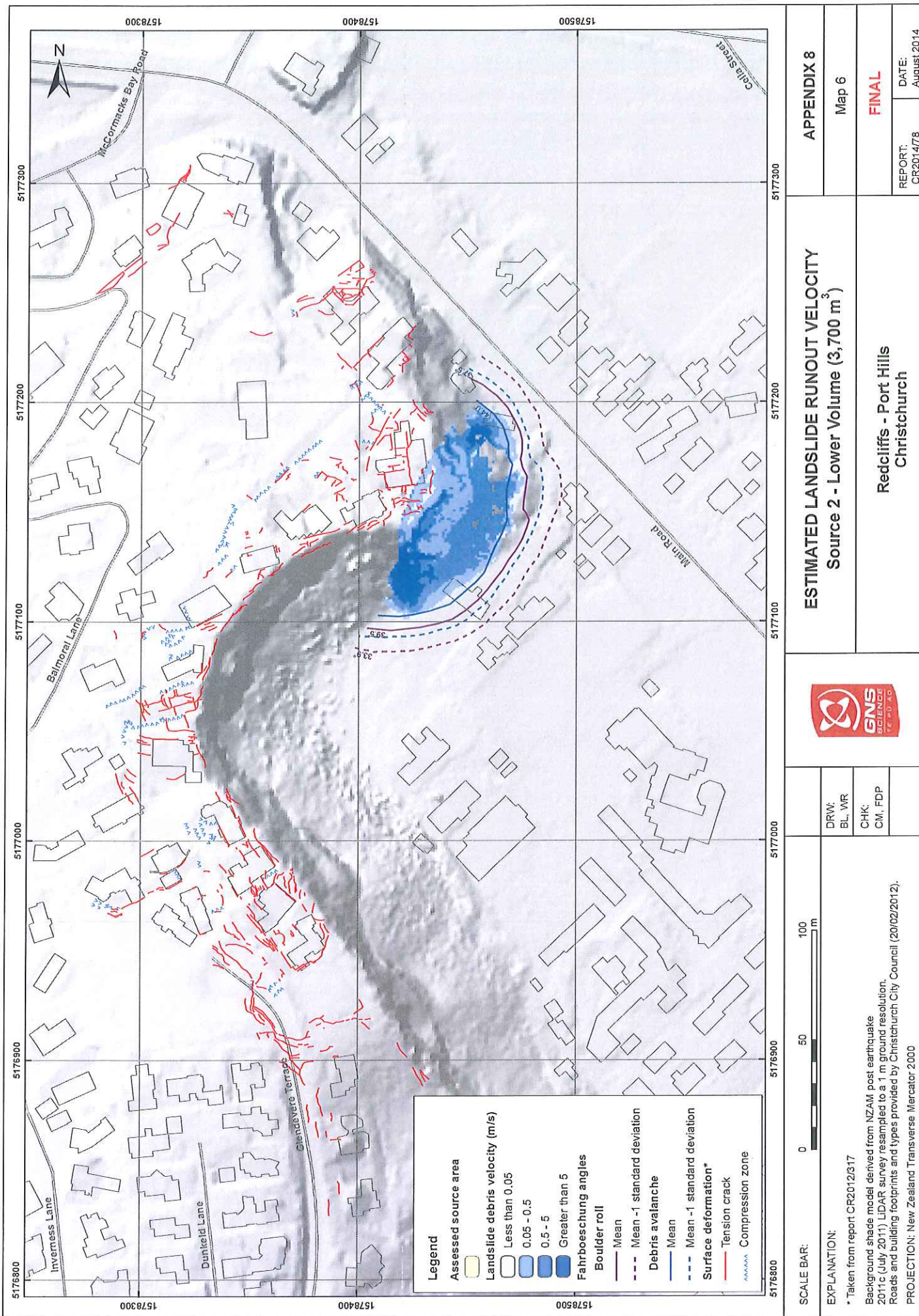
ESTIMATED LANDSLIDE RUNOUT VELOCITY
Source 2 - Upper Volume (18,300 m³)

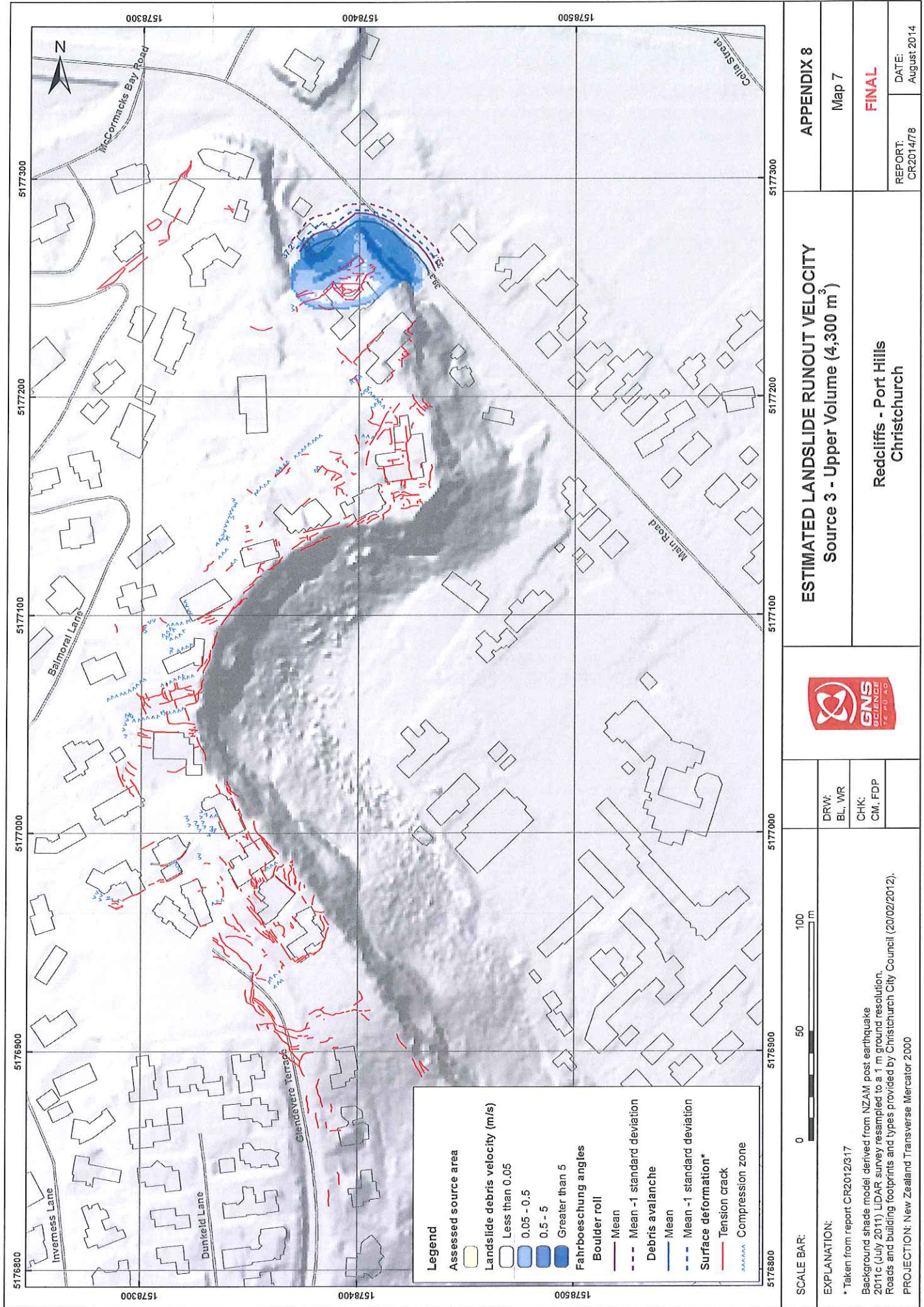
APPENDIX 8
Map 4
FINAL
REPORT: CR2014/78
DATE: August 2014



- Legend**
- Assessed source area
 - Landslide debris velocity (m/s)
 - Less than 0.05
 - 0.05 - 0.5
 - 0.5 - 5
 - Greater than 5
 - Fahrboeschung angles
 - Boulder roll
 - Mean
 - Mean -1 standard deviation
 - Debris avalanche
 - Mean
 - Mean -1 standard deviation
 - Surface deformation*
 - Tension crack
 - Compression zone

SCALE BAR: 0 50 100 m		DRW: BL, WR	
EXPLANATION:		CHK: CM, FDP	
* Taken from report CR2012/317			
Background shade model derived from NZAM post earthquake 2011c (July 2011). LIDAR survey resampled to a 1 m ground resolution. Roads and building footprints and types provided by Christchurch City Council (20/02/2012).			
PROJECTION: New Zealand Transverse Mercator 2000			
GNS SCIENCE			
ESTIMATED LANDSLIDE RUNOUT VELOCITY		APPENDIX 8	
Source 2 - Middle Volume (9,400 m³)		Map 5	
Redcliffs - Port Hills		FINAL	
Christchurch		REPORT: CR2014/78	DATE: August 2014



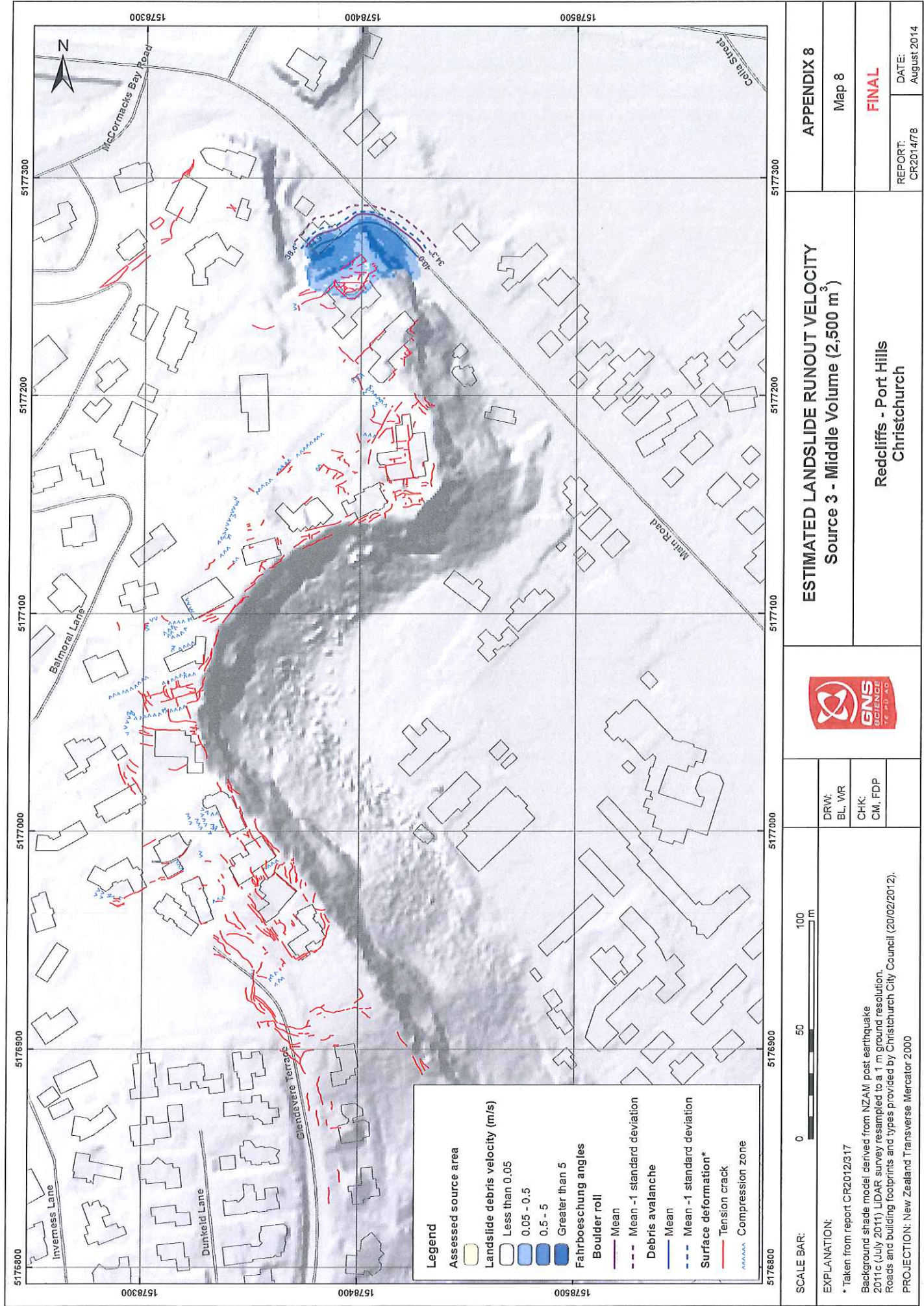


DRW: BL, WR
CHK: CM, FDP

ESTIMATED LANDSLIDE RUNOUT VELOCITY
Source 3 - Upper Volume (4,300 m³)

Redcliffs - Port Hills
Christchurch

APPENDIX 8
Map 7
FINAL
REPORT: CR2014/78
DATE: August 2014



DRW:
BL, WR
CHK:
CM, FDP

SCALE BAR: 0 50 100 m

EXPLANATION:

* Taken from report CR2012/317
Background shade model derived from NZAM post earthquake 2011c (July 2011) LIDAR survey resampled to a 1 m ground resolution. Roads and building footprints and types provided by Christchurch City Council (20/02/2012).
PROJECTION: New Zealand Transverse Mercator 2000

ESTIMATED LANDSLIDE RUNOUT VELOCITY
Source 3 - Middle Volume (2,500 m³)

Redcliffs - Port Hills
Christchurch

APPENDIX 8

Map 8

FINAL

REPORT:
CR2014/78

DATE:
August 2014

