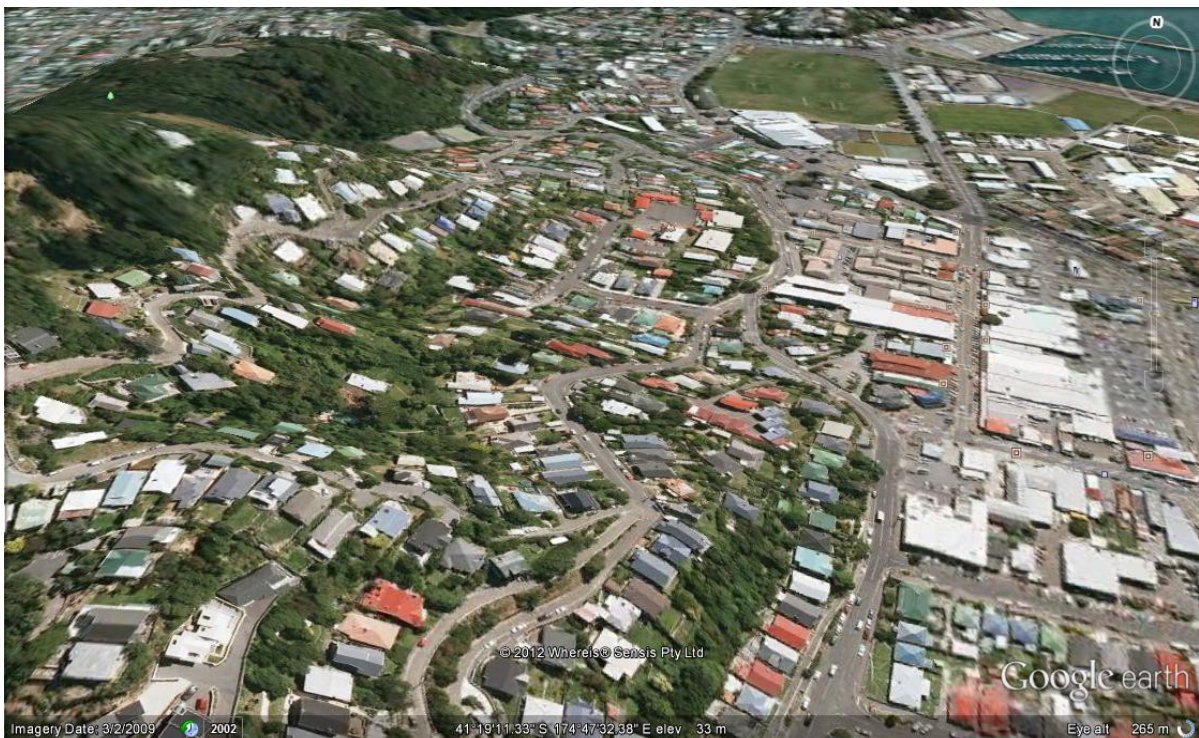




# Searching the Suburban Environment



## References

Urban Search Managing Missing Person Searches in the Urban Environment by Christopher S. Young and John Wehbring dbS Productions LLC , 2007

Lost Person Behaviour – A Search and Rescue Guide on Where to Look – for Land, Air and Water by Robert J. Koester dbS Productions LLC 2008

Urban Search Management for the Initial Response Commander 2004 (for missions involving persons in urban areas). M. Cook, G. Kerr, R. LaVallla, C. Long, R. Smith, S. Smith. ERI Canada Inc. ERI International Inc.

Man-Trackers & Dog Handlers in Search and Rescue. Basic Guidelines and Information. G. Fuller, E. Johnson, R.J. Koester. dBS Productions, Virginia, 2000.

Syrotuck, William (2000-12-01). Analysis of Lost Person Behavior. Barkleigh Productions Inc.. Kindle Edition.

## Acknowledgements

Course developed by Clarke Creek Consultants Limited for Tai Poutini Polytechnic.

Subject matter experts: NZ Police members and LandSAR.

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<b>Title:</b>	<b>SAR107 Apply Lost Person Behaviour theories in a suburban environment</b>
<b>Version:</b>	4
<b>Revision Date:</b>	December 2013
<b>Level:</b>	5
<b>Credit:</b>	5
<b>Purpose:</b>	People credited with this standard are able to: apply Lost Person Behaviour (LPB) to determine search strategies and potential find locations in a suburban search situation; and describe strategies for managing the subject of a suburban search operation.
<b>Entry information:</b>	Open.
<b>Grading system:</b>	Tai Poutini Polytechnic Grading System 1.
<b>Special notes:</b>	<p>Assessment of this standard may occur in a real or simulated search and rescue environment.</p> <p>Definitions:</p> <p><i>Lost Person Behaviour (LPB)</i> is the statistical behaviour of previously lost persons(s). LPB is synonymous with Lost Subject Behaviour (LSB), Missing Person Behaviour (MPB or MisPer).</p> <p>A <i>lost subject/person</i> is defined as someone who is not aware of their current location and does not possess the skills to reorientate themselves.</p> <p>A <i>missing subject/missing person</i> is someone who is reported missing by others, and may or may not also be lost. Examples are run-a-ways, suicidal people, Alzheimer’s sufferers and abductees.</p> <p><i>Suburban environment</i> refers to any habitualised area which may include a mixture of housing, industrial and retails areas. More commonly known as a town or city and may also include recreation or park areas – i.e.: small pockets of “wilderness” with a town or city boundary.</p> <p>The term <i>suburban search</i> is used to differentiate the context of searching in a wilderness environment from Urban Search and Rescue (USAR) which includes the search and evacuating of demolished buildings and ruins. At the time of a SAR operation it may not be clear as to whether the subject is lost, missing, overdue or injured/ill. For the purposes of this standard “<i>lost</i>” is defined more from the searchers perspective than the subjects: the searcher is unable to find the subject, hence the subject is lost. As such the term ‘<i>lost subject</i>’ is used to incorporate all subjects – regardless of whether they are technically lost, missing or otherwise indisposed.</p> <p>The primary reference for this standard is <i>Lost person</i></p>

*behaviour: A search and rescue guide on where to look – for land, air and water* by R. J. Koester, 2008.

**AMAP number:** TPPAMAP01

**Elements and Performance Criteria:**

**Element 1:**

Apply Lost Person Behaviour (LPB) to determine search strategies and potential find locations in a suburban search situation.

Range: LPB categories includes but are not limited to: children, despondents, suicides, dementia subjects.

**Performance Criteria:**

- 1.1 Lost Person Behaviour is described for selected categories.
- 1.2 Potential find locations for a lost/missing subject are identified by subject type.
- 1.3 Suitable search strategies are identified for selected Lost Person Behaviour categories.
- 1.4 Lost Person Behaviour is applied to a given suburban search situation to determine suitable search strategies and potential find locations.

**Element 2:**

Describe strategies for managing the subject of a suburban search operation.

Range: categories include but are not limited to: children, despondents, dementia.

**Performance Criteria:**

- 2.1 Strategies for approaching a subject are described according to subject type.
- 2.2 Strategies for managing a subject are described according to subject type.

**Title:** SAR108 Operate as a member of a suburban search team

**Version:** 4

**Revision Date:** December 2013

**Level:** 5

**Credit:** 7

**Purpose:** People credited with this standard are able to: explain the relationship between wilderness and suburban search operations; analyse environmental factors impacting on a given suburban search situation; interpret legal constraints applicable to suburban search operations; interview a member of the public as a

member of a suburban search team; record search data as a member of a suburban search team; manage risk as a as a member of a suburban search team; and conduct a property search as a as a member of a suburban search team.

**Entry information:**

Open.

**Grading system:**

Tai Poutini Polytechnic Grading System 1.

**Special notes:**

Assessment of this standard may occur in a real or simulated search and rescue environment.

Definitions:

*Probability of Detection (POD)* is the chance of finding the subject or clues given that they are in the area being searched.

*Suburban environment* refers to any habitualised area which may include a mixture of housing, industrial and retails areas. More commonly known as a town or city and may also include recreation or park areas – i.e.: small pockets of “wilderness” with a town or city boundary.

The term *suburban search* is used to differentiate the context of searching in a wilderness environment from Urban Search and Rescue (USAR) which includes the search and evacuating of demolished buildings and ruins.

*Wilderness environment* refers to any natural environment, such as fields and plains, bush, forests, rivers and riverbeds, hills and mountains and differs from an urban and/or suburban environments.

The primary references for this standard are *Lost person behaviour: A search and rescue guide on where to look – for land, air and water* by R. J. Koester, 2008, and *Urban search: Managing missing person searches in the urban environment*, 2007 by C. Young and J. Wehbring.

**AMAP number:**

TPPAMAP01

**Elements and Performance Criteria:****Element 1:**

Explain the relationship between wilderness and suburban search operations.

**Performance Criteria:**

- 1.1 Differences between wilderness and suburban search operations are defined in terms of population density and numbers and relevance of clues.
- 1.2 Search methods are compared and contrasted for wilderness and suburban search operations.



- 1.3 The advantages and disadvantages are identified for different search methods.  
Range: methods include but are not limited to: tracking, purposeful wandering, sound line, sound light line.
- 1.4 Circumstances are identified in which each search method is best employed.  
Range: methods include but not limited to: tracking, purposeful wandering sound line, sound light line.

**Element 2:**

Analyse environmental factors impacting on a given suburban search situation.

Range: factors include but are not limited to: buildings, drainage systems, multiple irrelevant clues.

**Performance Criteria:**

- 2.1 Environmental factors are analysed in terms of impact on the search.
- 2.2 Methods of reducing the impact of environmental factors are developed.

**Element 3:**

Interpret legal constraints applicable to suburban search operations.

Range: constraints may include but are not limited to: legislation, local bylaws, Crimes Act.

**Performance Criteria:**

- 3.1 Legislation relevant to searching private/commercial property is described.
- 3.2 Legislation relevant to preventing public access to or egress from a search area is described.
- 3.3 Legislation relevant to searching vehicles is described.
- 3.4 Strategies in response to legislation are identified.

**Element 4:**

Interview a member of the public as a as a member of a suburban search team.

Range: may include but is not limited to: property owners, pedestrians, workers.

**Performance Criteria:**

- 4.1 Introduction of field team member is in accordance with interview protocols.
- 4.2 Form of questioning is in accordance with interview protocols.
- 4.3 Privacy/restriction of information is managed in accordance with interview protocols.
- 4.4 Interpersonal skills are demonstrated in accordance with interview protocols.  
Range: may include but are not limited to: manners, body language, empathy.

**Element 5:**

Record search data as a member of a suburban search team.

**Performance Criteria:**

- 5.1 Interview data is collected, recorded and reported on a suburban search form.
- 5.2 Probability of detection (POD) rates are determined, recorded and reported.
- 5.3 Areas requiring further search are identified, recorded and reported.

**Element 6:**

Manage risk as a member of a suburban search team.

Range: risk may include but is not limited to: dogs, aggressive occupiers.

**Performance Criteria:**

- 6.1 Strategies to minimise risk are described.
- 6.2 Strategies to minimise risk are applied to a suburban search situation.

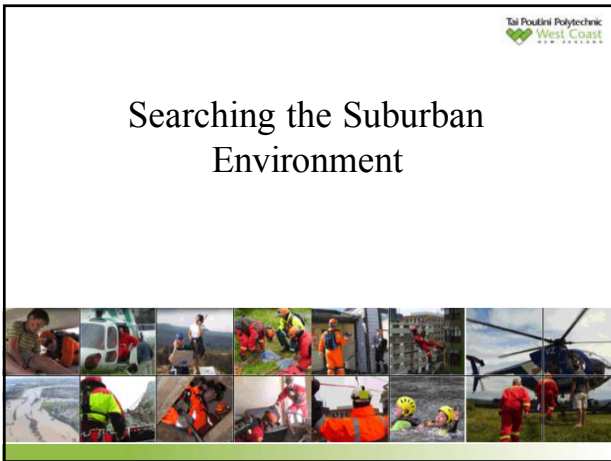
**Element 7:**

Conduct a property search as a member of a suburban search team.

Range: at least two of: residential, commercial and/or industrial, publicly-owned.

**Performance Criteria:**

- 7.1 Procedures to maximise POD are described.
- 7.2 Procedures to maximise POD are applied.  
Range: a day and a night search scenario.
- 7.3 Tracking skills are utilised in a suburban environment.



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## SAR 107 and SAR 108

- SAR 107: Apply Lost person behaviour theories in a suburban environment
- SAR 108: Operate as a member of a suburban search team

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## Suburban - Wilderness

**Wilderness environment** – any natural area  
– lakes, rivers, forests, tussock.....

**Suburban environment** – any habited area

**Exercise: the suburban environment can be categorised as residential and non residential**

In pairs: list the types of structures, facilities and amenities found in both residential and non-residential suburban environments.

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## Suburban Environments

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### Suburban Environment Key Factors

- Significant numbers of people – population density.
- Developed areas with buildings and facilities.
- Complex 3D nature.
- Drainage systems.
- Roads and easy means of travel.
- Large numbers of irrelevant clues.
- Diverse risks and hazards.

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### Lost Person Behaviour



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### Lost in an urban environment

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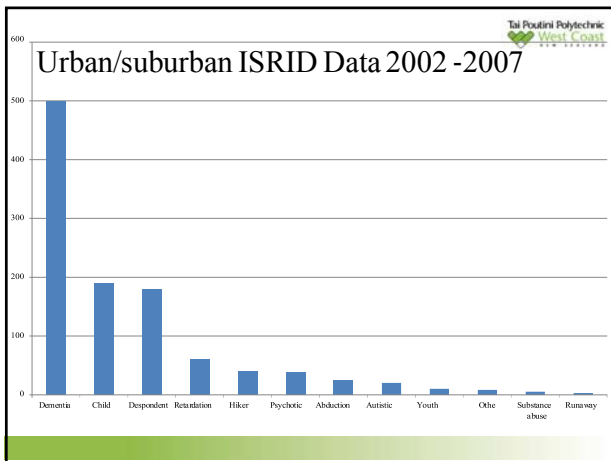
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**Cognitive state of missing people in urban/suburban environments**

**Altered cognitive skills – 73% of cases:**

- Dementia
- Depression (despondent)
- Mental retardation
- Mental illness (psychotic)
- Autism
- Substance abuse



**Not fully developed cognitive abilities and decision making – 18% of cases**

- Children age 1-3, age 4-6 and age 7-12

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- Investigative in nature – 4%
  - Runaway
  - Abduction
- Hikers–4%!

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## New Zealand Context

- Statistics from 2005-2009
- 2819 incidents.
- 31% in suburban/urban setting
- High rates of psychological incidents (despondent and suicides) in Northland and Auckland
- Males over represented in dementia, 65+ age group and despondents
- Prediction to 2030 – great increase in number of dementia subjects in Marlborough, Northland, Nelson, Bay of Plenty, Taranaki and Auckland.

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## Missing Person Matrix

	Mobile	Immobile
Responsive	MR	IR
Unresponsive	MU	IU

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## Terms used in search and rescue

- LKP
- PLS
- IPP
- 300m circle
- Theoretical search area
- POD

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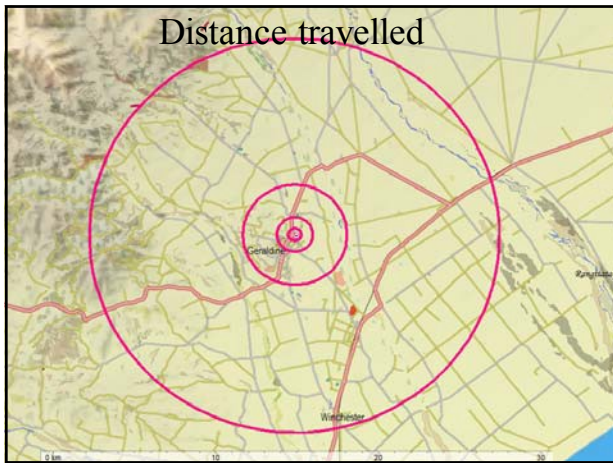
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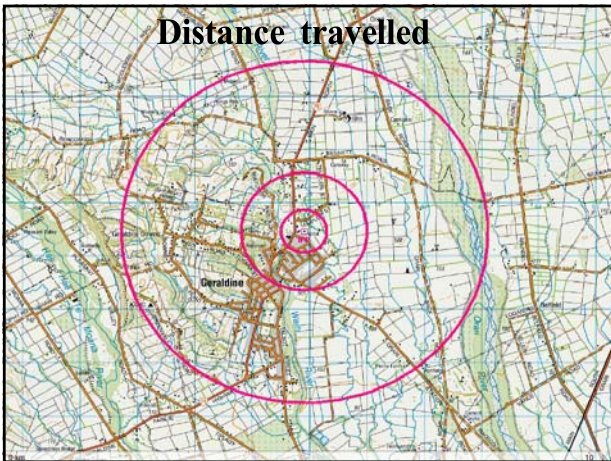
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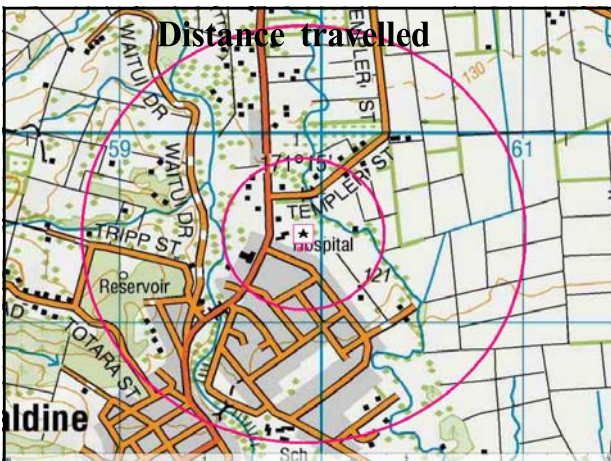
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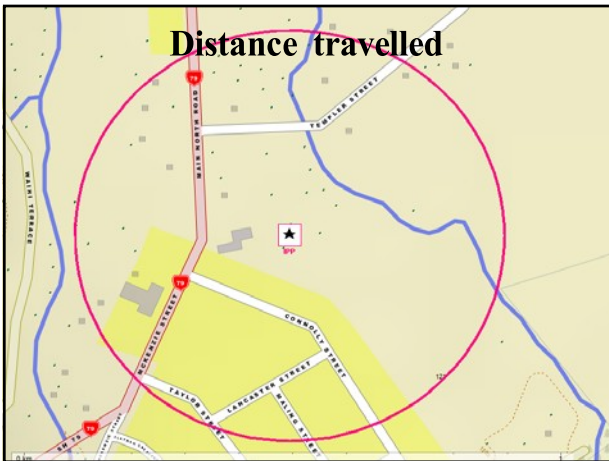
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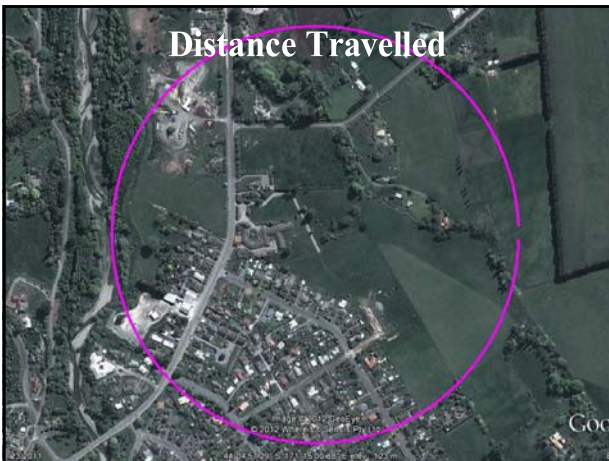
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### Area searched

Percentile	km from IPP	Area to be searched km <sup>2</sup>
25%	0.4	
50%	1.1	
75%	3.2	
95%	12.6	

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## Other information

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## Types of Lost Persons

- Group exercise
- Use the text book –Suburban Search - fill in the LPB Table for:
  - Dementia
  - Despondent – include suicides
  - Children – age 4-6
  - Mental illness
  - Children age 7-12

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Dementia				
<b>Likely Behaviour</b> <i>List at least 5 points</i>				
<b>Likely find locations</b>	1.	2.	3.	
<b>Distance travelled (km)</b>	25%	50%	75%	95%
<b>Search techniques and strategies</b> <i>List at least 8 points</i>				

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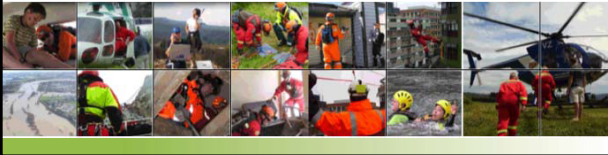


<b>Method</b>	<b>Brief description</b>	<b>When</b>	<b>Where</b>
Sound sweep	Sound attraction over large areas. Responsive subject.	Daytime	Through large areas of country
Purposeful wandering	Visual search for clues or unresponsive subject.	Daytime	Areas of high probability
Sound line	Sound attraction over large areas. Responsive subject.	Daytime	From a linear feature
Sound light line	Sound and light attraction over large areas. Responsive subject.	Night-time	From a linear feature
Sound light sweep	Sound and light attraction over large areas. Responsive subject.	Night-time	Through large areas of country
Dogs	Air scenting/ tracking/ human remains/ avalanche.	Anytime	Anywhere with appropriately trained dog

<b>Method</b>	<b>Brief description</b>	<b>When</b>	<b>Where</b>
Passive Search/Confinement	Road cones, string lines combined with written notes. Packs with supplies in plus note, etc. Confinement by persons - stationary or mobile.	Anytime	Anywhere
Trackers	Skilled searchers identifying and reading sign.	Anytime	Anywhere
Investigation	Interviews, clue identification and processing	Anytime	Anywhere
Grid/contact search	Detailed close quarter search	Anytime	Anywhere
Door to door canvass	Systematic door to door interviews and leaflet drops	Anytime	Urban/suburban
Building search	Systematic search of building interiors	Anytime	Inside buildings
Grounds/ garden search	Systematic search of grounds	Anytime	Residential areas

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## Suburban search techniques




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## Suburban Search - Gear

- ID Cards
- High visibility clothing – SAR logos
- Notebook and pens – clip board
- Torch (day and night)
- Radio and phone
- Flagging tape
- Gloves and face masks (for bin/skip searching)
- Searcher food and water

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## House to House – search or canvass

**Level I** ( Reference – Young and Wehbring, Urban Search)  
Interview occupants, search garden, sheds etc, request to search interior

**Level II**  
Householder interview with request for resident to search their property

**Level III**  
Leave flyer – subject description and request for resident to search their property.

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## Door to Door

Group Exercise  
Closed book exercise – put the text away!

Develop a set of guidelines for conducting door to door enquires.

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## Interviewing Basics

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## Some things to avoid

- Closed questions.
- Forced Choices.
- Talking too much.
- Suggestive/Leading questions (assumes/ suggests the answer)
- Negative (“you don’t know his name do you”)

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## Interviewing – group exercise

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## Property Search: Grounds, yards and gardens

- Be hazard aware
- Wear identifiable clothing
- Carry ID
- Gain owner permission
- Obtain keys for locked areas
- People get locked in
- Use STOPPER – plan your search assignment
- Draw a sketch map
  - Identify any unsearched areas
  - Anything for further attention
- Be systematic and thorough
  - Look in every improbable corner

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## Environment and Hazards – Group exercise



1. Residential housing and gardens
2. Public buildings and yards
3. Industrial buildings and yards
4. Abandoned/derelict buildings
5. Abandoned/derelict sections
6. Parks and reserves

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## Door to Door Canvass

- Group exercise

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## Building Search

- Complex job - takes time
- Get access throughout (Keys!)
- People get locked in
- Obtain owner permission
- Carry torches
- Plan a systematic search
- Be thorough

**Children and the elderly may occupy very small spaces**



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## Building and Grounds Search

- Group exercise

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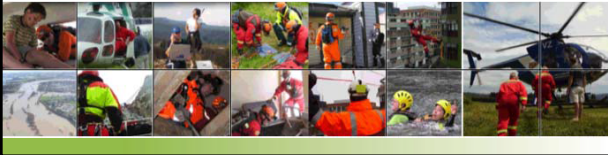
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## Searching the Suburban Environment

### The Law




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## Legislation

- Police Act
- Crimes Act
- Trespass Act
- Search and Surveillance Act 2012

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## Operationally

- Ideally have one police person / team
- You can approach any house or building to make an enquiry
- You can search anywhere with owner permission
- You can search gardens and grounds if owner absent
- If challenged leave immediately and record
- Police can force entry if required
- **Take your guidance from the police**

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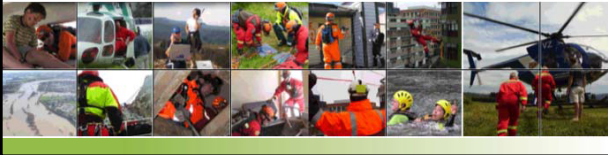
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## Searching the Suburban Environment

The wheel



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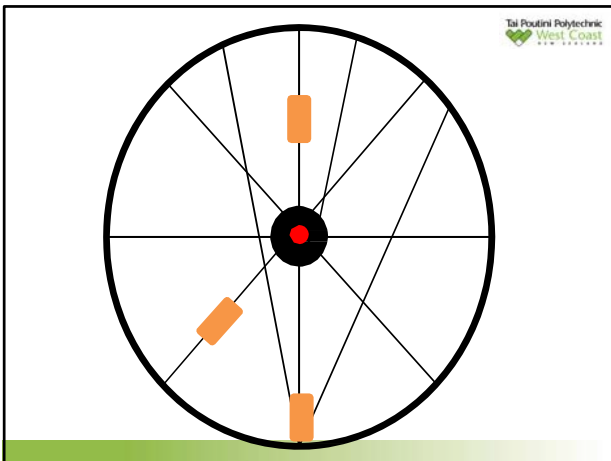
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## Suburban Search

- IPP
- Close in phenomena - 300m circle
- Linear features – roads, paths, drainage, sewers etc.
- Attractors – statistical, subjective
- Decision points
- Confinement

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## Attractors


- Statistical
- Subjective




Lost Person Behavior



Urban Search





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## 300m Close in Phenomena

21 Bulteel Street  
New Plymouth.



IPP



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## Confinement



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## Investigation

The best way to find a missing person in the urban environment is NOT to send out an armada of search teams and personnel hoping to find clues, but to place heavy emphasis on the initial investigation and prepare a search plan that focuses on places the person is likely to be found.

(Young and Wehbring, Urban Search)

**SAR: intelligence led and evidence based.**

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**DOG MISSING**  
**REWARD**

DISAPPEARED FROM THE DUNEWOOD BAY BEACH,  
**KOKO** IS A SHEPARD / COLLIE MIX, VERY FRIENDLY,  
BUT ALMOST DEAF SO MAY NOT RESPOND TO HIS NAME.

PLEASE CALL WITH ANY INFORMATION  
LAUREL (06) 293 3714  
ALEX (017) 747 2241

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## Dogs

TO INITIATE SAR DIAL 110

**SEARCH & RESCUE**  
**LAND SAR**  
SEARCH DOGS

*"Trust me mate, working a dog in town is bloody complicated."*  
*Iain Watson – LandSAR FSO and ex police-dog handler*

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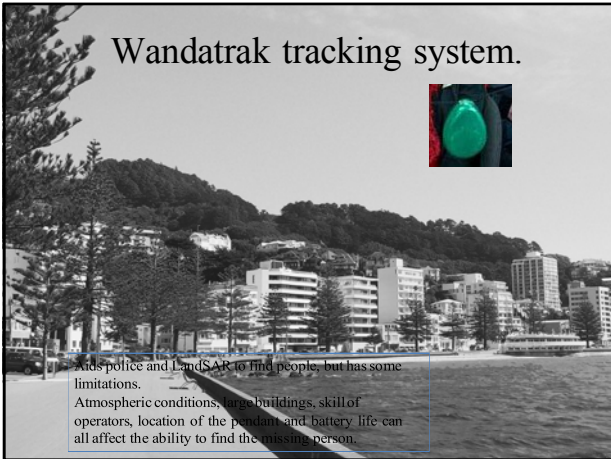
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Wandatrak tracking system.



Kids police and LandSAR to find people, but has some limitations.  
 Atmospheric conditions, large buildings, skill of operators, location of the person, and battery life can all affect the ability to find the missing person.

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Bikes?

Use of bicycle teams in Suburban SAR:

- Recommended by Cook, Kerr, LaVella... Young and Wehbring

Used in your area?


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Suburban Search: Critical Factors

- Hazards/Safety
  - Dogs
  - Aggressive house holders
- 300m around IPP/PLS/PLK
  - DPs
  - Trackers
  - Dogs
- Investigation
  - House to house canvas
  - Conduct interviews
  - Document all clues
- Media/Flyers
- Property search
  - Hasty/thorough
  - Residential
  - Industrial
  - Public/private
- Confinement
  - Travel corridors
  - Observation/covert
- Attractors
  - Statistical
  - subjective
- Bike teams?




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