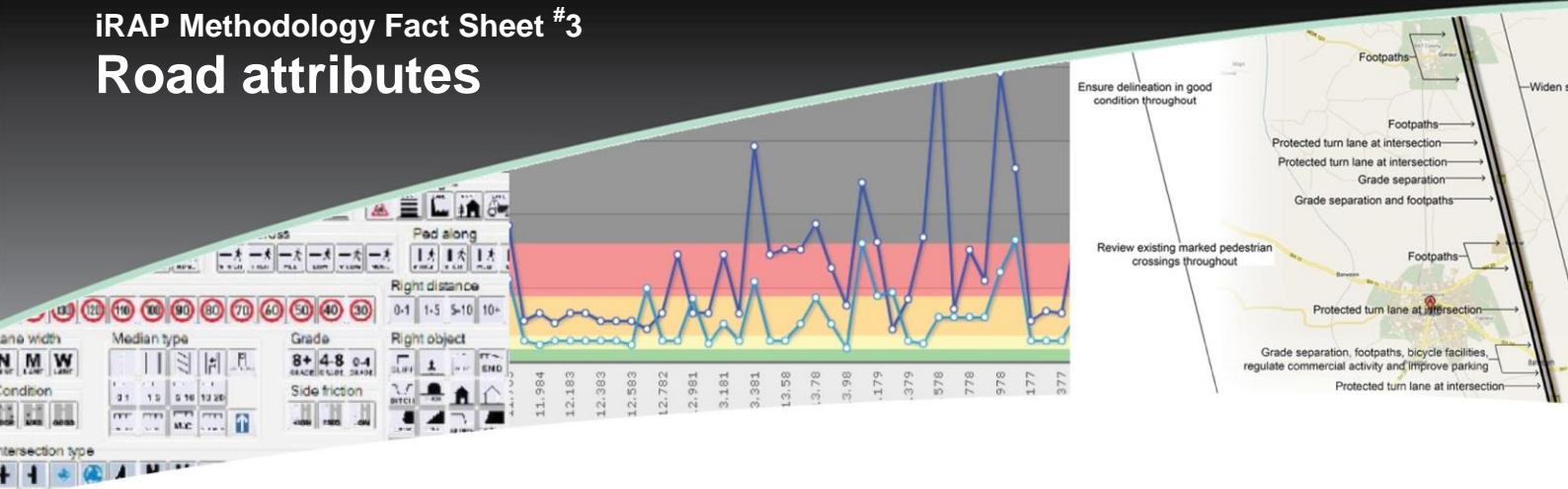


iRAP Methodology Fact Sheet #3

Road attributes



This factsheet is part of a series that describes the iRAP methodology. It lists the road attributes included in iRAP assessments.

Related documents

This factsheet should be read in conjunction with:

- Other factsheets in the [iRAP Methodology Fact Sheet](#) series.
- [iRAP Road Attribute Risk Factor Fact Sheets](#).
- [Road Safety Toolkit](#).

Introduction

Road attribute data is collected during road inspections, which have two parts:

1. Road surveys, which involve the collection of images (or videos) of the road, location data (GPS) and distance data.
2. Road coding, which involves recording road attribute categories using survey images (or video).

Descriptive road attributes (such as road name and section) and attributes that influence the *likelihood* and *severity* of the most common types of serious crashes for vehicle occupants, motorcyclists, pedestrians and bicyclists are collected.

Attributes are recorded for each 100 metre segment of road. In a situation where the condition of an attribute varies within a 100 metre segment, the worst case (from a road safety perspective) is recorded. For example, if the first 50 metres of a 100 metre segment has roadside safety barriers and the second 50 metres has roadside hazards, the 100 metre segment is coded as having roadside hazards.

The table below lists the road attributes recorded during iRAP assessments. Further information on the way in which attributes are recorded is available in the *Star Rating and Investment Plan Coding Manual* and the relationship between an attribute and risk of death or serious injury is described in the [iRAP Road Attribute Risk Factor Fact Sheets](#).

Road attributes

Attribute	Item	Category ID	Category
1	Coder name	NA	NA
2	Coding date	NA	NA
3	Road survey date	NA	NA

Attribute	Item	Category ID	Category
4	Image reference	NA	NA
5	Road Name	NA	NA
6	Section	NA	NA
7	Distance	NA	NA
8	Length	NA	NA
9	Latitude	NA	NA
10	Longitude	NA	NA
11	Landmark	NA	NA
12	Comments	NA	NA
13	Carriageway	1	Carriageway A of a divided road
		2	Carriageway B of a divided road
		3	Undivided road
		4	Carriageway A of a motorcycle facility
		5	Carriageway B of a motorcycle facility
14	Upgrade cost	3	High
		2	Medium
		1	Low
15	Motorcycle observed flow	1	None
		2	1 motorcycle
		3	2 to 3 motorcycles
		4	4 to 5 motorcycles
		5	6 to 7 motorcycles
		6	8+ motorcycles
16	Bicycle observed flow	6	8+ bicycles
		5	6 to 7 bicycles
		4	4 to 5 bicycles
		3	2 to 3 bicycles
		2	1 bicycle
		1	None
17	Pedestrian observed flow across the road	6	8+ pedestrians across the road
		5	6 to 7 pedestrians across the road
		4	4 to 5 pedestrians across the road
		3	2 to 3 pedestrians across the road
		2	1 pedestrian across the road
		1	None
18	Pedestrian observed flow along the road driver-side	6	8+ pedestrians along driver-side
		5	6 to 7 pedestrians along driver-side
		4	4 to 5 pedestrians along driver-side
		3	2 to 3 pedestrians along driver-side
		2	1 pedestrian along driver-side

Attribute	Item	Category ID	Category
		1	None
19	Pedestrian observed flow along the road passenger side	6	8+ pedestrians along passenger-side
		5	6 to 7 pedestrians along passenger-side
		4	4 to 5 pedestrians along passenger-side
		3	2 to 3 pedestrians along passenger-side
		2	1 pedestrian along passenger-side
		1	None
20	Land use - drivers side	6	Educational
		4	Commercial
		7	Industrial and manufacturing
		3	Residential
		2	Farming and agricultural
		1	Undeveloped areas
		5	Not Recorded
21	Land use - passenger side	6	Educational
		4	Commercial
		7	Industrial and manufacturing
		3	Residential
		2	Farming and agricultural
		1	Undeveloped areas
		5	Not Recorded
22	Area type	2	Urban
		1	Rural
23	Speed limit	25	>=150km/h
		23	140km/h
		21	130km/h
		19	120km/h
		17	110km/h
		15	100km/h
		13	90km/h
		11	80km/h
		9	70km/h
		7	60km/h
		5	50km/h
		3	40km/h
		1	<30km/h
		45	>=90mph
		43	80mph
		41	70mph
		39	60mph

Attribute	Item	Category ID	Category
		37	50mph
		35	40mph
		33	30mph
		31	<20mph
24	Motorcycle speed limit	25	≥150km/h
		23	140km/h
		21	130km/h
		19	120km/h
		17	110km/h
		15	100km/h
		13	90km/h
		11	80km/h
		9	70km/h
		7	60km/h
		5	50km/h
		3	40km/h
		1	<30km/h
		45	≥90mph
		43	80mph
		41	70mph
		39	60mph
		37	50mph
		35	40mph
		33	30mph
		31	<20mph
25	Truck speed limit	25	≥150km/h
		23	140km/h
		21	130km/h
		19	120km/h
		17	110km/h
		15	100km/h
		13	90km/h
		11	80km/h
		9	70km/h
		7	60km/h
		5	50km/h
		3	40km/h
		1	<30km/h
		45	≥90mph
		43	80mph

Attribute	Item	Category ID	Category
		41	70mph
		39	60mph
		37	50mph
		35	40mph
		33	30mph
		31	<20mph
26	Differential speeds	2	Present
		1	Not present
27	Median type	11	Centre line
		14	Wide centre line (0.3m to 1m)
		10	Central hatching (>1m)
		8	Continuous central turning lane
		9	Flexible posts
		7	Physical median width 0 to <1m
		6	Physical median width 1 to <5m
		5	Physical median width 5 to <10m
		2	Safety barrier - concrete
		1	Safety barrier - metal
		12	Safety barrier - motorcycle friendly
		15	Safety barrier - wire rope
		4	Physical median width 10 to <20m
		3	Physical median width >=20m
		13	One way
28	Centreline rumble strips	1	Not present
		2	Present
29	Roadside severity - drivers side distance	1	0 to <1m
		2	1 to <5m
		3	5 to <10m
		4	>=10m
30	Roadside severity - drivers side object	10	Cliff
		11	Tree >=10cm dia.
		12	Sign, post or pole >=10cm dia.
		15	Unprotected safety barrier end
		5	Aggressive vertical face
		6	Upwards slope - (15° to 75°)
		8	Deep drainage ditch
		9	Downwards slope (> -15°)
		16	Large boulders >=20cm high
		13	Rigid structure/bridge or building
		14	Semi-rigid structure or building

Attribute	Item	Category ID	Category
		2	Safety barrier - concrete
		1	Safety barrier - metal
		4	Safety barrier - wire rope
		3	Safety barrier - motorcycle friendly
		7	Upwards slope - ($\geq 75^\circ$)
		17	No object
31	Roadside severity - passenger side distance	1	0 to <1m
		2	1 to <5m
		3	5 to <10m
		4	≥ 10 m
32	Roadside severity - passenger side object	10	Cliff
		11	Tree ≥ 10 cm dia.
		12	Sign, post or pole ≥ 10 cm dia.
		15	Unprotected safety barrier end
		5	Aggressive vertical face
		6	Upwards slope - (15° to 75°)
		8	Deep drainage ditch
		9	Downwards slope ($> -15^\circ$)
		16	Large boulders ≥ 20 cm high
		13	Rigid structure/bridge or building
		14	Semi-rigid structure or building
		2	Safety barrier - concrete
		1	Safety barrier - metal
		4	Safety barrier - wire rope
		3	Safety barrier - motorcycle friendly
		7	Upwards slope - ($\geq 75^\circ$)
		17	No object
33	Shoulder rumble strips	1	Not present
		2	Present
34	Paved shoulder - drivers side	4	None
		3	Narrow (≥ 0 m to < 1.0 m)
		2	Medium (≥ 1.0 m to < 2.4 m)
		1	Wide (≥ 2.4 m)
35	Paved shoulder - passenger side	4	None
		3	Narrow (≥ 0 m to < 1.0 m)
		2	Medium (≥ 1.0 m to < 2.4 m)
		1	Wide (≥ 2.4 m)
36	Intersection type	8	4-leg unsignalised with no protected turn lane
		17	Mini roundabout
		7	4-leg unsignalised with protected turn lane

Attribute	Item	Category ID	Category
		10	4-leg signalised with no protected turn lane
		13	Railway Crossing - passive (signs only)
		4	3-leg unsignalised with no protected turn lane
		9	4-leg signalised with protected turn lane
		6	3-leg signalised with no protected turn lane
		3	3-leg unsignalised with protected turn lane
		5	3-leg signalised with protected turn lane
		14	Railway Crossing - active (flashing lights / boom gates)
		2	Roundabout
		1	Merge lane
		15	Median crossing point - informal
		16	Median crossing point - formal
		12	None
		199	Do not use this code
37	Intersection channelisation	2	Present
		1	Not present
38	Intersecting road volume	1	≥15,000 vehicles
		2	10,000 to 15,000 vehicles
		3	5,000 to 10,000 vehicles
		4	1,000 to 5,000 vehicles
		5	100 to 1,000 vehicles
		6	1 to 100 vehicles
		7	Not applicable
39	Intersection quality	2	Poor
		1	Adequate
		3	Not applicable
40	Property access points	1	Commercial Access ≥1
		2	Residential Access ≥3
		3	Residential Access <3
		4	None
41	Number of lanes	4	Four or more
		3	Three
		6	Three and two
		2	Two
		5	Two and one
		1	One
42	Lane width	3	Narrow (≥ 0m to < 2.75m)
		2	Medium (≥ 2.75m to < 3.25m)
		1	Wide (≥ 3.25m)
43	Curvature	4	Very sharp

Attribute	Item	Category ID	Category
		3	Sharp
		2	Moderate
		1	Straight or gently curving
44	Quality of curve	2	Poor
		3	Not applicable
		1	Adequate
45	Grade	5	≥ 10%
		4	≥ 7.5% to <10%
		3	≥ 5% to <7.5%
		2	≥ 4% to <5%
		1	≥ 0% to <4%
46	Road condition	3	Poor
		2	Medium
		1	Good
47	Skid resistance / grip	5	Unsealed - poor
		4	Unsealed - adequate
		3	Sealed - poor
		2	Sealed - medium
		1	Sealed - adequate
48	Delineation	2	Poor
		1	Adequate
49	Street lighting	1	Not present
		2	Present
50	Pedestrian crossing - inspected road	6	Refuge only
		5	Unsignalised marked crossing without a refuge
		4	Unsignalised marked crossing with refuge
		3	Signalised without refuge
		2	Signalised with refuge
		1	Grade separated facility
		7	No facility
		14	Unsignalised raised marked crossing with refuge
		15	Unsignalised raised marked crossing without refuge
		16	Raised unmarked crossing with refuge
		17	Raised unmarked crossing without refuge
51	Pedestrian crossing quality	2	Poor
		1	Adequate
		3	Not applicable
52	Pedestrian crossing facilities - side road	1	Grade separated facility
		2	Signalised with refuge
		3	Signalised without refuge

Attribute	Item	Category ID	Category
		4	Unsignalised marked crossing with refuge
		5	Unsignalised marked crossing without a refuge
		6	Refuge only
		7	No facility
		14	Unsignalised raised marked crossing with refuge
		15	Unsignalised raised marked crossing without refuge
		16	Raised unmarked crossing with refuge
		17	Raised unmarked crossing without refuge
53	Pedestrian fencing	1	Not present
		2	Present
54	Speed management / traffic calming	1	Not present
		2	Present
55	Vehicle parking	3	Two sides
		2	One side
		1	None
56	Sidewalk - drivers side	4	Non-physical separation 0m to <1.0m
		3	Non-physical separation 1.0m to <3.0m
		2	Non-physical separation ≥ 3.0 m
		1	Physical barrier
		7	Informal path 0m to <1.0m
		6	Informal path ≥ 1.0 m
		5	None
57	Sidewalk - passenger side	4	Non-physical separation 0m to <1.0m
		3	Non-physical separation 1.0m to <3.0m
		2	Non-physical separation ≥ 3.0 m
		1	Physical barrier
		7	Informal path 0m to <1.0m
		6	Informal path ≥ 1.0 m
		5	None
58	Service road	1	Not present
		2	Present
59	Facilities for motorised two wheelers	6	None
		5	Inclusive motorcycle lane on roadway
		2	Exclusive one way motorcycle path without barrier
		1	Exclusive one way motorcycle path with barrier
		4	Exclusive two way motorcycle path without barrier
		3	Exclusive two way motorcycle path with barrier
60	Bicycle facility	4	None
		5	Extra wide outside (≥ 4.2 m)
		3	On-road lane

Attribute	Item	Category ID	Category
		2	Off-road path
		1	Off-road path with barrier
		6	Signed shared roadway
		7	Shared use path
61	Roadworks	3	Major road works in progress
		2	Minor road works in progress
		1	No road works
62	Sight distance	2	Poor
		1	Adequate
63	Vehicle flow (AADT)	NA	NA
64	Motorcycle %	10	100%
		9	81% - 99%
		8	61% - 80%
		7	41% - 60%
		6	21% - 40%
		5	11% - 20%
		4	6% - 10%
		3	1% - 5%
		2	0%
		1	Not recorded
65	Pedestrian peak hour flow across the road	1	0
		2	1 to 5
		3	6 to 25
		4	26 to 50
		5	51 to 100
		6	101 to 200
		7	201 to 300
		8	301 to 400
		9	401 to 500
		10	501 to 900
		11	900+
66	Pedestrian peak hour flow along the road driver-side	1	0
		2	1 to 5
		3	6 to 25
		4	26 to 50
		5	51 to 100
		6	101 to 200
		7	201 to 300
		8	301 to 400
		9	401 to 500

Attribute	Item	Category ID	Category
		10	501 to 900
		11	900+
67	Pedestrian peak hour flow along the road passenger-side	1	0
		2	1 to 5
		3	6 to 25
		4	26 to 50
		5	51 to 100
		6	101 to 200
		7	201 to 300
		8	301 to 400
		9	401 to 500
		10	501 to 900
		11	900+
68	Bicycle peak hourly flow	1	none
		2	1 to 5
		3	6 to 25
		4	26 to 50
		5	51 to 100
		6	101 to 200
		7	201 to 300
		8	301 to 400
		9	401 to 500
		10	501 to 900
		11	900+
69	Operating Speed (85th percentile)	25	>=150km/h
		24	145km/h
		23	140km/h
		22	135km/h
		21	130km/h
		20	125km/h
		19	120km/h
		18	115km/h
		17	110km/h
		16	105km/h
		15	100km/h
		14	95km/h
		13	90km/h
		12	85km/h
		11	80km/h
		10	75km/h

Attribute	Item	Category ID	Category
		9	70km/h
		8	65km/h
		7	60km/h
		6	55km/h
		5	50km/h
		4	45km/h
		3	40km/h
		2	35km/h
		1	<30km/h
		45	>=90mph
		44	85mph
		43	80mph
		42	75mph
		41	70mph
		40	65mph
		39	60mph
		38	55mph
		37	50mph
		36	45mph
		35	40mph
		34	35mph
		33	30mph
		32	25mph
		31	<20mph
70	Operating Speed (mean)	25	>=150km/h
		24	145km/h
		23	140km/h
		22	135km/h
		21	130km/h
		20	125km/h
		19	120km/h
		18	115km/h
		17	110km/h
		16	105km/h
		15	100km/h
		14	95km/h
		13	90km/h
		12	85km/h
		11	80km/h
		10	75km/h

Attribute	Item	Category ID	Category
		9	70km/h
		8	65km/h
		7	60km/h
		6	55km/h
		5	50km/h
		4	45km/h
		3	40km/h
		2	35km/h
		1	<30km/h
		45	>=90mph
		44	85mph
		43	80mph
		42	75mph
		41	70mph
		40	65mph
		39	60mph
		38	55mph
		37	50mph
		36	45mph
		35	40mph
		34	35mph
		33	30mph
		32	25mph
		31	<20mph
71	Roads that cars can read	1	Meets specification
		2	Does not meet specification
72	Car Star Rating Policy Target	1	1 Star
		2	2 Star
		3	3 Star
		4	4 Star
		5	5 Star
		6	Not applicable
73	Motorcycle Star Rating Policy Target	1	1 Star
		2	2 Star
		3	3 Star
		4	4 Star
		5	5 Star
		6	Not applicable
74	Pedestrian Star Rating Policy Target	1	1 Star
		2	2 Star

Attribute	Item	Category ID	Category
		3	3 Star
		4	4 Star
		5	5 Star
		6	Not applicable
75	Bicycle Star Rating Policy Target	1	1 Star
		2	2 Star
		3	3 Star
		4	4 Star
		5	5 Star
		6	Not applicable
76	Annual Fatality Growth Multiplier	NA	1
77	School zone warning	1	School zone flashing beacons
		2	School zone static signs or road markings
		3	No school zone warning
		4	Not applicable (no school at the location)
78	School zone crossing supervisor	1	School zone crossing supervisor present at school start and finish times
		2	School zone crossing supervisor not present
		3	Not applicable (no school at the location)

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