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Technical Note 206

Guide to coding crashes

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Queensland
Government

1 Introduction

This technical note sets out the process for the coding of crashes in Queensland including definitions and terminology, crash type classification, Descriptive Road User Movement (DRUM) codes, the DRUM coding decision tree, the DRUM groups and DRUM coding examples.

The terminology DRUM replaces the previous description for coding of crashes called Definitions for Coding Accidents (DCA). Refer to *DRUM Information (for TN206)* document, tab labelled DRUM to DCA Translation.

This technical note supersedes and replaces:

- *Queensland Road Crash Database Manual* Section 5
- *Queensland Guide to Road Safety Part 2: Safe Roads* Appendix A

2 Reference Documents

- *[DRUM information (for TN206)](#)*
- *[Queensland Guide to Road Safety Part 2: Safe Roads](#)*
- [Austroads *Guide to Road Safety Part 2: Safe Roads*](#)
- ATM29 *Model Guidelines for Road Accident data and Accident Types*
- *Queensland Road Crash Database Manual*

3 Definitions and terminology

Crashes must be sorted and classified according to a set of definitions and rules. The rules must be applied in the first instance for saying what crashes in what locations are required to be reported (e.g., all crashes occurring on public roads, or only those crashes involving injury on public highways, etc.). The location elements must be defined to know if a crash was in a traffic lane, special purpose lane, road shoulder, footway, intersection or link, etc. Similarly, definitions are needed to know if the crash involved a motor vehicle, a pedestrian, or a passenger.

The purpose of definitions and rules is so that when analysis of the data is contemplated the analyst has some surety and confidence in what the various data items mean. It is an essential requirement in taking a scientific approach to traffic safety.

For example, when motorcycle crash data is studied one must know what type of motorised two-wheel vehicle is classified as a 'motorcycle'. Some countries classify only vehicles with engines above 50 cc capacity as 'motorcycles' and those with smaller engines as 'mopeds'. In some countries mopeds are classified as 'pedal cycles'. A child riding a tricycle on a footpath needs to be able to be clearly defined for example either as a 'pedestrian' or as a 'pedal cyclist'. Another example is when does a 'pedestrian' become a 'passenger' or occupant of a vehicle and vice versa.

The set of definitions shown below are guided by the Queensland *Transport Operations (Road Use Management—Road Rules) Regulation 2009* (TORUM) and *Queensland Transport Operations (Road Use Management—Road Rules) Act 1995 – Schedule 4* under the *Queensland Transport Operations (Road Use Management—Road Rules) Act 1995*.

Road

A road is any of the following:

    a)   a busway under the *Transport Infrastructure Act 1994*, and

    b)   an area that is:

        i.   open to or used by the public and is developed for, or has as one of its uses, the driving or riding of motor vehicles, whether on payment of a fee or otherwise, or

        ii.   dedicated to public use as a road, but

    c)   does not include an area declared under a regulation not to be a road.

A reference to a road includes a reference to a road-related area, unless otherwise expressly stated.

Road-related area

A road-related area is any of the following:

    a)   an area that divides a road

    b)   a footpath or nature strip adjacent to a road

    c)   an area that is not a road and that is open to the public and designated for use by cyclists or animals, and

    d)   an area that is not a road and that is open to, or used by, the public for parking vehicles.

However, unless the contrary intention appears, a reference in this regulation (except this division) to a road-related area includes a reference to:

    a)   any shoulder of a road, and

    b)   any other area that is a footpath or nature strip as defined in the dictionary.

Shoulder

Shoulder of the road:

    a)   includes any part of the road that is not designed to be used by motor vehicles in travelling along the road, and

    b)   includes:

        i.   for a kerbed road—any part of the kerb including outside of the edge line (and including the edge line) on the road, and

        ii.   for a sealed road—any unsealed part of the road, and any sealed part of the road outside the edge line (and including the edge line) on the road up until the edge guide posts (if present), but

    c)   does not include a bicycle path, footpath or shared path.

Carriageway

Due to various differing definitions of carriageway having been used, the wording for carriageway varies from that used in TORUM and has been replaced with the words traffic lane.

Road Users

A road user is a driver, rider, passenger or pedestrian.

Vehicle

A vehicle includes:

a) a motor vehicle, and trailer, and

b) a bicycle, and

c) a personal mobility device, and

d) an animal-drawn vehicle, and an animal that is being ridden or drawing a vehicle, and

e) a combination, and

f) a motorised mobility device that can travel at over 15km/h on level ground, and

g) a tram and train

but does not include another kind of wheelchair, a wheeled recreational device, or a wheeled toy.

Personal mobility device

A personal mobility device is a vehicle that:

a) is designed to be used by 1 person, and

b) has 1 or more wheels, and

c) is propelled by an electric motor, and

d) is not more than:

    i. 1,250 mm in length by 700 mm in width by 1,350 mm in height, or

    ii. 700 mm in length by 1,250 mm in width by 1,350 mm in height, and

e) weighs 60 kg or less when the vehicle is not carrying a person or other load, and

f) is none of the following:

    i. a motorised scooter,

    ii. a motorised mobility device, and

    iii. a vehicle with pedals.

Driver

A driver is the person who is driving a vehicle (except a motorbike, bicycle, personal mobility device, animal or animal-drawn vehicle). Unless otherwise expressly stated, reference to a driver includes a rider.

However, a driver does not include a person pushing a motorised mobility device.

Rider

A rider is the person who is riding a motorbike, bicycle, personal mobility device, animal or animal-drawn vehicle.

A rider does not include:

   a)   a passenger, or

   b)   a person walking beside and pushing a bicycle or personal mobility device.

Passenger or pillion

Passenger or pillion includes any person carried on a vehicle, train, animal, vessel or tram, other than the driver or conductor thereof.

Object

An object is something that is hit in a crash that is not classed as a vehicle, animal or road user.

It is noted that objects that can be mounted, such as a traffic island, median, roundabout, LATM device or similar, is counted as an object. An object, such as a light pole, tree or barrier may be on one of the above-mentioned mountable devices that would be an object, if hit.

Pedestrian

A pedestrian includes, but is not limited to:

   a)   a person travelling by foot without the use of any device, and

   b)   a person in a motorised mobility device, and

   c)   a person in a non-motorised wheelchair, and

   d)   a person pushing a motorised mobility device or non-motorised wheelchair, and

   e)   a person pushing a bicycle or personal mobility device, and

   f)   a person in or on a wheeled recreational device or wheeled toy.

Crash

A crash is an incident involving a vehicle, or vehicles, in which a person is killed or injured, property is damaged, or an animal in someone's charge is killed or injured.

Crashes may not be in scope for official road-related reporting purposes.

Intersection

Intersection means the area where two or more roads (except any road-related area) meet, and includes:

   a)   any area of the roads where vehicles travelling on different roads might collide, and

   b)   the place, other than a road-related area, where a slip lane between the roads meets the road into which traffic on the slip lane may turn.

Traffic Lane

A traffic lane is defined as the lanes, either marked or unmarked on a road, where all vehicles can travel. The traffic lanes are on road and include those in both directions of travel.

Traffic lanes do not include special purpose lanes such as bike lanes, bus lanes, transit lanes (while active), tram lanes; or shoulders, medians and footways.

Bike Lane

A bike lane shall be marked with either a bicycle lane sign, or a Bicycle LANE pavement marking.

In the case of where there is a shared bike lane and traffic lane it is considered a traffic lane.

Shoulders and bike lanes may often be hard to distinguish a difference, and for this reason, both a shoulder and bike lane are seen as part of the same road space.

Special Purpose Lanes

A special purpose lane is a marked lane, part of a marked lane, or part of the road with tracks beginning at a sign or pavement marking designating its start and ending at the nearest of the following:

    a)   an end lane sign or pavement marking,

    b)   a traffic sign that indicates the beginning of another special purpose lane, or

    c)   at the next intersection.

Footway

The area of the road-related area outside of the kerb, traffic lanes, bike lanes and shoulder. It may consist of a footpath, shared path, bike path as well as a nature strip.

Motorised mobility device

A motorised mobility device means a mobility scooter or a motorised wheelchair.

Mobility scooter

A mobility scooter means a vehicle that is a chair on wheels that:

    a)   is built to transport a person who is unable to walk or has difficulty in walking, and

    b)   is fitted with an electric motor, and

    c)   is steered by handlebars or a steering wheel, and

    d)   when propelled only by the motor, cannot reach a speed on level ground of more than:

        i.   if a speed is prescribed by regulation—the prescribed speed, or

        ii.   otherwise—15 km/h, and

    e)   has an unladen mass of no more than:

        i.   if a mass is prescribed by regulation—the prescribed mass, or

        ii.   otherwise—170 kg.

Motorised wheelchair

A motorised wheelchair:

    a)   means a vehicle that is a chair on wheels that:

        i.   is built to transport a person who is unable to walk or has difficulty in walking; and

        ii.   is fitted with an electric motor or an accessory containing an electric motor; and

        iii.   when propelled only by the motor, cannot reach a speed on level ground of more than:

- if a speed is prescribed by regulation—the prescribed speed; or

- otherwise—15 km/h, but

b) does not include:

   i. a pram, stroller or trolley, or

   ii. a mobility scooter, or

   iii. a vehicle that would be a mobility scooter other than because it does not comply with the requirement in definition mobility scooter, paragraph (e).

4   Crash type classification

The system of classifying crashes into the subdivisions is referred to in these Guidelines as the Descriptive Road User Movement coding. The use of crash types are many and varied and discussion of them will be found in safety literature. In this context a crash type is the classification used to describe a crash by the techniques used in a 'collision diagram', a tool that has been used for a long time by practitioners.

The crash type is based on the traffic movements leading up to the conflict situation which results in the crash. Only the conflict situation is used, why and how the participants impact is not of significance and the relative blame of the participants plays no part in the principle of crash types. With regard to movements, driver, rider or pedestrian intent as well as actual movement can be used in determining the crash type (for example the car was stationary waiting to turn right, when it was hit from behind).

Crash type must always take ascendancy over severity. A crash must occur before an 'outcome' result. If severity is to be used for classification, it should be within crash types, not the other way around. Undue emphasis of little value results when severity is put first.

Some coding systems use what they call the initial event and most, if not all, use a single code event to describe the crash. Usually there is no priority protocol to determine the appropriate code if more than one event occurs. The event that produces the casualties may miss being recorded under such systems. The following sub-sections describe what has been put into this system to capture a picture of the events in a crash.

It is noted that while the multiple event process is more accurate, 30 years' experience of data collection has noted that the use of multiple crash types being coded occurred at such a low level, that in Queensland this defining no longer occurs. This is not to say that a 'collision diagram' should not consider following this approach to get a more accurate understanding of the site. Although these are not used , commentary is provided in Appendix A which explains these concepts in more details. For further information refer to ATM29 *Model Guidelines for Road Accidents Data and Accident Types V2.1* (1994).

5   Descriptive Road User Movement Codes

The coding procedure and cells are intended for use for crashes occurring on 'roads' or within the road-related area. As mentioned in Section 3, a reference to a road includes a reference to a road-related area, unless otherwise expressly stated.

Crashes which occur in `non-road' locations might also be recorded by the agencies involved. They should always be clearly marked as non-road crashes, but otherwise generally follow the same classification rules.

Thus to 'record' a crash it must first be known which State it occurred in, then which Local Government Area (LGA), then whether it was on a `road' or not. If on a road, did it occur within 10 m of a 'node' ('node crash) or beyond 10 m ('link crash). In addition to intersections other 'fixed' locations can be used as nodes, e.g., railway crossings, state borders, 'access' to defined non-road area, etc. For intersections it is necessary to know the names of all the roads, and for links it is necessary to know the name of the road and the names of the roads at the intersections that bound that link (i.e., the first intersection in each direction from the crash site).

A vehicle need not be moving for a crash to be included. For example, a passenger falls down the steps when alighting from a bus which is stationary at a bus stop; a pedestrian is hit by an object which falls off a truck which is stationary while goods are being unloaded. However, if no vehicle is involved, e.g., two pedestrians collide, then the crash is not a vehicle/road crash.

The Descriptive Road User Movement (DRUM) chart is shown in *DRUM Information (for TN206)* document, tab labelled DRUM Chart.

The Descriptive Road User Movement (DRUM) definitions are shown in *DRUM Information (for TN206)* document, tab labelled DRUM Cell Definitions.

The Definitions for Coding Accidents (DCA) chart is also provided in DRUM Information (for TN206) document, tab labelled DCA Chart for comparative purposes.

For further information regarding the transition to DRUM codes refer to Appendix C.

5.1 Crash Hierarchy

The DRUM code is the key event in the crash, that is, the defining element of the crash. When applying a DRUM code, the hierarchy of events to follow is ordered below.

Collision on roadway (kerb to kerb or on sealed section of road) involving a vehicle hitting:

1. Pedestrian

2. Vehicle

3. Animal

4. Object

5. Nothing

Vehicle run-off-road hitting:

6. Pedestrian

7. Vehicle

8. Object

9. Animal

10. Nothing

Following the determined crash hierarchy, the coding of a crash is determined by the order of the events or impacts. This means that if there are multiple impacts of the same crash hierarchy for example, two separate vehicle impacts, the first impact determines the crash code selected.

5.2 Consistency of coding before and after physical change

To evaluate the effects of some site-specific treatments it is essential to apply the coding rules in a consistent manner before and after any physical changes are made. At intersections the most obvious example of this condition is after a roundabout is installed. For example, for crashes which involve vehicles from adjacent approaches it is necessary to identify the origins of the vehicles, that is, from what approach did they enter the roundabout, to correctly classify the collision.

An example on a link is that of head-on crash before and after a median is installed. Crashes where a vehicle crosses the median and hits a vehicle in the opposing traffic lane must be recorded as a head-on crash as the chosen cell and not some other type. The use of the Decision Trees should ensure the correct chosen cell is determined.

There are instances where the origins may be known but the intended direction of travel is not given and for these cases the principle of 'default cell' and subdivisions is applied.

6   Cell definitions

6.1   00 Pedestrian

Pedestrian crashes can occur anywhere on the road or road related area.

'Vehicle hits' includes pedestrian walking into the side of the vehicle if the vehicle is in transit. In all pedestrian crashes the vehicle is coded as the key vehicle (1).

000 OTHER
Any 'road' crash involving a pedestrian not classified below. Pedestrian might be hit by the vehicle they intend to board or has left.
Pedestrian hit by any reversing vehicle, or vehicle moving into / out of parking space.
001 NEAR SIDE
Pedestrian proceeds from kerb or side of shoulder to cross the traffic lane, special purpose lane (including bike lane) or shoulder and is hit by vehicle from the right.
002 EMERGING
Pedestrian proceeds from kerb or side of the traffic lane, special purpose lane (including bike lane) or shoulder and is hit by vehicle from the right, but pedestrian comes from in front of a parked or stationary vehicle at the kerb (not a bicycle), e.g., bus at bus stop.
003 FAR SIDE
Pedestrian proceeds from kerb or side of the traffic lane, special purpose lane (including bike lane) or shoulder and is hit by a vehicle from the left. Includes any emerging of pedestrian from vicinity of parked or stationary vehicles.
004 PLAYING, WORKING, LYING, STANDING IN TRAFFIC LANE
Pedestrian playing, working, lying, standing, etc. in the traffic lane, special purpose lane (including bike lane) or shoulder. This code is used for a person actually working on the road, or for persons whose movements in the traffic lane, special purpose lane (including bike lane) or shoulder are unknown.
If the direction of travel of someone crossing the road is unknown, see 000.
005 WALKING WITH TRAFFIC
Pedestrian is walking in the traffic lane, special purpose lane (including bike lane) or shoulder, with the traffic and is hit by a vehicle. It is based on the direction the pedestrian is walking relative to the flow of traffic rather than the direction of the vehicle that hits them.

006 FACING TRAFFIC

Pedestrian is walking in the traffic lane, special purpose lane (including bike lane) or shoulder, facing the traffic and is hit by a vehicle. It is based on the direction the pedestrian is walking relative to the flow of traffic rather than the direction of the vehicle that hits them.

007 DRIVEWAY

Pedestrian on footway is hit by vehicle entering or leaving a driveway (or loading bay).

008 ON FOOTWAY

Pedestrian on footway hit by vehicle travelling along the footway or from leaving the traffic lane special purpose lane (including bike lane) or shoulder.

009 STRUCK WHILE BOARDING OR ALIGHTING

Person hit by a vehicle while in traffic lane, special purpose lane (including bike lane) or shoulder walking to/from or boarding/alighting a tram, bus, taxi, (see 001 - 003 for person alighting from other vehicle types).

6.2   01 Footway

Vehicle crashes that occur on or from the footway or off sealed road.

010 OTHER

Other vehicle crashes not classified below that occur on or from the footway.

011 NEAR SIDE

Vehicle proceeds from footway onto traffic lane, special purpose lane (including bike lane) or shoulder and is hit by a vehicle from the right.

012 EMERGING

As above, but vehicle comes from in front of a parked or stationary vehicle at the kerb, e.g., bus at bus stop.

013 FAR SIDE

Vehicle proceeds from footway onto traffic lane, special purpose lane (including bike lane) or shoulder and is hit by a vehicle from the left. Includes any emerging of a vehicle from vicinity of parked or stationary vehicles.

014 HEAD-ON

Vehicles from opposing directions on footway collide. Includes sideswipes.

015 REAR END

Two vehicles travelling in the same direction along the footway, the vehicle hit may be moving or stationary.

016 ENTER FOOTWAY

A vehicle exits the traffic lane, special purpose lane (including bike lane) or shoulder and hits or is hit by a vehicle travelling in the footway.

017 DRIVEWAY

Vehicle utilising driveway hits or is hit by vehicle on the footway. The vehicle may be travelling forward or in reverse. The vehicle hit may be moving, parked, parking or stationary.

If the vehicle hit is not at a driveway see 010.

018 CROSSING INTERSECTION

Vehicle crossing from footway at an intersection hits or is hit by an adjacent vehicle travelling in the traffic lane, special purpose lane (including bike lane) or shoulder.

019 OUT OF CONTROL FROM FOOTWAY

Vehicle loses control and either remains on or runs off footway. The vehicle may or may not hit an object.

6.3   02 On Road: Non-Traffic Lane

Vehicle crashes that occur on or from the special purpose lanes (including bike lanes) or shoulder of a road. The direction of the travel is to be used rather than the traffic flow direction for example, a bike travelling in the opposite direction of travel in the shoulder, hit by a right turning vehicle entering the shoulder from the same direction would be coded as a 026.

020 OTHER Other vehicle crashes not classified below that occur on or from a special purpose lane (including bike lane) or shoulder.
021 ENTER TRAFFIC LANE Vehicle enters traffic lane from special purpose lane (including bike lane) or shoulder and hits or is hit by a vehicle travelling in the traffic lane. Vehicle on the traffic lane may be parked, parking or stationary. Vehicles making a U-turn from the special purpose lane (including bike lane), or shoulder are not included.
022 HEAD-ON Vehicle in special purpose lane (including bike lane) or shoulder collides with another vehicle from opposing direction also travelling in special purpose lane (including bike lane) or shoulder.
023 REAR END Two vehicles travelling in the same direction along the special purpose lane (including bike lane) or shoulder, the vehicle hit may be moving or stationary.
024 PARKED Vehicle in the special purpose lane (including bike lane) or shoulder hits stationary or parked vehicle in the special purpose lane (including bike lane) or shoulder. Includes open doors of vehicles parked or stationary. This includes when a vehicle has left the footway and impacts a vehicle in the special purpose lane (including bike lane) or shoulder.
025 ENTER NON-TRAFFIC LANE ROAD A vehicle exits the traffic lane and hits or is hit by a vehicle travelling in the special purpose lane (including bike lane) or shoulder. Includes vehicles crossing special purpose lane (including bike lanes) to access turning lanes, or vehicle storage boxes at intersections.
026 PARALLEL TURNING A vehicle travelling on the traffic lane turns and hits or is hit by a vehicle travelling parallel in the special purpose lane (including bike lane) or shoulder. The vehicle may have entered the traffic lane to cross an intersection at the time of the impact.
027 OPPOSING TURNING A vehicle travelling in the traffic lane turns and hits or is hit by a vehicle travelling from the opposing direction in the special purpose lane (including bike lane) or shoulder. The vehicle may have entered the traffic lane to cross an intersection at the time of the impact.
028 ADJACENT APPROACH A vehicle travelling in the traffic lane hits or is hit by a vehicle travelling adjacent in the special purpose lane (including bike lane) or shoulder. The vehicle may have entered the traffic lane to cross an intersection at the time of the impact.
029 OUT OF CONTROL SHOULDER / SPECIAL PURPOSE LANE Vehicle loses control and remains in the special purpose lane (including bike lane) or shoulder or enters the traffic lane.

6.4   10 Intersection: Vehicles from Adjacent Approaches

These cells are used for all intersection types, including cross, T, Y, multi-leg approaches or off-set intersections.

Vehicles can be travelling on the incorrect side of the road approaching the intersection.

The vehicles must be coming from adjacent approaches, that is, not travelling in the same direction or opposite directions.

100 OTHER Other impacts involving adjacent approaches, e.g., three vehicles from three approaches in mutual impact; one or both vehicles reversing. More complicated intersection geometries where the vehicles are not strictly on adjacent approaches should be included in this cell.
101 THRU-THRU Vehicles approach each other in the traffic lane of two adjacent approaches, both intending to proceed straight through. Vehicle on right is straight through (1).
102 RIGHT - THRU One vehicle is straight through, the other right turning. Vehicle on the right is right turning (1).
103 LEFT-THRU One vehicle is straight through, the other left turning. The vehicle on the right is left turning (1).
104 THRU-RIGHT One vehicle is making or intending a right turn, the other is straight through. Vehicle on the right is straight through (1).
105 RIGHT-RIGHT One vehicle is making right turn, the other is right turning. Vehicle on right is right turning (1).
106 LEFT-RIGHT One vehicle is making a right turn, the other is left turning. Vehicle on right is left turning (1).
107 THRU-LEFT One vehicle is making or intending a left turn, the other is straight through. The vehicle on the right is straight through (1).
108 RIGHT-LEFT One vehicle is a left turn, the other is right turning. The vehicle on the right is right turning (1).
109 LEFT-LEFT One vehicle is making a left turn, the other is left turning. The vehicle on the right is left turning (1).
110 U-TURN One vehicle is making a U-turn, the other is straight through.

6.5   20 Vehicles from Opposing Directions

These cells can be used for crashes at all locations involving opposing vehicles in the traffic lane e.g., intersections, median openings, links, etc.

200 OTHER Other crashes involving vehicles from opposing directions.
201 HEAD-ON Vehicles from opposing directions collide. Includes sideswipes. If a vehicle crosses a median or other separator and hits vehicle travelling in opposite direction still code as this cell. One or both of the vehicles in impact might be out of control.
202 THRU-RIGHT One vehicle proceeding straight through, the other turning right from the opposing direction. The vehicle turning right may have pulled out from special purpose lanes (including bike lanes) or shoulder (from a stationary or parked position).
203 RIGHT-LEFT One vehicle turning left, one vehicle turning right from opposing direction.
204 RIGHT-RIGHT Both vehicles turning right from opposing directions.
205 THROUGH-LEFT One vehicle proceeding straight through, the other turning left from the opposing direction.
206 LEFT-LEFT Both vehicles turning left.
207 U-TURN Vehicle making or attempting to make a U-turn hit by a vehicle coming from the opposite direction. The vehicle making a U-turn may have pulled out from special purpose lanes (including bike lanes) or shoulder (from a stationary or parked position). Turns through a median via a constructed opening or across a median without a constructed opening are included.

6.6   30 Vehicles from One Direction

REAR ENDS: These can be used at intersections, at driveways, or links.

Vehicles travelling in same direction along the traffic lane, the vehicle hit may be moving or stationary. For parked vehicle see 601, and definition of parked.

Notes: The direction of the front vehicle determines the cell, the rear vehicle might itself be turning or intending to turn right or left (e.g., two vehicles in a right turn lane), or diverging from the lane, but often no information is given about direction of the rear vehicle. (If rear vehicle was in the process of overtaking, see 506). The criteria is that the front vehicle is hit by a vehicle coming from behind (same direction of travel) regardless of the angle of impact (e.g., front vehicle might be hit in rear or side if it is turning) but vehicles must be in the same lane or partly in the same lane.

PARALLEL LANES: Vehicles travelling in same direction in traffic lanes along the road in parallel lanes (marked or unmarked) and an impact results. (These can be used at intersections but only when vehicles originate from same approach).

Notes: Traffic lanes refers to parallel traffic streams, lane marking as such need not exist. There must, however, be width enough for two lanes, even if unmarked.

300 OTHER Other impacts involving vehicles from same direction. Front vehicle rolls back into rear vehicle.
301 REAR END Front vehicle — straight ahead.
302 LEFT REAR Front vehicle — left turning or intending to turn.
303 RIGHT REAR Front vehicle — right turning or intending to turn.
304 U-TURN REAR Vehicle making or attempting to make a U-turn is struck by vehicle from the same direction. Turns through a median via a constructed opening or across a median without a constructed opening are included.
305 LANE SIDESWIPE Two vehicles are travelling in same direction in parallel traffic lanes and one 'sideswipes' the other in the side, rear or front. Use if both vehicles change lanes, or if not known which one changed.
306 LANE CHANGE RIGHT Vehicle diverges to the right and hits or is hit by the vehicle in the next lane in the side, rear or front.
307 LANE CHANGE LEFT Vehicle diverges to the left and hits or is hit by the vehicle in the next lane in the side, rear or front.
308 RIGHT TURN SIDESWIPE Two vehicles are in parallel lanes (marked or unmarked) and vehicle on the left makes (or attempts to) a right turn and hits vehicle in the right lane. The vehicle on the left may have pulled out from special purpose lanes (including bike lanes) or shoulder (from a stationary position or parked position). The turn is often associated with a driveway, median opening, intersection, service road opening, etc.
309 LEFT TURN SIDESWIPE Two vehicles are in parallel lanes (marked or unmarked) and vehicle on the right makes (or attempts to) a left turn and hits vehicle in the left lane. The turn is often associated with a driveway, median opening, service road opening, etc.
310 PULLING OUT A vehicle is pulling out from a traffic lane (when weaving through traffic) and strikes or is struck in the rear, front or side by a vehicle travelling in the parallel traffic lane.
311 U-TURN Two vehicles are in parallel lanes (marked or unmarked) and vehicle on the left makes (or attempts to) a U-turn and hits vehicle in the right lane. The vehicle on the left may have pulled out from special purpose lanes (including bike lanes) or shoulder (from a stationary or parked position). The turn is often associated with a driveway, median opening, intersection, service road opening, etc.

6.7   40 Manoeuvring

Vehicles manoeuvring or parking.

400 OTHER
Other crashes involving a manoeuvring or parking vehicle not covered below or covered in 01 or 02.
401 LEAVING PARKING
One vehicle must be leaving the `parking space' and is impacted by another moving vehicle. Includes parallel parking and angle parking on the left or right of the traffic lane including central median parking. Includes vehicles reversing out of a parking space.
For vehicles leaving parking making a right turn or U-turn refer to 202/207, 308/311.
402 PARKING
One vehicle must be moving into the `parking space' and is impacted by another moving vehicle. Includes parallel parking and angle parking on the left or right of the traffic lane including central median parking.
403 PARKING VEHICLES ONLY
Vehicle manoeuvring within; into or out of a parking space (marked or unmarked) parallel or angle parking and hits vehicle to front or rear or side. The vehicle may be moving forward or reversing. Vehicles to front or rear or side might also be manoeuvring at the time (do not confuse with 401, 402). Includes two vehicles trying to get into the same parking space. Includes parking on the left or right of the traffic lane including central median parking.
404 REVERSING IN TRAFFIC
Vehicle reverses (see note below) in traffic lane, special purpose lanes (including bike lanes) or shoulder and hits another vehicle. Includes vehicle reversing into driveway. Do not use for vehicle reversing into or from a parking space, or from a driveway (see 401, 402, 403, 406, 407). If vehicle hit is moving on the footway, see 017. For vehicle overturning or hitting an object while reversing, see 405,700,800.
405 REVERSING INTO FIXED OBJECT
Vehicle reverses into a fixed object on or outside of the traffic lanes, special purpose lanes (including bike lanes) or shoulder. The fixed object that was hit is recorded.
406 LEAVING DRIVEWAY
Vehicle leaves driveway and hits or is hit by vehicle in the traffic lane, special purpose lanes (including bike lanes) or shoulder. Emerging vehicle may be travelling forward or in reverse. The vehicle on the traffic lane, special purpose lanes (including bike lane) or shoulder may be parked, parking or stationary. [If vehicle hit is moving on the footway, see 017].
407 LEAVING DRIVEWAY HIT OBJECT
Vehicle leaves driveway and hits an object (not a vehicle) in the traffic lane, special purpose lanes (including bike lanes), shoulder or on the footway. Emerging vehicle may be travelling forward or in reverse.
408 [BLANK]
This DRUM code is not used.

6.8   50 Overtaking

In this context the term 'Overtaking' relates to undivided roads and involves a vehicle pulling out into the traffic lane reserved for opposing traffic, overtaking the vehicle in front of them and pulling back into the original lane; that is, both vehicles are in the same lane (portion of traffic lanes) to start with, then the overtaking vehicle goes onto the opposing traffic lane to pass the vehicle in front.

500 OTHER

Other overtaking.

501 HEAD-ON

Vehicle pulls out to overtake and collides with a vehicle from the opposite direction. The impact can take place at any time from just pulled out until the time the vehicle returns to their original traffic lane. (The head-on class includes sideswipes by vehicles travelling in opposite directions).

502 OUT OF CONTROL

Vehicle pulls out to overtake and loses control. Vehicle might subsequently leave traffic lane, special purpose lane (including bike lane) or shoulder and may or may not hit an object (if hit by vehicle travelling in opposite direction code as 501).

503 PULLING OUT

Vehicle pulls out to overtake a moving vehicle in the same lane and hits or is hit by a vehicle which itself is in the overtaking process.

504 CUTTING IN

Vehicle, at the end of its overtaking manoeuvre, cuts in on the overtaken vehicle.

505 PULLING OUT REAR END

Vehicle is pulling out to overtake and hits/clips the vehicle in front.

506 OVERTAKING RIGHT TURN

Vehicle right-turning is hit by vehicle in the process of overtaking. The turn is often associated with a driveway, intersection, median opening, etc.

6.9 60 On Path

Vehicle collides with vehicle, object, or animal in the traffic lane, special purpose lane (including bike lane or shoulder (i.e., left side of two-way road).

600 OTHER

Other collisions with an object on the traffic lane, special purpose lane (including bike lane) or shoulder, including:

- vehicle hits rail line.
- vehicles hits road hump, but see 708 for LATM devices.
- stand of motorcycle or moped drops and hits bitumen. This event usually results in the motorcycle overturning.
- vehicle hit by missile, e.g. golf ball or stone, including stone hits windscreen when other vehicle passes; birds in flight.
- a tree or tree branch falling on vehicle.

601 PARKED

Vehicle collides with vehicle parked on left side, centre, or right side of the road, within the traffic lane, special purpose lane (including bike lane) or shoulder (includes centre parallel or angle parking).

- If the impact is with an opened door of the parked vehicle, then 604 is used.
- The vehicle hit must be actually parked, for vehicles moving in or out of parking space see 401, 402 and 403.
- For parked vehicle hit by vehicle travelling along a footway see 017.
- For parked vehicle hit by vehicle entering the traffic lane from a special purpose lane (including bike lane) or shoulder see 021.
- For parked vehicle hit by vehicle travelling along the shoulder see 024.

602 DOUBLE PARKED

Same as in 601. The vehicle hit must be actually doubled parked. A vehicle can be double parked if the engine is on or off. The driver of the double parked vehicle can be present or absent.

603 [BLANK]

This DRUM code is not used.

604 CAR DOOR

Vehicle travelling in traffic lane hits open door of stationary or parked vehicle within the traffic lane, special purpose lane (including bike lane) or shoulder.

605 HIT PERMANENT OBSTRUCTION

Striking bridge, bridge abutment, tree, fixed object, etc. where they are actually in the traffic lane, special purpose lane (including bike lane) or shoulder, and cause a reduction in usable traffic lane, special purpose lane (including bike lane) or shoulder width.

Where reduction in the traffic lane, special purpose lane (including bike lane) or shoulder does not occur, the crash is classified in column 70 or column 80.

Includes hitting overhead structure, power lines, trees, etc.

Object hit is to be recorded.

606 HIT TEMPORARY ROADWORKS

Vehicle hitting temporary roadworks, e.g., pile of dirt, excavation, signs and barriers, manholes. Roadworks must be in the traffic lane, special purpose lanes (including bike lanes) or shoulder.

607 HIT TEMPORARY OBJECT

Vehicle hits object temporarily in the traffic lane, special purpose lanes (including bike lanes), or shoulder (e.g., rocks, crates, fallen trees, etc.). The object may be stationary or moving. Includes hitting a pothole. Object hit is recorded.

608 CRASH OR BROKEN DOWN

Includes hitting the disabled vehicle and/or any vehicle attending the disabled vehicle eg. police car, tow truck, ambulance or member of the public's vehicle etc., in the traffic lane, special purpose lanes (including bike lanes), or shoulder.

609 ANIMAL

Vehicle hits an animal (dead or alive) in the traffic lane, special purpose lanes (including bike lanes), or shoulder. Only riderless animals are included since ridden animals and animal drawn conveyances are classified as vehicles. Includes animals being led or herded.

610 LOAD HITS VEHICLE

Load hits vehicle. Load (including part of vehicle or any debris from a previous crash) actually falls from or ricochets off one vehicle onto another vehicle. If the load is on the road before a vehicle collides with it then see 607.

It includes a vehicle being hit by:

- debris from crash hitting another vehicle within of the traffic lane, special purpose lane (including bike lanes) or shoulder.
- vehicle hits a sign outside of the traffic lane, special purpose lane (including bike lane) or shoulder and sign then falls onto a vehicle parked on the traffic lane, special purpose lane (including bike lane) or shoulder.

611 WATER ON ROAD

Vehicle hits pooled water on road or is swept away by water. The water may be stationary or moving.

6.10 70 Off Path, On Straight

These crashes can occur on straight sections of 'road', these sections can be at nodes or links. For crashes in or after curves see 801-809.

This group can be used at roundabouts.

Notes: If a 'road' is divided by presence of traffic island, safety zone, median or separator then on each side of that device are the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Hence vehicles leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder may mount the traffic island, median, etc. When a vehicle mounts the median etc. it has left the traffic lanes, special purpose lanes (including bike lanes) or shoulder (see 708).

For cases when a vehicle crosses a median and hits a vehicle travelling in the opposite direction see 201.

700 OTHER
Other off path on straight.
Includes any reversing vehicle out of control on straights.

701 OFF TO LEFT
Vehicle loses control and runs off the traffic lanes, special purpose lanes (including bike lanes) or shoulder to the left. Note similar cell for curves in column 80.

702 OFF TO RIGHT
Vehicle loses control and runs off the traffic lanes, special purpose lanes (including bike lanes) or shoulder to the right. For vehicles that enter the median see 708.

703 LEFT OFF INTO OBJECT
As for 701, but vehicle hits object after leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Object hit is recorded.

704 RIGHT OFF INTO OBJECT
As for 702, but vehicle hits object after leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Object hit is recorded. For vehicles that enter the median see 709.

705 OUT OF CONTROL
Vehicle loses control but does not leave the traffic lanes, special purpose lanes (including bike lanes) or shoulders (e.g., rolls over, rider falls from bicycle, motorcycle).
The vehicle might hit a kerb or median. The vehicle hitting a kerb to the left is 703, and hitting a kerb to the right is 704, but entering, hitting or mounting a median would be 708 or 709.
If the vehicle originates from the special purpose lane (including bike lanes) or shoulders use 029.

706 LEFT TURN
Vehicle left turning at intersection (or into a driveway) loses control (either goes off or stays in traffic lanes, hits object or does not hit object). For turning out of a driveway see 406 or 407. Vehicles undertaking this movement to perform a U-turn are included.

707 RIGHT TURN
Vehicle right turning at intersection (or into a driveway) loses control (either goes off or stays in traffic lanes, hits object or does not hit object). For turning out of a driveway see 406 or 407. Vehicles undertaking this movement to perform a U-turn are included.

708 ENTERS MEDIAN
Vehicle enters, hits or mounts the traffic island, median (grassed, painted, sealed etc), roundabout, LATM device etc.
This code is to only be used if no objects, excluding those listed above that are mounted, are hit (see 709 when vehicle does enter the median and hit an object). Includes overturning in the median.

709 HIT OBJECT IN MEDIAN
Vehicle enters, hits or mounts the traffic island, median (grassed, painted, sealed etc.), roundabout, LATM device etc. and hits an object on this device.
The device hit should be recorded.
The object hit on the device should also be recorded. This includes barriers hit in the median of divided roads.

710 ROAD END/T INTERSECTION
Vehicle at the end of a road, or at a T intersection, travels straight ahead off the road.

6.11 80 Off Path, On Curve

These crashes can occur on any curved section of road including intersections and roundabouts only if the roads on entry or exit to the roundabout are curved.

These crashes occur at a bend/curve in a road or are associated with a bend i.e. the vehicle was entering the curve, was in the curve or had passed through the curve.

Notes: If a 'road' is divided by presence of traffic island, safety zone, median or separator then on each side of that device are the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Hence vehicles leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder may mount the traffic island, median, etc. When a vehicle mounts the median etc. it has left the traffic lanes or shoulder (see 808).

When the vehicle mounts the device and then proceeds onto the opposing traffic lane a supplementary code will be used.

800 OTHER
Other off-path on curves.
Includes any reversing vehicle out of control on curves.

801 OFF RIGHT BEND
A vehicle negotiating a RIGHT HAND bend loses control and runs off the traffic lanes, special purpose lanes (including bike lanes) or shoulder to either the left or the right. For vehicles that enter the median see 808.

802 OFF LEFT BEND
A vehicle negotiating a LEFT HAND bend loses control and runs off the traffic lanes, special purpose lanes (including bike lanes) or shoulder to either the left or the right. For vehicles that enter the median see 808.

803 OFF RIGHT BEND INTO OBJECT
As for 801, but vehicle hits object after leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Object hit is recorded. For vehicles that enter the median see 809.

804 OFF LEFT BEND INTO OBJECT
As for 802, but vehicle hits object after leaving the traffic lanes, special purpose lanes (including bike lanes) or shoulder. Object hit is recorded. For vehicles that enter the median see 809.

805 OUT OF CONTROL ON BEND
Vehicle loses control on RIGHT or LEFT bend but does not leave the traffic lanes, special purpose lanes (including bike lanes) or shoulders (e.g., rolls over, rider falls from bicycle, motorcycle).
The vehicle might hit a kerb or median. The vehicle hitting a kerb to the left is 803 or 804, and hitting a kerb to the right is 803 or 804, but entering or hitting a median would be 808 or 809.
If the vehicle originates from the special purpose lane (including bike lanes) or shoulders use 029.

806 LEFT TURN ON BEND

Vehicle left turning at intersection (or into a driveway) loses control (either goes off or stays in traffic lanes, hits object or does not hit object). For turning out of a driveway see 406 or 407. Vehicles undertaking this movement to perform a U-turn are included.

807 RIGHT TURN ON BEND

Vehicle right turning at intersection (or into a driveway) loses control (either goes off or stays in traffic lanes, hits object or does not hit object). For turning out of a driveway see 406 or 407. Vehicles undertaking this movement to perform a U-turn are included.

808 ENTERS MEDIAN ON BEND

Vehicle enters, hits or mounts the traffic island, median (grassed, painted, sealed etc), roundabout, LATM device etc.

This code is to only be used if no objects, excluding those listed above that are mounted, are hit (see 809 when vehicle does enter the median and hit an object). Includes overturning in the median.

809 HIT OBJECT ON MEDIAN ON BEND

Vehicle enters, hits, or mounts the traffic island, median (grassed, painted, sealed etc.), roundabout, LATM device etc. and hits an object on this device.

The device hit should be recorded.

The object hit on the device should also be recorded. This includes barriers hit in the median of divided roads.

6.12 90 Passengers and Miscellaneous

Crashes that occur that are outside the normal and not usually seen as an impact.

900 OTHER

When a crash does not fit the any other cell to describe a crash, then use this code. This includes:

- movement of load on vehicle causes damage and/or casualty to occupants.
- bonnet flies open and breaks the windscreen, and occupant is injured by the glass.
- debris from crash hitting another vehicle outside of traffic lanes, special purpose lanes (including bike lanes) or shoulder.
- driver/passenger ejected from motorcycle and hits another vehicle without the motorcycle hitting the other vehicle.
- vehicle runs over passenger's foot as passenger alights.
- events resulting from a critical vehicle malfunction e.g. fire, explosion, gas poisoning. Vehicle must be moving or stationary-in-transit.

901 FELL IN / FROM VEHICLE

Driver / rider or passenger falls while boarding or alighting a vehicle, falls inside a vehicle, or falls from a vehicle. Vehicle may be stationary or moving but has no impact. Includes driver / rider or passenger on motorcycles, bicycles, animals, buses, trams.

902 [BLANK]

This DRUM code is not used.

903 HIT TRAIN/ TRAM

Vehicle hits train or other railway vehicle on a crossing, or if railway runs along the road it may collide at other than a crossing. Vehicle might be on or off of the traffic lanes, special purpose lanes (including bike lanes) or shoulders.

904 HIT RAILWAY CROSSING FURNITURE

Vehicle hits part of railway crossing furniture but does not hit the train. Use this code also if barrier arm or boom hits the vehicle, or if vehicle hits overhead wire for train. Vehicle might be on or off the traffic lanes, special purpose lanes (including bike lanes) or shoulders.

905 HIT ANIMAL OFF PATH
The vehicle hits an animal outside of the traffic lanes, special purpose lanes (including bike lanes) or shoulders. Only riderless animals are involved (including animals being led or herded).
Ridden animals and animal-drawn conveyances are classified as vehicles, (see 609 for animal in traffic lane, special purpose lanes (including bike lanes), or shoulders).
906 PARKED VEHICLE RAN AWAY
Parked vehicle ran away. Driverless vehicles may be involved in many of the cells already described but due to the lack of a driver all such impacts are given this code.
907 VEHICLE MOVEMENTS NOT KNOWN
Not known is used when no, or insufficient, description is given about the movement or origins of the road users.

7   Descriptive Road User Movement Coding Decision Tree

The Decision Tree is the primary means of classifying the event and deciding the chosen cell and then the definitions should be read to ensure that the event matches the description.

The origins of the vehicles (and pedestrians) and the intended direction of travel must be known to correctly choose the cell. When the crash can be classified as belonging to a particular column but does not fit one of the existing cells in that column then it should be given the 'Other' code for that column.

Throughout the definitions 'vehicle hits ...' can be interpreted also as a 'vehicle is hit by ... '. The vehicle type (e.g., car, bicycle, truck, etc.) should have previously been coded as vehicle A, vehicle B from the crash report form.

It is noted that, due to the various parts of a road and road-related area, as well as differences between impacting another vehicle, animal, road user, object or losing control, four key crash groups are marked in the decision tree, which are prioritised in the following order:

Traffic lane crashes – these are crashes that originate from a vehicle in a traffic lane crashing predominately into another vehicle, pedestrian animal or other road user.

Non-traffic lane crashes – these are crashes that originate from a vehicle in a shoulder or special purpose lane (including bike lanes) crashing predominately into another vehicle, pedestrian animal or other road user.

Footway crashes – these are crashes that originate from a vehicle in the footway crashing predominately into another vehicle, pedestrian animal or other road user.

Lane departure Crashes – these are crashes, predominately originating from the traffic lane, losing control or hitting an object.

The decision tree is shown in the *DRUM Information (for TN206)* document.

Please refer to *DRUM Information (for TN206)* document, tab labelled DRUM Chart.

Please refer to *DRUM Information (for TN206)* document, tab labelled DRUM Cell Definitions.

Please refer to *DRUM Information (for TN206)* document, tab labelled Crash Coding Decision Tree.

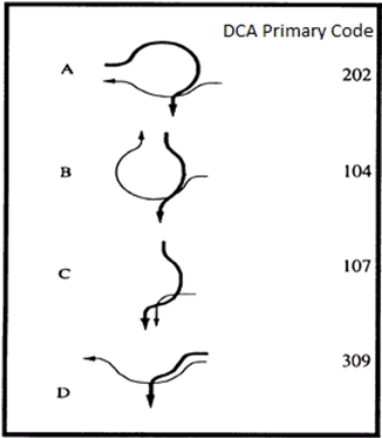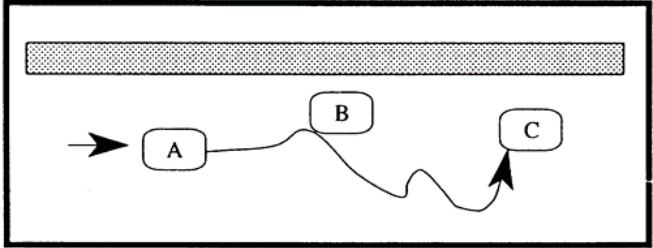## 8 Descriptive Road User Movement (DRUM) Coding Groups
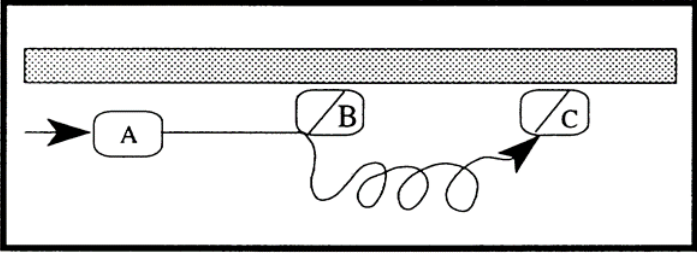
The use of the cells for analysis is normally at a more aggregated level than that used in the encoding process. However, the analyst should understand how the data has been categorised as it can affect interpretation of results. The coding procedure is intended to be used to determine a crash type from a crash report. The code chart has a number of subdivisions which allow the coder to often find a one-to-one correspondence between the sketch on the crash report and one of the cells on the code chart.
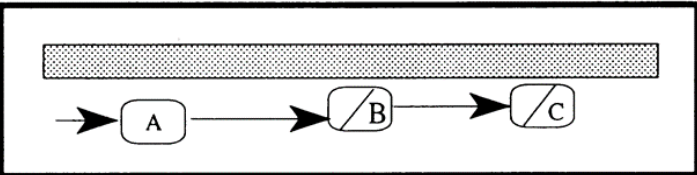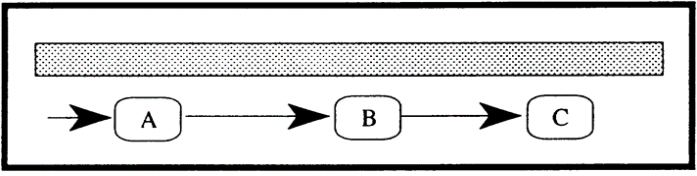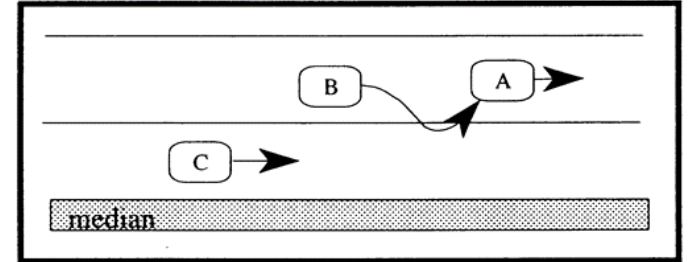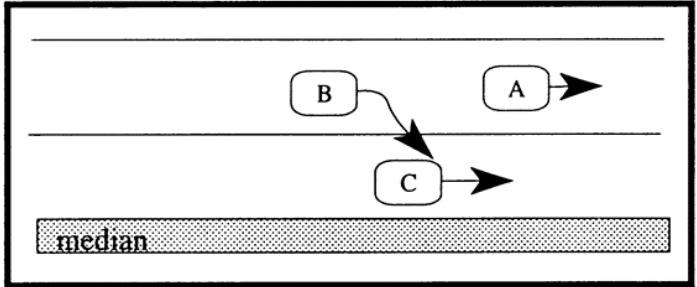
When it comes to analysis of the crash data, groupings of the cells can be used. Table 8 shows the primary DRUM groups and the respective DRUM codes.
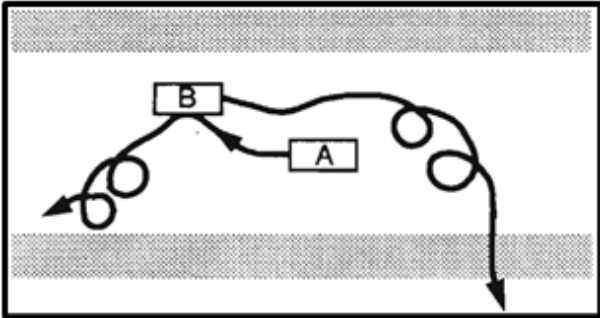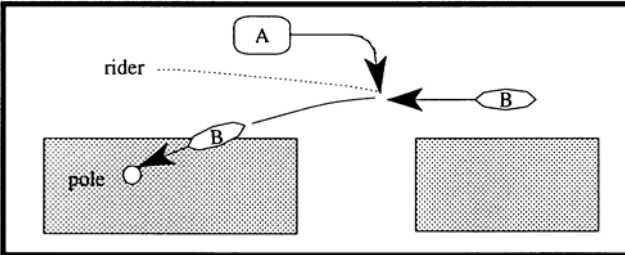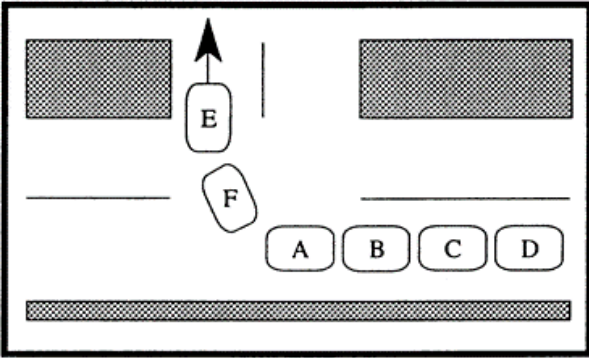
Table 8 – DRUM Groups for Analysis
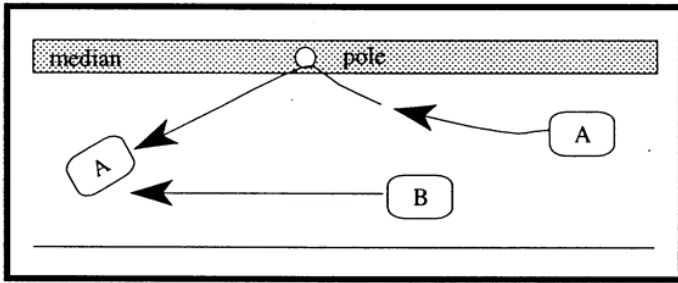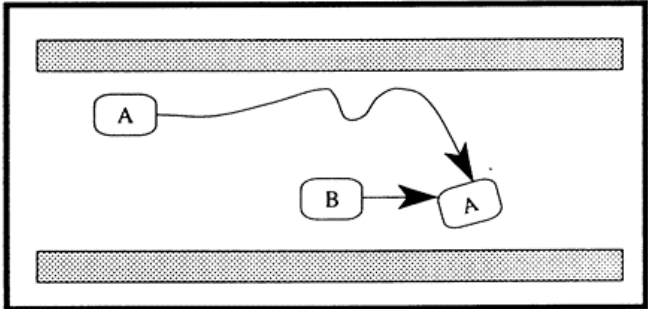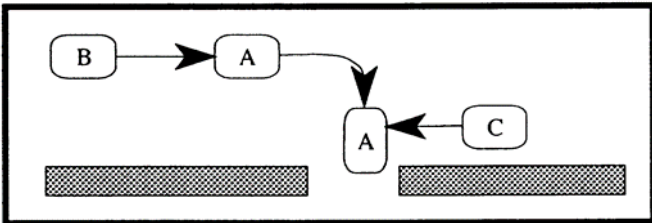
DRUM Group	DRUM Group Description	DRUM Codes									
1	Hit Pedestrian	000	001	002	003	004	005	006	007	008	009
2	On Footway	010	011	012	013	014	015	016	017	018	019
3	On Road: Non-Traffic Lane Road	020	021	022	023	024	025	026	027	028	029
4	Intersection: Adjacent Approach	100	101	102	103	104	105	106	107	108	109
5	Opposing Vehicles Turning	200	202	203	204	205	206				
6	Head-on	201	501								
7	Rear End	300	301	302	303						
8	Lane Change	305	306	307	310						
9	Parallel Lanes Turning	308	309								
10	U-turn	110	207	304	311						
11	Entering Roadway	401	406	407							
12	Overtaking / Same Direction	500	502	503	504	505	506				
13	Hit Parked Vehicle	400	402	403	600	601	602	604			
14	Hit Train / Tram	903									
15	Hit Obstruction	405	605	606	607	608	611	904			
16	Hit Animal	609	905								
17	Off Path: On Straight	700	701	702	706	707	708	710			
18	Off Path: On Straight Hit Object	703	704	709							
19	Out of Control, On Straight	705									
20	Off Path: On Curve	800	801	802	806	807	808				
21	Off Path: On Curve Hit Object	803	804	809							
22	Out of Control, On Curve	805									
23	Other	404	610	900	901	906	907				
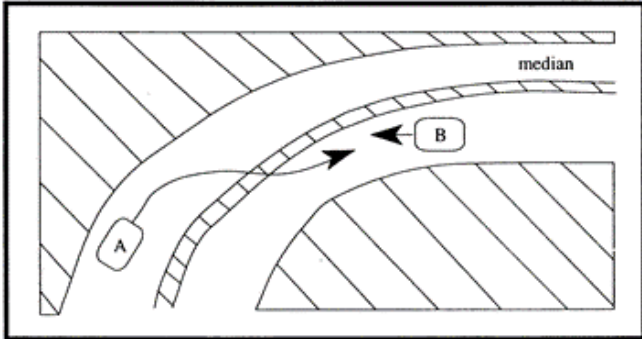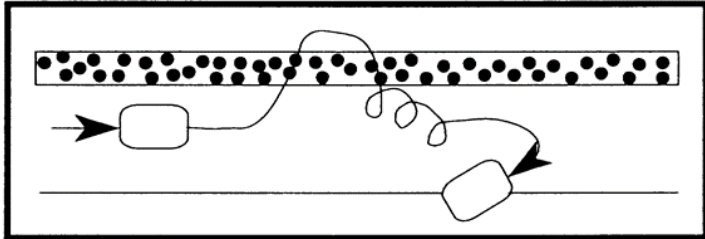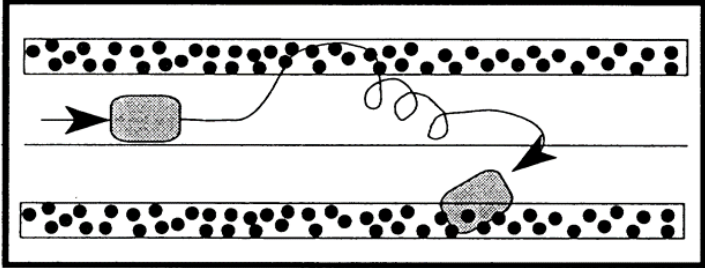
9 Descriptive Road User Movement coding crashes examples
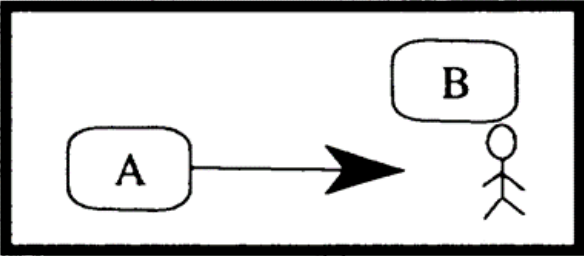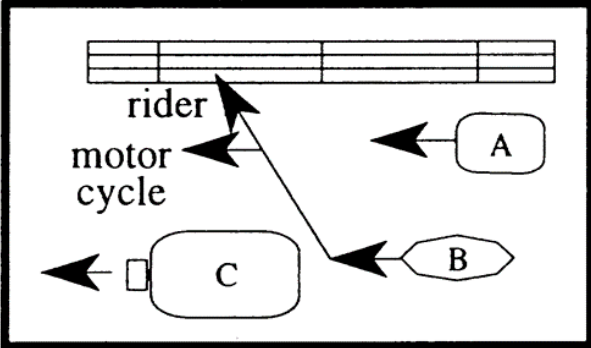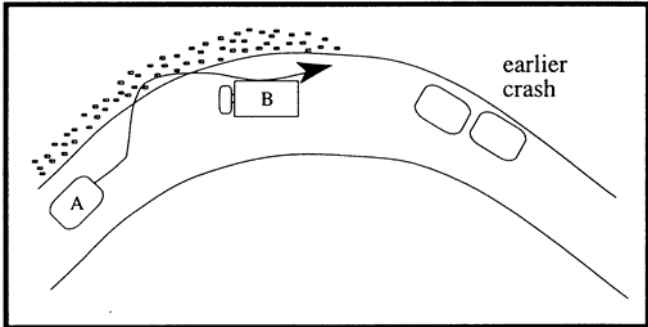
Example #	Example Diagram	Description of Example	DRUM Code used
1		Roundabouts.	-
2		Vehicle A travelling in the same direction and lane as B and C ran into the rear of B, then went and hit the rear of C.	Record as **DRUM 301** if Vehicle A is in traffic lane or **DRUM 023** if Vehicle A is travelling in a special purpose lane (including bike lane) or shoulder.
3		Vehicle A hit parked Vehicle B, and then went out of control, rolled and hit parked Vehicle C.	Record as **DRUM 601** if Vehicle A is in traffic lane or **DRUM 024** if Vehicle A is travelling in a special purpose lane (including bike lane) or shoulder.
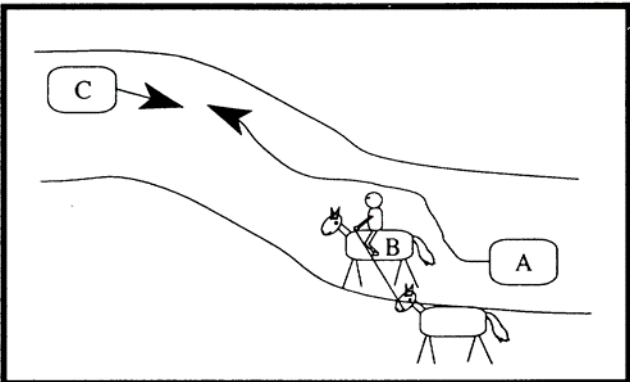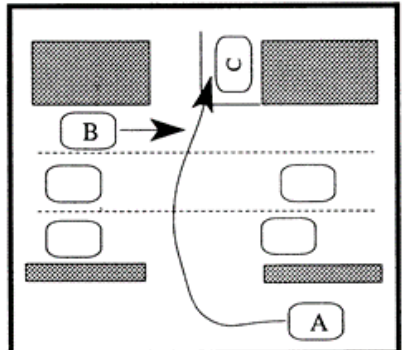
Example #	Example Diagram	Description of Example	DRUM Code used
4		Vehicle A ran into parked Vehicle B, causing it to hit parked Vehicle C.	Record as **DRUM 601** if Vehicle A is in traffic lane or **DRUM 024** if Vehicle A is travelling in a special purpose lane (including bike lane) or shoulder.
5		Vehicle A ran into the rear of Vehicle B, causing it to run into the back of Vehicle C.	Record as **DRUM 301** if Vehicle A is in traffic lane or **DRUM 023** if Vehicle A is travelling in a special purpose lane (including bike lane) or shoulder.
6		Vehicle B began to change lanes to pass Vehicle A, when driver saw Vehicle C and moved back into lane and hit Vehicle A.	Record as **DRUM 301** if Vehicle B is in traffic lane or **DRUM 023** if Vehicle B is travelling in a special purpose lane (including bike lane) or shoulder.
7		Vehicle B changed lanes to pass Vehicle A, did not see Vehicle C and hit Vehicle C.	Record as **DRUM 306** if Vehicle B is in traffic lane or **DRUM 021** if Vehicle B is travelling in a special purpose lane (including bike lane) or shoulder.

Example #	Example Diagram	Description of Example	DRUM Code used
8		Vehicle A travelling west struck Vehicle B travelling East. Vehicles hit drivers' side panels. Vehicle A rolled end over end. Vehicle B continued East for 150 m then ran off the road to the right.	Record as **DRUM 201**.
9		Vehicle A travelling east and making right turn into his driveway hit Vehicle B (motorcycle). The rider was thrown from the motorcycle and the motorcycle hit power pole.	Record as **DRUM 202**.
10		All the vehicles proceeded when the signals turned green. Vehicles E and F suddenly stopped and then turned right into street. Vehicle A (travelling straight ahead) applied brakes to avoid hitting F who was blocking the intersection. Unable to stop in time, Vehicle B struck Vehicle A, Vehicle C struck Vehicle B, Vehicle D struck Vehicle C (4 car nose-to-tail).	Record as **DRUM 301**.
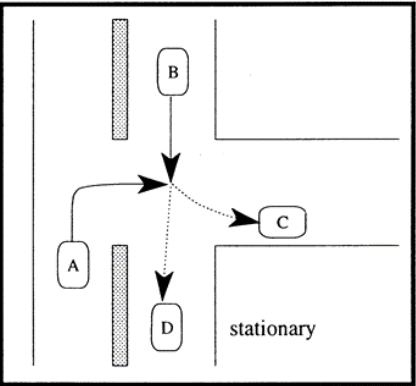
Example #	Example Diagram	Description of Example	DRUM Code used
11		Vehicle A travelling south on the South-East Freeway, lost control skidded and collided with power pole on the raised median, Vehicle A then swung back across road hitting Vehicle B	Record as **DRUM 305** as while there was a **DRUM 709** prior, the impact with another vehicle takes precedence.
12		Vehicle A travelling south skidded on road due to oil film, lost control, slid sideways into adjacent lane (and stopped). Vehicle B also travelling south then collided with Vehicle A.	Record as **DRUM 608** as while there was a **DRUM 607** event (not a crash) prior, the impact with another stopped vehicle takes precedence.
13		Vehicle A stationary waiting to turn right is hit from behind by Vehicle B. Vehicle A is pushed by the impact into the path of Vehicle C which is approaching from opposite direction.	Record as **DRUM 303**.

Example #	Example Diagram	Description of Example	DRUM Code used
14		Vehicle A was travelling south around a bend lost control and travelled across the raised median and collided with Vehicle B which was travelling north on the other side of the road.	Record as **DRUM 201** as while there was a **DRUM 808** prior, the head-on impact with another vehicle takes precedence.
15		The vehicle was travelling east when the driver lost control and went off the road, onto the footway, to the left. The vehicle came back on the road where it rolled and came to rest on its wheels.	Record as **DRUM 705** as the vehicle did not crash prior to them losing control back in the traffic lanes, shoulder or bike lanes.
16		The vehicle travelling east, drifted off the bitumen onto the gravel shoulder on the north side and lost control. The vehicle then rolled and came to rest in the gravel shoulder on the south edge.	Record as **DRUM 705** as the vehicle did not crash prior to them losing control back in the traffic lanes, shoulder or bike lanes.

Example #	Example Diagram	Description of Example	DRUM Code used
17		Driver of parked Vehicle B returned to his car and stood beside the driver's door. Vehicle A hit the driver of B, knocking him to the ground.	Record as **DRUM 004**, assuming both Vehicle A and the Driver of Vehicle B are both either in the traffic lanes, special purpose lanes (including bike lane) or shoulder.
18		Vehicle B (a motorcycle) clipped rear of truck (Vehicle C). Vehicle B and rider went into path of Vehicle A. A hit B and the rider was thrown off onto the guard rail.	Record as **DRUM 301**.
19		There had been a crash and Vehicle B (a tow truck) was on the road attending the disabled vehicle with yellow lights flashing. Vehicle A pulled to the side, skidded on the gravel shoulder, and then sideswiped Vehicle B.	Record as **DRUM 608** as the vehicle did not crash prior to them hitting the stopped vehicle.

Example #	Example Diagram	Description of Example	DRUM Code used
20		Horse and rider (Vehicle B) travelling east on bitumen leading a horse on the gravel shoulder. Vehicle A pulled out a bit to overtake B. When A was alongside B, B reared up into the path of A. Vehicle A swerved to attempt to avoid B but was still struck. The swerving put A on the wrong side of the road, and it collided head-on with Vehicle C.	Record as **DRUM 500**.
21		Vehicle A was making a right turn through two lanes of traffic banked back from traffic signals. Vehicle B was proceeding in the third lane and hit Vehicle A. The impact diverted Vehicle A into Vehicle C that was stationary, waiting to turn right.	Record as **DRUM 202** if Vehicle B was in a traffic lane or as **DRUM 027** if Vehicle B was travelling in the special purpose lanes (including bike lane) or shoulder.

Example #	Example Diagram	Description of Example	DRUM Code used
22		Vehicles A and B travelling west. Vehicle A swerved to avoid a dog and went left into Vehicle B causing Vehicle B to hit light pole. Vehicle B continued and crashed through fence to hit Vehicle D, which was parked in the driveway. Meanwhile Vehicle A continued along the road hitting Vehicle C parked on south kerb. Vehicle A then hit a light pole and continued another 200 m before stopping.	Recorded as **DRUM 305**.
23		Vehicle A travelling south mounted the traffic island and collided with the signal pole, kerb barrier, retaining wall and power pole. Vehicle A then hit Vehicle B and then Vehicle C. Vehicle A was airborne for 40 m after hitting the power pole. Vehicle A came to rest on the right raised median strip.	Record as **DRUM 301** as while there was a **DRUM 709** prior, the impact with another vehicle takes precedence.
24		Vehicles A, B and C travelling north. Vehicle C began to overtake Vehicles A and B, and when alongside Vehicle B, Vehicle B began to pull out to overtake Vehicle A. Vehicle C swung to the right to avoid B and ran onto the gravel shoulder on the right-hand side of the road, skidded and swung back across the road striking Vehicle A which then ran off the road and overturned. Vehicle C was deflected back to the right and came to rest on the east side of the road.	Record as **DRUM 500** as while there was a **DRUM 502** prior, the impact with another vehicle takes precedence.

Example #	Example Diagram	Description of Example	DRUM Code used
25		Vehicle A turned right, hit Vehicle B. B deflected and hit Vehicle C which was waiting to turn right at the intersection, while Vehicle A pushed into Vehicle D which was stationary in the traffic line.	Record as **DRUM 202**.
26	-	Bicycle was travelling along the footpath when the chain came off causing the rider to fall on the surface.	Record as **DRUM 019**.
27	-	Vehicle A had to brake sharply when Vehicle B cut across in front of it. No collision took place, but the driver of vehicle A had a neck injury and was admitted to hospital the next day.	Record as **DRUM 900**.
28	-	A vehicle was travelling along when the bonnet flew open and broke the windscreen. The broken screen injured the passenger.	Record as **DRUM 900**.
29	-	A vehicle was proceeding along the road and a pedestrian stepped out from the kerb, the vehicle swerved and missed the pedestrian, but the driver lost control and the vehicle hit the kerb buckling the wheel.	Record as **DRUM 703** if hit the kerb to the left, or **DRUM 704** if hit kerb on the right.

Example #	Example Diagram	Description of Example	DRUM Code used
30	-	A mobile crane had turned right at an intersection and then the boom became entangled with overhead power lines spanning the road.	Record as **DRUM 605**.
31	-	Vehicle A moved left from lane 1 to lane 2 and in doing so caused Vehicle B to take evasive action by dropping the motorcycle on the road to avoid a collision.	Record as **DRUM 705** if the motorcycle was in a traffic lane or as **DRUM 029** if the motorcycle was travelling in the special purpose lane (including bike lane) or shoulder.

Appendix A   Commentary on Crash Type Classification

Multiple event crashes

When a crash occurs, it may involve a single event or several events. An example of a single event is when a vehicle reverses into the front of a parked vehicle and no further vehicle movement or action follows. An example of a crash which has two events is when a vehicle waiting to turn right is hit in the rear (first event) and is pushed into the opposing traffic stream and hit by a vehicle from the opposite direction (second event). It is important from both an analysis viewpoint and a costing viewpoint to recognise the multiple events in a crash and record them.

The selection of codes for the multiple event crash is an extension of the principles used in determining the appropriate code cell for the single event crash. For a multiple event crash the first question to be addressed is, where did a crash occur, and of what nature. Then the appropriate code cell is found by reference to the Decision Tree and the accompanying definitions. If there are two or more events in a crash, follow the first event to arrive at a DRUM code from the Decision Tree (refer to *DRUM Information (for TN206)* document, tab labelled 'Crash Coding Decision Tree'). However, each event in the crash can be assigned a code to indicate the series of events that occurred in the multi event crash.

Independent impacts

Some care should be exercised in deciding whether a crash is a multiple event crash or, say, two separate crashes. If some distinct time has passed between the first event and the second event they might be considered as two crashes, that is, an independent impact.

For example, if two cars had a rear end collision (Code 301) and then five minutes later another vehicle runs into the rear of rearmost crashed vehicle. This would be considered two separate crashes, the first being Code 301 and the second Code 608. Generally, these events would be reported on two crash reports but if they appeared on one report they should be treated as two crashes with a difference in the time of occurrence.

Supplementary codes

One or more supplementary codes may be added to a cell, or group of cells, to describe certain aspects of the location, crash type, type of object hit, type of animal, etc. For example, code 0010ELS means a type 001 crash (pedestrian hit from the right) where a pedestrian stepped from the kerb on a marked crosswalk and was hit by a vehicle entering the intersection and turning left in a slip lane. Supplementary coding guidance is attached at Appendix B.

Appendix B   Supplementary Crash Codes

The following are provided as examples of what can be done using supplementary codes with the main accident-type to describe further aspects. Space for four codes should be allowed in the computer record.

001-003	For intersection crashes, for vehicle movement code:	
		E for entering or,
		D for departing the intersection and additionally,
		L for left turn,
		T for straight through,
		R for right turn.
	Further codes apply if marked:	
		crosswalk (C) and/or
		a left turn slip lane (S).
	Example: Code 001 CELS indicates that pedestrian stepped from kerb on a marked crosswalk and was hit by a vehicle entering the intersection and turning left in a slip lane. If associated with boarding/alighting from vehicle, code the vehicle type e.g., bus, taxi.	
001-009	Code	M - if pedestrian stepped off median.
002	Code	vehicle type.
003	Code	E - for emerging, and vehicle type as for 002.
004	Code	1 - playing,
		2 - working,
		3 - lying,
		4 - standing,
		5 - unknown.
005	Code	0 - no paved footway,
		1 - paved footway present,
		2 - share path present.
006	as for 005.	
007	Type of driveway:	
	H - hostel, hotel, motel,	
	P - private,	
	F - factory,	
	C - commercial (including school, station),	
	L - loading bay.	
007, 008	Code	R - if vehicle was reversing.
009	Code	vehicle type,
		safety zone,
		to/from.
011-013	as for 001-003.	
014	Code	T - straight,
		C - curve,
		R - rail crossing.
015	as for 014.	

016	Code	E - vehicle entering the bikeway or shoulder from the footway, L - vehicle leaving the bikeway or shoulder into the footway.
017	as for 007.	
018	as for 001-003.	
019	Code, device or object hit: Use codes given in 2.5.1-3.4.	
021	Code	R - if vehicle reversing, S - if in traffic lanes in opposite direction of travel.
022	as for 014.	
023	as for 014.	
024	Code	A - angle parking, P - parallel parking.
025	Code	E - vehicle entering the traffic lane from the bikeway or shoulder, L - vehicle leaving the traffic lane into the bikeway or shoulder.
026-028	as for 001-003.	
029	Code, device or object hit: Use codes given in 2.5.1-3.4.	
201	as for 014.	
202	1st Code	D - driveway, M - median (opening), L – laneway.
	2nd Code	type of driveway (see 007).
203, 204, 205, 206	as for 202.	
207	P - hit parked vehicle, and see 202.	
302, 303	as for 202.	
301, 302, 303, 304	if at intersection, can add code	E - entering, D - departing, I - within intersection.
304	see 202.	
306	Code	P - presence of parked vehicle (i.e., reason for lane change).
307	see 306.	
308, 309	see 202.	
401, 402	1st Code	C - centre of road, K – kerb.
	2nd Code	A - angle parking, P - parallel parking.
403	see 401, 402.	
406	See 007, for types of driveways.	
	Code	R - if vehicle reversing, S - if in traffic lanes in opposite direction of travel.
504	Code	O - presence of opposing direction vehicle.

601, 602	see 401.
609	Code animal (see list in 2.5.1-3.4).
705	Two column code:

	1st Code If kerb hit:
	        KL - left,
	        KR – right.
	    If skidding on gravel shoulder
	        GL – left,
	        GR – right.

	2nd Code, device hit: Use codes given in 2.5.1-3.4.
701-707	1st Code, any device or object hit is coded as for 2nd code in 705. 2nd Code, X - if vehicle proceeds across the device into the opposing traffic lanes.
706, 707	see 202.
708	Any device mounted is coded as for 2nd code in 705.
709	Any device or object hit is coded as for 2nd code in 705.
801-804	Codes as for 701-705 plus Supp. code for L, R off.
805	Codes as for 705. Code R or L curve.
808	Any device mounted is coded as for 2nd code in 705.
809	Any device or object hit is coded as for 2nd code in 705.
906	Code animal (see list in 2.5.1-3.4).

Codes to be used when vehicle hits object/device/animal

Object codes

- 1.1. POLE (Telephone, light, electricity)
- 1.2. TREE (Including branches)
- 1.3. FENCE or WALL
- 1.4. LETTER BOX (For posting letters)
- 1.5. TRAM/BUS SHELTER'
- 1.6. TELEPHONE BOX
- 1.7. GUIDE POST
- 1.8. TRAFFIC SIGN (Includes post)
- 1.9. TRAFFIC SIGNAL (Includes pole)
- 1.10. METAL GUARD RAIL/CRASH RAIL - In traffic lanes, shoulders or bike lanes
- 1.11. FIRE HYDRANT
- 1.12. BUILDING, HOUSE
- 1.13. BRIDGE
- 1.14. CULVERT
- 1.15. DITCH, DRAIN (Table drain), GULLY
- 1.16. STREAM, RIVER, LAKE, DAM

1.17.   CLIFF

1.18.   EMBANKMENT

1.19.   MOTOR VEHICLE (Not in traffic lanes, shoulders or bike lanes)

1.20.   FLOODWATER

1.21.   ROCKS

1.22.   ROADWORKS - INCLUDING PILES OFSTONES, SAND

1.23.   POTHOLE

1.24.   POWER LINES

1.25.   OTHER

1.26.   WATER ON ROAD (Not floodwater)

1.27.   CONTCRETE GUARD RAIL

1.28.   WIRE ROPE BARRIER

Device codes

2.1.   MEDIAN

2.2.   SEPARATOR

2.3.   KERB

2.4.   TRAFFIC ISLAND

2.5.   ROUNDABOUT – INCLUDING SPLITTER ISLANDS

2.6.   SAFETY ZONE

2.7.   METAL GUARD RAIL - In traffic lanes, shoulders or bike lanes

2.8.   LATM DEVICE (hump, chicane, etc.)

2.9.   OTHER

2.10   CONTCRETE GUARD RAIL

2.11   WIRE ROPE BARRIER

2.12   PEDESTRIAN FENCING

Animal type codes

3.1.   STOCK (Cows, sheep, horses etc)

3.2.   WILD (Kangaroos, Wombats, wild horses etc)

3.3.   OTHER (Includes dogs, cats, birds)

Appendix C   Commentary on the History of DCA Codes and the Transition to DRUM Codes

Background

One of the basic tools for understanding what has happened during a crash is the road user movement or crash type (originally referred to as the RUM code when introduced in Victoria in 1968). *ARRB Technical Manual ATM 29* (Andreassen, 1991 and Andreassen, 1992) established the model guidelines for describing the procedures for deriving accident codes from a crash sketch and narrative contained in a police crash report. During the coding of information from the crash report form, each crash is given a Definition for Coding Accidents (DCA) code indicating the movements the involved road users were making when the crash occurred based on the established codes used by a particular road jurisdiction.

The Queensland Police Service (QPS) and the Queensland Department of Transport and Main Roads use such a protocol for assigning crash codes to reportable crashes that occur in Queensland. Through the use of DCA codes a practitioner is quickly able to identify any crash pattern at a particular location, which may suggest a common contributing factor, and hence lead to an appropriate countermeasure.

Incidents that occur between various road user types in the road reserve have historically been set up to accommodate motorised vehicles travelling in a lane. A review of Queensland's existing Definitions for Coding Accidents (DCA) highlighted that since its introduction back in the early 90's, there have been changes to descriptions of the road space, with additional lanes for different road users, additional modes of transport, and a lack of codes available in describing all crashes.

In early 2020, Transport and Main Roads identified that 45% of crashes involving bicycles entering a roadway may have been coded in a way that did not give a clear indication of the crash nature. This led to a series of meetings to explore this issue further, resulting in the identification of not just crashes involving bicycles entering from the footway being mis-represented, but a number of other crash types not being captured (due to the outdated methodology).

Subsequently, the reach of the project was expanded to review all DCA codes and to republish a fully revised set of DCA codes. This resulted in the identification of several new recommended crash types, each of which were added to the coding diagram.

The project drew this information together into a Technical Note with the outcome being the new Descriptions for Road User Movements (DRUM) protocol to replace the DCA protocol in Queensland. The new DRUM protocol and associated guidance was published in May 2023 in a new TN206 *Guide to Coding Crashes*.

Transition from DCA codes to DRUM codes

The transition from DCA to DRUM protocol is shown in Figure 1, with further explanation below.

Figure C1 – Transition from DCA to DRUM protocol
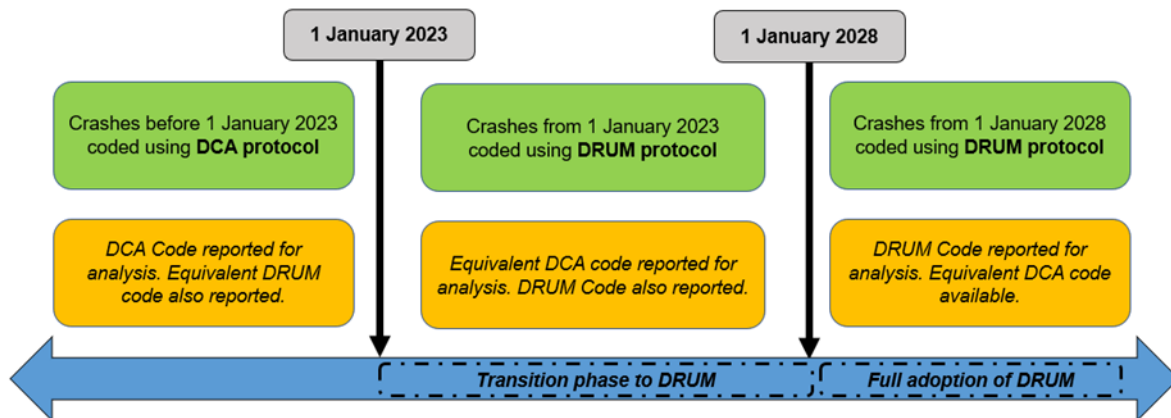
The new DRUM codes have been applied to crashes that occurred from the 1 January 2023. When reporting data, the new DRUM code will be converted to the old DCA code until there is at least five years of crash data available using the new DRUM codes. In the interim, both the DRUM code and the equivalent DCA code will be reported.

For crashes prior to 1 January 2023, the crash code assigned is based on the old DCA code protocol. An equivalent DRUM code will also be assigned so that in the future (after 5 years of DRUM coding) historical crash data analysis can be conducted using DRUM codes. The method used to assign the crash code, either DRUM or DCA protocol, will be flagged in the data. Table C1 shows the DRUM / DCA mapping depending on the year in which the crash occurred.

Table C1 – History of DCA/DRUM Codes

Crash		Translate to		Notes / Examples
Crash Year	Entered as	Type	Mapping Process	
<= 2022	DCA	DCA	Direct (code for code)	-
		DRUM	Direct (code for code)	DRUM contains DCA except 408. A DRUM 408 is required is display historic 408 crashes. The DRUM 408 is assigned to DRUM group 11 - Entering Roadway. Group mappings have changed.
>= 2023	DRUM	DCA	Lossy conversion to the 'best guess' alternative under DCA guidelines.	If coded under DCA Guidelines, what is now: • DRUM 01x and 02x series (new) are largely a one for one mapping to either DCA 400, 408 or 700, • DRUM 311 (new code) would have previously been coded to DCA 308 or 408 • DRUM 706 (guidelines changed) would have previously been coded to DCA 706, 703 or 704
		DRUM	Direct (code for code)	-

What has changed?

The key changes include:

- Changing to the new Descriptions for Road User Movements (DRUM) protocol to replace the DCA protocol in Queensland. Refer to Table C6 and C7 for the conversion tables: Guide to coding crashes for further information.

- Removal of DCA code 408 and replaced with a series of DRUM codes to more accurately reflect the nature of these crashes.

- Additional columns in the DCA chart to include crashes occurring on or from the footway (DRUM Codes 010 to 019) and non-traffic lane (DRUM Codes 020 to 029).

- Addition of DRUM Codes 110, 310, 311, 407, 611, 709, 710, and 809.

- Changing of the current 21 DCA groups to 23 DRUM groups, noting there has been some re-arrangement of DRUM groups and some of the codes within the groups, for example, DCA Group 12 Pedestrian is now DRUM Group 1 Hit Pedestrian (refer to the DRUM group comparison in Table C8 for further information).

- The updating of the DRUM code chart, DRUM cell definitions and the development of the DRUM coding decision tree to reflect the changes.

- Crash description heading changes for consistency and to better reflect the crash types.

The creation of the Technical Note has provided a central location for the DRUM code chart, DRUM cell definitions, DRUM coding decision tree and DRUM group information which will assist with version control of this information.

How to use the crash data

In the transition period (the next five years), both DRUM codes and DCA codes will be useful for difference scenarios. For crashes that have occurred from 1 January 2023, the crash will be coded based on the DRUM protocol and an equivalent DCA code will also be assigned.

Crashes that occurred before 1 January 2023, will be coded based on DCA protocol and an equivalent DRUM code will also be assigned.

Crash data reports will indicate which coding protocol has been applied to the data (based on the date the crash occurred) as well as the translated DCA or DRUM code. Table C1 and Table C2 show extracts of data indicating the coding protocol used for the sample data shown.

Table C1 – Crash Extract Sample with DRUM translation

CRASH_YEAR	...	CRASH_DRUM_TRANSLATION	CRASH_DRUM_CODE	CRASH_DRUM_DESCRIPTION	CRASH_DRUM_GROUP_CODE	CRASH_DRUM_GROUP_DESCRIPTION
2022		DCA->DRUM	301	Vehicles: Same Direction: Rear End	7	Rear End
2022		DCA->DRUM	301	Vehicles: Same Direction: Rear End	7	Rear End
2023		DRUM	301	Vehicles: Same Direction: Rear End	7	Rear End
2023		DRUM	803	Off Path: Curve: Off Right Bend Into Object	21	Off Path: On Curve: Hit Object

Table C2 – Crash Extract Sample with DCA translation

CRASH_YEAR	...	CRASH_DCA_TRANSLATION	CRASH_DCA_CODE	CRASH_DCA_DESCRIPTION	CRASH_DCA_GROUP_CODE	CRASH_DCA_GROUP_DESCRIPTION
2022		DCA	301	Vehs Same Direction: Rear End	4	Rear-end
2022		DCA	301	Vehs Same Direction: Rear End	4	Rear-end
2023		DRUM->DCA	301	Vehs Same Direction: Rear End	4	Rear-end
2023		DRUM->DCA	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	19	Off Carriageway on Curve Hit Object

For most data analysis the DCA codes and respective DCA groups will be used, particularly for historical data analysis and examining data over long time periods.

The DRUM codes may be useful when looking at an individual location or investigating crash by crash, particularly if the location has vulnerable road user interactions.

The current willingness to pay data and existing tools based on DCA crashes and DCA groups can still be used applying the historical and converted DCA codes. These existing tools will be updated over the transition period ready for application once five years of DRUM data is available.

Table C4 includes new DRUM codes with the equivalent DCA code. There are some DRUM codes that do not have an exact 1:1 mapping (that is, could have been multiple codes depending on specific crash circumstances). These DCA codes are listed in the "Mapping Notes" column. For these cases, the most likely DCA code that would have been used is listed. For example, a DRUM 311 maps to DCA 308, but could have instead been a DCA 408. Therefore, users of the data should be aware of these alternate codes when analysing data. Any codes not listed below have the same or like for like DCA and DRUM code.

Table C4 – New DRUM Codes and their DCA Code Mapping

DRUM Code	DCA Code	Mapping Notes
010	400	
011	408	
012	408	
013	408	
014	400	
015	400	
016	700	
017	400	
018	408	
019	400	
020	400	
021	408	
022	400	
023	400	
024	400	
025	700	
026	408	
027	408	
028	408	
029	400	
110	100	
310	306	
311	308	308/408
407	400	
611	607	
709	708	708/704
710	700	
809	808	808/803/804

Table C5 lists DRUM codes that have a primary mapping to the same code, but could have been coded to a different DCA code. i.e. a DRUM 308 would have been either a DCA 308 or DCA 408, but more were coded as DCA 308.

For a full list of the mapping from DRUM to DCA Codes, and DCA to DRUM codes, refer to Table C6 and Table C7.

Table C5 – DRUM Codes with Primary DCA Code / Alternate DCA Code

DRUM CODE	TO DCA CODE	NOTES
308	308	308/408
601	601	601/703
602	602	602/703
604	604	604/703
605	605	605/703
706	706	706/703/704
707	707	707/703/704
708	708	708/704
806	806	806/803/804
807	807	807/803/804
808	808	808/803/804

It is important when using DCA groups or DRUM groups for crash analysis to be mindful of the changes between the group classifications to ensure you are capturing the intended crashes into the analysis. Table C8 provides the comparison of the DCA group and DRUM codes and the changes that have been made to the grouping of crashes and the group numbering. When undertaking a historic comparison of data ensure you are working solely within either DRUM groups or DCA groups, and not a mix of both.

DRUM / DCA Translation Tables

Table C6 – DRUM to DCA Translation

DRUM Code	DRUM Label	DRUM Group	DRUM Group Label	-->	DCA Code	DCA Label	DCA Group	DCA Group Label
000	Pedestrian: Other	01	Hit Pedestrian	-->	000	Pedn: Hit Other	21	Other
001	Pedestrian: Near Side	01	Hit Pedestrian	-->	001	Pedn: Near Side Vehicle Hit From Right	12	Pedestrian
002	Pedestrian: Emerging	01	Hit Pedestrian	-->	002	Pedn: Hit Emerging Behind Vehicle	12	Pedestrian
003	Pedestrian: Far Side	01	Hit Pedestrian	-->	003	Pedn: Far Side Vehicle Hit From Left	12	Pedestrian
004	Pedestrian: Playing; Working; Lying; Standing In Traffic Lane	01	Hit Pedestrian	-->	004	Pedn: Play; Work; Stand; Lie On Cway	12	Pedestrian
005	Pedestrian: Walking With Traffic	01	Hit Pedestrian	-->	005	Pedn: Hit Walking With Traffic	12	Pedestrian
006	Pedestrian: Facing Traffic	01	Hit Pedestrian	-->	006	Pedn: Hit Facing Traffic	12	Pedestrian
007	Pedestrian: Driveway	01	Hit Pedestrian	-->	007	Pedn: Hit By Vehicle Enter/Leave Dway	12	Pedestrian
008	Pedestrian: On Footway	01	Hit Pedestrian	-->	008	Pedn: On Ftway Hit By Vehicle On Ftway	12	Pedestrian
009	Pedestrian: Struck While Boarding Or Alighting	01	Hit Pedestrian	-->	009	Pedn: Hit While Boarding/Alighting	12	Pedestrian
010	Footway: Other	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
011	Footway: Near Side	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
012	Footway: Emerging	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
013	Footway: Far Side	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
014	Footway: Head-On	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
015	Footway: Rear End	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
016	Footway: Enter Footway	02	On Footway	-->	700	Off Path-Straight: Other	21	Other
017	Footway: Driveway	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
018	Footway: Crossing Intersection	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
019	Footway: Out Of Control On Footway	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
020	Non-Traffic Lane Road: Other	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
021	Non-Traffic Lane Road: Enter Traffic Lane	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
022	Non-Traffic Lane Road: Head-On	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
023	Non-Traffic Lane Road: Rear End	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
024	Non-Traffic Lane Road: Parked	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
025	Non-Traffic Lane Road: Enter Non-Traffic Lane Road	03	On Road: Non-Traffic Lane	-->	700	Off Path-Straight: Other	21	Other
026	Non-Traffic Lane Road: Parallel Turning	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
027	Non-Traffic Lane Road: Opposing Turning	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
028	Non-Traffic Lane Road: Adjacent Approach	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
029	Non-Traffic Lane Road: Out Of Control On Non-Traffic Lane Road	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
100	Vehicles: Adjacent Approach: Other	04	Intersection: Adjacent Approach	-->	100	Vehs Adjacent Approach: Other	01	Intersection: Adjacent Approach
101	Vehicles: Adjacent Approach: Thru-Thru	04	Intersection: Adjacent Approach	-->	101	Vehs Adjacent Approach: Thru-Thru	01	Intersection: Adjacent Approach
102	Vehicles: Adjacent Approach: Right-Thru	04	Intersection: Adjacent Approach	-->	102	Vehs Adjacent Approach: Right-Thru	01	Intersection: Adjacent Approach
103	Vehicles: Adjacent Approach: Left-Thru	04	Intersection: Adjacent Approach	-->	103	Vehs Adjacent Approach: Left-Thru	01	Intersection: Adjacent Approach
104	Vehicles: Adjacent Approach: Thru-Right	04	Intersection: Adjacent Approach	-->	104	Vehs Adjacent Approach: Thru-Right	01	Intersection: Adjacent Approach
105	Vehicles: Adjacent Approach: Right-Right	04	Intersection: Adjacent Approach	-->	105	Vehs Adjacent Approach: Right-Right	01	Intersection: Adjacent Approach
106	Vehicles: Adjacent Approach: Left-Right	04	Intersection: Adjacent Approach	-->	106	Vehs Adjacent Approach: Left-Right	01	Intersection: Adjacent Approach
107	Vehicles: Adjacent Approach: Thru-Left	04	Intersection: Adjacent Approach	-->	107	Vehs Adjacent Approach: Thru-Left	01	Intersection: Adjacent Approach
108	Vehicles: Adjacent Approach: Right-Left	04	Intersection: Adjacent Approach	-->	108	Vehs Adjacent Approach: Right-Left	01	Intersection: Adjacent Approach
109	Vehicles: Adjacent Approach: Left-Left	04	Intersection: Adjacent Approach	-->	109	Vehs Adjacent Approach: Left-Left	01	Intersection: Adjacent Approach
110	Vehicles: Adjacent Approach: U-turn	10	U-turn	-->	100	Vehs Adjacent Approach: Other	01	Intersection: Adjacent Approach
200	Vehicles: Opposite Approach: Other	05	Opposing Vehicles Turning	-->	200	Vehs Opposite Approach: Other	21	Other
201	Vehicles: Opposite Approach: Head-On	06	Head-on	-->	201	Vehs Opposite Approach: Head-On	02	Head-on
202	Vehicles: Opposite Approach: Thru-Right	05	Opposing Vehicles Turning	-->	202	Vehs Opposite Approach: Thru-Right	03	Opposing Vehicles Turning
203	Vehicles: Opposite Approach: Right-Left	05	Opposing Vehicles Turning	-->	203	Vehs Opposite Approach: Right-Left	03	Opposing Vehicles Turning
204	Vehicles: Opposite Approach: Right-Right	05	Opposing Vehicles Turning	-->	204	Vehs Opposite Approach: Right-Right	03	Opposing Vehicles Turning
205	Vehicles: Opposite Approach: Through-Left	05	Opposing Vehicles Turning	-->	205	Vehs Opposite Approach: Thru-Left	03	Opposing Vehicles Turning
206	Vehicles: Opposite Approach: Left-Left	05	Opposing Vehicles Turning	-->	206	Vehs Opposite Approach: Left-Left	03	Opposing Vehicles Turning
207	Vehicles: Opposite Approach: U-Turn	10	U-turn	-->	207	Vehs Opposite Approach: U-Turn	07	U-turn
300	Vehicles: Same Direction: Other	07	Rear End	-->	300	Vehs Same Direction: Other	21	Other
301	Vehicles: Same Direction: Rear End	07	Rear End	-->	301	Vehs Same Direction: Rear End	04	Rear-end
302	Vehicles: Same Direction: Left Rear	07	Rear End	-->	302	Vehs Same Direction: Left Rear	04	Rear-end
303	Vehicles: Same Direction: Right Rear	07	Rear End	-->	303	Vehs Same Direction: Right Rear	04	Rear-end
304	Vehicles: Same Direction: U-Turn Rear	10	U-turn	-->	304	Vehs Same Direction: U-Turn	07	U-turn
305	Vehicles: Same Direction: Lane Sideswipe	08	Lane Change	-->	305	Vehs Same Direction: Lane Side Swipe	05	Lane Change
306	Vehicles: Same Direction: Lane Change Right	08	Lane Change	-->	306	Vehs Same Direction: Lane Change Right	05	Lane Change
307	Vehicles: Same Direction: Lane Change Left	08	Lane Change	-->	307	Vehs Same Direction: Lane Change Left	05	Lane Change
308	Vehicles: Same Direction: Right Turn Sideswipe	09	Parallel Lanes Turning	-->	308	Vehs Same Direction: Right Turn S/Swipe	06	Parallel Lanes Turning
309	Vehicles: Same Direction: Left Turn Sideswipe	09	Parallel Lanes Turning	-->	309	Vehs Same Direction: Left Turn S/Swipe	06	Parallel Lanes Turning
310	Vehicles: Same Direction: Pulling Out	08	Lane Change	-->	306	Vehs Same Direction: Lane Change Right	05	Lane Change
311	Vehicles: Same Direction: U-Turn	10	U-turn	-->	308	Vehs Same Direction: Right Turn S/Swipe	06	Parallel Lanes Turning
400	Vehicles: Manoeuvring: Other	13	Hit Parked Vehicle	-->	400	Vehs Manoeuvring: Other	21	Other
401	Vehicles: Manoeuvring: Leaving Parking	11	Entering Roadway	-->	401	Vehs Manoeuvring: Leaving Parking	08	Vehicle Leaving Driveway
402	Vehicles: Manoeuvring: Parking	13	Hit Parked Vehicle	-->	402	Vehs Manoeuvring: Parking	10	Hit Parked Vehicle
403	Vehicles: Manoeuvring: Parking Vehicles Only	13	Hit Parked Vehicle	-->	403	Vehs Manoeuvring: Parking Vehs Only	21	Other
404	Vehicles: Manoeuvring: Reversing In Traffic	23	Other	-->	404	Vehs Manoeuvring: Reversing	10	Hit Parked Vehicle
405	Vehicles: Manoeuvring: Reversing Into Fixed Object	15	Hit Obstruction	-->	405	Vehs Manoeuvring: Rev Into Fixed Object	21	Other
406	Vehicles: Manoeuvring: Leaving Driveway	11	Entering Roadway	-->	406	Vehs Manoeuvring: Leaving Driveway	08	Vehicle Leaving Driveway
407	Vehicles: Manoeuvring: Leaving Driveway Hit Object	11	Entering Roadway	-->	400	Vehs Manoeuvring: Other	21	Other
408	Vehicles: Manoeuvring: Entering From Footway	11	Entering Roadway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
500	Vehicles: Overtaking: Other	12	Overtaking / Same Direction	-->	500	Vehs Overtaking: Other	21	Other
501	Vehicles: Overtaking: Head-On	06	Head-on	-->	501	Vehs Overtaking: Head-On	02	Head-on
502	Vehicles: Overtaking: Out Of Control	12	Overtaking / Same Direction	-->	502	Vehs Overtaking: Out Of Control	15	Off Carriageway on Straight
503	Vehicles: Overtaking: Pulling Out	12	Overtaking / Same Direction	-->	503	Vehs Overtaking: Pulling Out	09	Overtaking Same Direction
504	Vehicles: Overtaking: Cutting In	12	Overtaking / Same Direction	-->	504	Vehs Overtaking: Cutting In	05	Lane Change
505	Vehicles: Overtaking: Pulling Out Rear End	12	Overtaking / Same Direction	-->	505	Vehs Overtaking: Pulling Out Rear End	09	Overtaking Same Direction
506	Vehicles: Overtaking: Overtaking Right Turn	12	Overtaking / Same Direction	-->	506	Vehs Overtaking: Overtake-Right Turn	09	Overtaking Same Direction
600	Vehicles: On Path: Other	13	Hit Parked Vehicle	-->	600	Vehs On Path: Other	21	Other
601	Vehicles: On Path: Parked	13	Hit Parked Vehicle	-->	601	Vehs On Path: Parked	10	Hit Parked Vehicle
602	Vehicles: On Path: Double Parked	13	Hit Parked Vehicle	-->	602	Vehs On Path: Double Parked	10	Hit Parked Vehicle
604	Vehicles: On Path: Car Door	13	Hit Parked Vehicle	-->	604	Vehs On Path: Car Door	10	Hit Parked Vehicle
605	Vehicles: On Path: Hit Permanent Obstruction	15	Hit Obstruction	-->	605	Vehs On Path: Permanent Obstruction	13	Hit Permanent Obstruction on Carriageway
606	Vehicles: On Path: Hit Temporary Roadworks	15	Hit Obstruction	-->	606	Vehs On Path: Temporary Roadworks	21	Other
607	Vehicles: On Path: Hit Temporary Object On Traffic Lane	15	Hit Obstruction	-->	607	Vehs On Path: Temporary Object On Cway	21	Other
608	Vehicles: On Path: Crash Or Broken Down	15	Hit Obstruction	-->	608	Vehs On Path: Accident Or Broken Down	10	Hit Parked Vehicle
609	Vehicles: On Path: Animal	16	Hit Animal	-->	609	Pass & Misc: Hit Animal	14	Hit Animal
610	Vehicles: On Path: Load Hits Vehicle	23	Other	-->	610	Pass & Misc: Load Hit Vehicle	21	Other
611	Vehicles: On Path: Water On Road	15	Hit Obstruction	-->	607	Vehs On Path: Temporary Object On Cway	21	Other
700	Off Path: Straight: Other	17	Off Path: On Straight	-->	700	Off Path-Straight: Other	21	Other
701	Off Path: Straight: Off To Left	17	Off Path: On Straight	-->	701	Off Path-Straight: Left Off Cway	15	Off Carriageway on Straight
702	Off Path: Straight: Off To Right	17	Off Path: On Straight	-->	702	Off Path-Straight: Right Off Cway	15	Off Carriageway on Straight
703	Off Path: Straight: Left Into Object	18	Off Path: On Straight: Hit Object	-->	703	Off Path-Straight: Left Off Cway Hit Obj	16	Off Carriageway on Straight Hit Object
704	Off Path: Straight: Right Off Into Object	18	Off Path: On Straight: Hit Object	-->	704	Off Path-Straight:Right Off Cway Hit Obj	16	Off Carriageway on Straight Hit Object
705	Off Path: Straight: Out Of Control	19	Out of Control: On Straight	-->	705	Off Path-Straight:Out Of Control On Cway	17	Out of Control on Straight
706	Off Path: Straight: Left Turn	17	Off Path: On Straight	-->	706	Off Path-Straight: Left Turn	15	Off Carriageway on Straight
707	Off Path: Straight: Right Turn	17	Off Path: On Straight	-->	707	Off Path-Straight: Right Turn	15	Off Carriageway on Straight
708	Off Path: Straight: Enters Median	17	Off Path: On Straight	-->	708	Off Path-Straight: Mounts Traffic Island	16	Off Carriageway on Straight Hit Object
709	Off Path: Straight: Hit Object In Median	18	Off Path: On Straight: Hit Object	-->	708	Off Path-Straight: Mounts Traffic Island	16	Off Carriageway on Straight Hit Object
710	Off Path: Straight: Off End Of Road/Intersection	17	Off Path: On Straight	-->	700	Off Path-Straight: Other	21	Other
800	Off Path: Curve: Other	20	Off Path: On Curve	-->	800	Off Path-Curve: Other	21	Other
801	Off Path: Curve: Off Right Bend	20	Off Path: On Curve	-->	801	Off Path-Curve: Off Cway Right Bend	18	Off Carriageway on Curve
802	Off Path: Curve: Off Left Bend	20	Off Path: On Curve	-->	802	Off Path-Curve: Off Cway Left Bend	18	Off Carriageway on Curve
803	Off Path: Curve: Off Right Bend Into Object	21	Off Path: On Curve: Hit Object	-->	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	19	Off Carriageway on Curve Hit Object
804	Off Path: Curve: Off Left Bend Into Object	21	Off Path: On Curve: Hit Object	-->	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	19	Off Carriageway on Curve Hit Object
805	Off Path: Curve: Out Of Control On Bend	22	Out of Control: On Curve	-->	805	Off Path-Curve: Out Of Control On Cway	20	Out of Control on Curve
806	Off Path: Curve: Left Turn On Bend	20	Off Path: On Curve	-->	806	Vehicle Left-Turning At I/S (Or Driveway)	20	Out of Control on Curve
807	Off Path: Curve: Right Turn On Bend	20	Off Path: On Curve	-->	807	Vehicle Right-Turning At I/S (Or Driveway	20	Out of Control on Curve
808	Off Path: Curve: Enters Median On Bend	20	Off Path: On Curve	-->	808	Off Path-Curve: Mounts Traffic Island	19	Off Carriageway on Curve Hit Object
809	Off Path: Curve: Hit Object In Median On Bend	21	Off Path: On Curve: Hit Object	-->	808	Off Path-Curve: Mounts Traffic Island	19	Off Carriageway on Curve Hit Object
900	Passenger And Miscellaneous: Other	23	Other	-->	900	Pass & Misc: Other	21	Other
901	Passenger And Miscellaneous: Fell In / From Vehicle	23	Other	-->	901	Pass & Misc: Fell In/From Vehicle	21	Other
903	Passenger And Miscellaneous: Hit Train / Tram	14	Hit Train / Tram	-->	903	Pass & Misc: Hit Train	11	Train
904	Passenger And Miscellaneous: Hit Railway Crossing Furniture	15	Hit Obstruction	-->	904	Pass & Misc: Hit Railway Xing Furniture	16	Off Carriageway on Straight Hit Object
905	Passenger And Miscellaneous: Hit Animal Off Path	16	Hit Animal	-->	905	Pass & Misc: Hit Animal Off Carriageway	14	Hit Animal
906	Passenger And Miscellaneous: Parked Vehicle Ran Away	23	Other	-->	906	Pass & Misc: Parked Car Ran Away	21	Other
907	Passenger And Miscellaneous: Vehicle Movements Not Known	23	Other	-->	907	Pass & Misc: Vehicle Movements Not Known	21	Other
UNK	Unknown	UN	Unknown	-->	UNK	Unknown	UNK	Unknown

Table C7 – DCA to DRUM Translation

DRUM Code	DRUM Label	DRUM Group	DRUM Group Label	-->	DCA Code	DCA Label	DCA Group	DCA Group Label
000	Pedestrian: Other	01	Hit Pedestrian	-->	000	Pedn: Hit Other	21	Other
001	Pedestrian: Near Side	01	Hit Pedestrian	-->	001	Pedn: Near Side Vehicle Hit From Right	12	Pedestrian
002	Pedestrian: Emerging	01	Hit Pedestrian	-->	002	Pedn: Hit Emerging Behind Vehicle	12	Pedestrian
003	Pedestrian: Far Side	01	Hit Pedestrian	-->	003	Pedn: Far Side Vehicle Hit From Left	12	Pedestrian
004	Pedestrian: Playing; Working; Lying; Standing In Traffic Lane	01	Hit Pedestrian	-->	004	Pedn: Play; Work; Stand; Lie On Cway	12	Pedestrian
005	Pedestrian: Walking With Traffic	01	Hit Pedestrian	-->	005	Pedn: Hit Walking With Traffic	12	Pedestrian
006	Pedestrian: Facing Traffic	01	Hit Pedestrian	-->	006	Pedn: Hit Facing Traffic	12	Pedestrian
007	Pedestrian: Driveway	01	Hit Pedestrian	-->	007	Pedn: Hit By Vehicle Enter/Leave Dway	12	Pedestrian
008	Pedestrian: On Footway	01	Hit Pedestrian	-->	008	Pedn: On Ftway Hit By Vehicle On Ftway	12	Pedestrian
009	Pedestrian: Struck While Boarding Or Alighting	01	Hit Pedestrian	-->	009	Pedn: Hit While Boarding/Alighting	12	Pedestrian
010	Footway: Other	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
011	Footway: Near Side	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
012	Footway: Emerging	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
013	Footway: Far Side	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
014	Footway: Head-On	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
015	Footway: Rear End	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
016	Footway: Enter Footway	02	On Footway	-->	700	Off Path-Straight: Other	21	Other
017	Footway: Driveway	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
018	Footway: Crossing Intersection	02	On Footway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
019	Footway: Out Of Control On Footway	02	On Footway	-->	400	Vehs Manoeuvring: Other	21	Other
020	Non-Traffic Lane Road: Other	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
021	Non-Traffic Lane Road: Enter Traffic Lane	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
022	Non-Traffic Lane Road: Head-On	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
023	Non-Traffic Lane Road: Rear End	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
024	Non-Traffic Lane Road: Parked	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
025	Non-Traffic Lane Road: Enter Non-Traffic Lane Road	03	On Road: Non-Traffic Lane	-->	700	Off Path-Straight: Other	21	Other
026	Non-Traffic Lane Road: Parallel Turning	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
027	Non-Traffic Lane Road: Opposing Turning	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
028	Non-Traffic Lane Road: Adjacent Approach	03	On Road: Non-Traffic Lane	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
029	Non-Traffic Lane Road: Out Of Control On Non-Traffic Lane Road	03	On Road: Non-Traffic Lane	-->	400	Vehs Manoeuvring: Other	21	Other
100	Vehicles: Adjacent Approach: Other	04	Intersection: Adjacent Approach	-->	100	Vehs Adjacent Approach: Other	01	Intersection: Adjacent Approach
101	Vehicles: Adjacent Approach: Thru-Thru	04	Intersection: Adjacent Approach	-->	101	Vehs Adjacent Approach: Thru-Thru	01	Intersection: Adjacent Approach
102	Vehicles: Adjacent Approach: Right-Thru	04	Intersection: Adjacent Approach	-->	102	Vehs Adjacent Approach: Right-Thru	01	Intersection: Adjacent Approach
103	Vehicles: Adjacent Approach: Left-Thru	04	Intersection: Adjacent Approach	-->	103	Vehs Adjacent Approach: Left-Thru	01	Intersection: Adjacent Approach
104	Vehicles: Adjacent Approach: Thru-Right	04	Intersection: Adjacent Approach	-->	104	Vehs Adjacent Approach: Thru-Right	01	Intersection: Adjacent Approach
105	Vehicles: Adjacent Approach: Right-Right	04	Intersection: Adjacent Approach	-->	105	Vehs Adjacent Approach: Right-Right	01	Intersection: Adjacent Approach
106	Vehicles: Adjacent Approach: Left-Right	04	Intersection: Adjacent Approach	-->	106	Vehs Adjacent Approach: Left-Right	01	Intersection: Adjacent Approach
107	Vehicles: Adjacent Approach: Thru-Left	04	Intersection: Adjacent Approach	-->	107	Vehs Adjacent Approach: Thru-Left	01	Intersection: Adjacent Approach
108	Vehicles: Adjacent Approach: Right-Left	04	Intersection: Adjacent Approach	-->	108	Vehs Adjacent Approach: Right-Left	01	Intersection: Adjacent Approach
109	Vehicles: Adjacent Approach: Left-Left	04	Intersection: Adjacent Approach	-->	109	Vehs Adjacent Approach: Left-Left	01	Intersection: Adjacent Approach
110	Vehicles: Adjacent Approach: U-Turn	10	U-turn	-->	100	Vehs Adjacent Approach: Other	01	Intersection: Adjacent Approach
200	Vehicles: Opposite Approach: Other	05	Opposing Vehicles Turning	-->	200	Vehs Opposite Approach: Other	21	Other
201	Vehicles: Opposite Approach: Head-On	06	Head-on	-->	201	Vehs Opposite Approach: Head On	02	Head-on
202	Vehicles: Opposite Approach: Thru-Right	05	Opposing Vehicles Turning	-->	202	Vehs Opposite Approach: Thru-Right	03	Opposing Vehicles Turning
203	Vehicles: Opposite Approach: Right-Left	05	Opposing Vehicles Turning	-->	203	Vehs Opposite Approach: Right-Left	03	Opposing Vehicles Turning
204	Vehicles: Opposite Approach: Right-Right	05	Opposing Vehicles Turning	-->	204	Vehs Opposite Approach: Right-Right	03	Opposing Vehicles Turning
205	Vehicles: Opposite Approach: Through-Left	05	Opposing Vehicles Turning	-->	205	Vehs Opposite Approach: Thru-Left	03	Opposing Vehicles Turning
206	Vehicles: Opposite Approach: Left-Left	05	Opposing Vehicles Turning	-->	206	Vehs Opposite Approach: Left-Left	03	Opposing Vehicles Turning
207	Vehicles: Opposite Approach: U-Turn	10	U-turn	-->	207	Vehs Opposite Approach: U-turn	07	U-turn
300	Vehicles: Same Direction: Other	07	Rear End	-->	300	Vehs Same Direction: Other	21	Other
301	Vehicles: Same Direction: Rear End	07	Rear End	-->	301	Vehs Same Direction: Rear End	04	Rear-end
302	Vehicles: Same Direction: Left Rear	07	Rear End	-->	302	Vehs Same Direction: Left Rear	04	Rear-end
303	Vehicles: Same Direction: Right Rear	07	Rear End	-->	303	Vehs Same Direction: Right Rear	04	Rear-end
304	Vehicles: Same Direction: U-Turn Rear	10	U-turn	-->	304	Vehs Same Direction: U-Turn	07	U-turn
305	Vehicles: Same Direction: Lane Sideswipe	08	Lane Change	-->	305	Vehs Same Direction: Lane Side Swipe	05	Lane Change
306	Vehicles: Same Direction: Lane Change Right	08	Lane Change	-->	306	Vehs Same Direction: Lane Change Right	05	Lane Change
307	Vehicles: Same Direction: Lane Change Left	08	Lane Change	-->	307	Vehs Same Direction: Lane Change Left	05	Lane Change
308	Vehicles: Same Direction: Right Turn Sideswipe	09	Parallel Lanes Turning	-->	308	Vehs Same Direction: Right Turn S/Swipe	06	Parallel Lanes Turning
309	Vehicles: Same Direction: Left Turn Sideswipe	09	Parallel Lanes Turning	-->	309	Vehs Same Direction: Left Turn S/Swipe	06	Parallel Lanes Turning
310	Vehicles: Same Direction: Pulling Out	08	Lane Change	-->	306	Vehs Same Direction: Lane Change Right	05	Lane Change
311	Vehicles: Same Direction: U-Turn	10	U-turn	-->	308	Vehs Same Direction: Right Turn S/Swipe	06	Parallel Lanes Turning
400	Vehicles: Manoeuvring: Other	13	Hit Parked Vehicle	-->	400	Vehs Manoeuvring: Other	21	Other
401	Vehicles: Manoeuvring: Leaving Parking	11	Entering Roadway	-->	401	Vehs Manoeuvring: Leaving Parking	08	Vehicle Leaving Driveway
402	Vehicles: Manoeuvring: Parking	13	Hit Parked Vehicle	-->	402	Vehs Manoeuvring: Parking	10	Hit Parked Vehicle
403	Vehicles: Manoeuvring: Parking Vehicles Only	13	Hit Parked Vehicle	-->	403	Vehs Manoeuvring: Parking Vehs Only	21	Other
404	Vehicles: Manoeuvring: Reversing In Traffic	23	Other	-->	404	Vehs Manoeuvring: Reversing	10	Hit Parked Vehicle
405	Vehicles: Manoeuvring: Reversing Into Fixed Object	15	Hit Obstruction	-->	405	Vehs Manoeuvring: Rev Into Fixed Object	21	Other
406	Vehicles: Manoeuvring: Leaving Driveway	11	Entering Roadway	-->	406	Vehs Manoeuvring: Leaving Driveway	08	Vehicle Leaving Driveway
407	Vehicles: Manoeuvring: Leaving Driveway Hit Object	11	Entering Roadway	-->	400	Vehs Manoeuvring: Other	21	Other
408	Vehicles: Manoeuvring: Entering From Footway	11	Entering Roadway	-->	408	Vehs Manoeuvring: Entering From Footway	08	Vehicle Leaving Driveway
500	Vehicles: Overtaking: Other	12	Overtaking / Same Direction	-->	500	Vehs Overtaking: Other	21	Other
501	Vehicles: Overtaking: Head-On	06	Head-on	-->	501	Vehs Overtaking: Head On	02	Head-on
502	Vehicles: Overtaking: Out Of Control	12	Overtaking / Same Direction	-->	502	Vehs Overtaking: Out Of Control	15	Off Carriageway on Straight
503	Vehicles: Overtaking: Pulling Out	12	Overtaking / Same Direction	-->	503	Vehs Overtaking: Pulling Out	09	Overtaking Same Direction
504	Vehicles: Overtaking: Cutting In	12	Overtaking / Same Direction	-->	504	Vehs Overtaking: Cutting In	05	Lane Change
505	Vehicles: Overtaking: Pulling Out Rear End	12	Overtaking / Same Direction	-->	505	Vehs Overtaking: Pulling Out Rear End	09	Overtaking Same Direction
506	Vehicles: Overtaking: Overtaking Right Turn	12	Overtaking / Same Direction	-->	506	Vehs Overtaking: Overtake-Right Turn	09	Overtaking Same Direction
600	Vehicles: On Path: Other	13	Hit Parked Vehicle	-->	600	Vehs On Path: Other	21	Other
601	Vehicles: On Path: Parked	13	Hit Parked Vehicle	-->	601	Vehs On Path: Parked	10	Hit Parked Vehicle
602	Vehicles: On Path: Double Parked	13	Hit Parked Vehicle	-->	602	Vehs On Path: Double Parked	10	Hit Parked Vehicle
604	Vehicles: On Path: Car Door	13	Hit Parked Vehicle	-->	604	Vehs On Path: Car Door	10	Hit Parked Vehicle
605	Vehicles: On Path: Hit Permanent Obstruction	15	Hit Obstruction	-->	605	Vehs On Path: Permanent Obstruction	13	Hit Permanent Obstruction on Carriageway
606	Vehicles: On Path: Hit Temporary Roadworks	15	Hit Obstruction	-->	606	Vehs On Path: Temporary Roadworks	21	Other
607	Vehicles: On Path: Hit Temporary Object On Traffic Lane	15	Hit Obstruction	-->	607	Vehs On Path: Temporary Object On Cway	21	Other
608	Vehicles: On Path: Crash Or Broken Down	15	Hit Obstruction	-->	608	Vehs On Path: Accident Or Broken Down	10	Hit Parked Vehicle
609	Vehicles: On Path: Animal	16	Hit Animal	-->	609	Pass & Misc: Hit Animal	14	Hit Animal
610	Vehicles: On Path: Load Hits Vehicle	23	Other	-->	610	Pass & Misc: Load Hit Vehicle	21	Other
611	Vehicles: On Path: Water On Road	15	Hit Obstruction	-->	607	Vehs On Path: Temporary Object On Cway	21	Other
700	Off Path: Straight: Other	17	Off Path: On Straight	-->	700	Off Path-Straight: Other	21	Other
701	Off Path: Straight: Off To Left	17	Off Path: On Straight	-->	701	Off Path-Straight: Left Off Cway	15	Off Carriageway on Straight
702	Off Path: Straight: Off To Right	17	Off Path: On Straight	-->	702	Off Path-Straight: Right Off Cway	15	Off Carriageway on Straight
703	Off Path: Straight: Left Into Object	18	Off Path: On Straight: Hit Object	-->	703	Off Path-Straight: Left Off Cway Hit Obj	16	Off Carriageway on Straight Hit Object
704	Off Path: Straight: Right Off Into Object	18	Off Path: On Straight: Hit Object	-->	704	Off Path-Straight:Right Off Cway Hit Obj	16	Off Carriageway on Straight Hit Object
705	Off Path: Straight: Out Of Control	19	Out of Control: On Straight	-->	705	Off Path-Straight:Out Of Control On Cway	17	Out of Control on Straight
706	Off Path: Straight: Left Turn	17	Off Path: On Straight	-->	706	Off Path-Straight: Left Turn	15	Off Carriageway on Straight
707	Off Path: Straight: Right Turn	17	Off Path: On Straight	-->	707	Off Path-Straight: Right Turn	15	Off Carriageway on Straight
708	Off Path: Straight: Enters Median	17	Off Path: On Straight	-->	708	Off Path-Straight: Mounts Traffic Island	16	Off Carriageway on Straight Hit Object
709	Off Path: Straight: Hit Object In Median	18	Off Path: On Straight: Hit Object	-->	708	Off Path-Straight: Mounts Traffic Island	16	Off Carriageway on Straight Hit Object
710	Off Path: Straight: Off End Of Road/Intersection	17	Off Path: On Straight	-->	700	Off Path-Straight: Other	21	Other
800	Off Path: Curve: Other	20	Off Path: On Curve	-->	800	Off Path-Curve: Other	21	Other
801	Off Path: Curve: Off Right Bend	20	Off Path: On Curve	-->	801	Off Path-Curve: Off Cway Right Bend	18	Off Carriageway on Curve
802	Off Path: Curve: Off Left Bend	20	Off Path: On Curve	-->	802	Off Path-Curve: Off Cway Left Bend	18	Off Carriageway on Curve
803	Off Path: Curve: Off Right Bend Into Object	21	Off Path: On Curve: Hit Object	-->	803	Off Path-Curve: Off Cway Rt Bend Hit Obj	19	Off Carriageway on Curve Hit Object
804	Off Path: Curve: Off Left Bend Into Object	21	Off Path: On Curve: Hit Object	-->	804	Off Path-Curve: Off Cway Lt Bend Hit Obj	19	Off Carriageway on Curve Hit Object
805	Off Path: Curve: Out Of Control On Bend	22	Out of Control: On Curve	-->	805	Off Path-Curve: Out Of Control On Cway	20	Out of Control on Curve
806	Off Path: Curve: Left Turn On Bend	20	Off Path: On Curve	-->	806	Vehicle Left-Turning At I/S (Or Driveway	20	Out of Control on Curve
807	Off Path: Curve: Right Turn On Bend	20	Off Path: On Curve	-->	807	Vehicle Right-Turning At I/S (Or Drivewa	20	Out of Control on Curve
808	Off Path: Curve: Enters Median On Bend	20	Off Path: On Curve	-->	808	Off Path-Curve: Mounts Traffic Island	19	Off Carriageway on Curve Hit Object
809	Off Path: Curve: Hit Object In Median On Bend	21	Off Path: On Curve: Hit Object	-->	808	Off Path-Curve: Mounts Traffic Island	19	Off Carriageway on Curve Hit Object
900	Passenger And Miscellaneous: Other	23	Other	-->	900	Pass & Misc: Other	21	Other
901	Passenger And Miscellaneous: Fell In / From Vehicle	23	Other	-->	901	Pass & Misc: Fell In/From Vehicle	21	Other
903	Passenger And Miscellaneous: Hit Train / Tram	14	Hit Train / Tram	-->	903	Pass & Misc: Hit Train	11	Train
904	Passenger And Miscellaneous: Hit Railway Crossing Furniture	15	Hit Obstruction	-->	904	Pass & Misc: Hit Railway Xing Furniture	16	Off Carriageway on Straight Hit Object
905	Passenger And Miscellaneous: Hit Animal Off Path	16	Hit Animal	-->	905	Pass & Misc: Hit Animal Off Carriageway	14	Hit Animal
906	Passenger And Miscellaneous: Parked Vehicle Ran Away	23	Other	-->	906	Pass & Misc: Parked Car Ran Away	21	Other
907	Passenger And Miscellaneous: Vehicle Movements Not Known	23	Other	-->	907	Pass & Misc: Vehicle Movements Not Known	21	Other
UNK	Unknown	UN	Unknown	-->	UNK	Unknown	UNK	Unknown

Table C8 – DCA Groupings and DRUM Grouping Comparison

DCA Group	DCA Codes	DCA Description	DRUM Group	DRUM Description	DRUM Codes	Changes from DCA to DRUM Group
1	100–109	Intersection, from adjacent approaches	4	Intersection: Adjacent Approach	100-109	same
2	201, 501	Head-on	6	Head on	201, 501	same
3	202–206	Opposing vehicles, turning	5	Opposing Vehicles Turning	200, 202–206	added 200
4	301–303	Rear-end	7	Rear End	300–303	added 300
5	305–307, 504	Lane change	8	Lane Change	305–307, 310	added 310 / removed 504
6	308, 309	Parallel lanes, turning	9	Parallel Lanes Turning	308, 309	same
7	207, 304	U-turn	10	U-turn	110, 207, 304, 311	added 110, 311
8	401, 406–408	Entering roadway	11	Entering Roadway	401, 406, 407	added 407 removed 408
9	503, 505, 506	Overtaking, same direction	12	Overtaking / Same Direction	500, 502-506	added 500, 502, 504
10	402, 404, 601, 602, 604, 608	Hit parked vehicle	13	Hit Parked Vehicle	400, 402, 403, 600-602, 604	added 400, 403, 600, / removed 404, 608
11	903	Hit train	14	Hit Train / Tram	903	same
12	001–009	Pedestrian	1	Hit Pedestrian	000-009	added 000
13	605	Permanent obstruction on carriageway	15	Hit Obstruction	405, 605-608, 611, 904	added 405, 606, 607, 608, 611, 904
14	609, 905	Hit animal	16	Hit Animal	609, 905	same
15	502, 701, 702, 706, 707	Off carriageway, on straight	17	Off Path: On Straight	700-702, 706-708, 710	added 700, 708, 710 / removed 502,
16	703, 704, 904, 708	Off carriageway, on straight, hit object	18	Off Path: On Straight Hit Object	703, 704, 709	added 709 / removed 708, 904
17	705	Out of control, on straight	19	Out of Control, On Straight	705	same
18	801, 802	Off carriageway, on curve	20	Off Path: On Curve	800-802, 806-808	added 800, 806, 807, 808
19	803, 804, 808	Off carriageway, on curve, hit object	21	Off Path: On Curve Hit Object	803, 804, 809	added 809 / removed 808
20	805, 806, 807	Out of control, on curve	22	Out of Control, On Curve	805	removed 806, 807
21	000, 200, 300, 400, 500, 600, 700, 800, 900, 901, 906, 907, 403, 405, 606, 607, 610	Other	23	Other	404, 610, 900, 901, 906, 907	added 404 / removed 000, 200, 300, 400, 500, 600, 700, 800, 403, 405, 606, 607
N/A			2	On Footway	010-019	added 010-019
N/A			3	On Road: Non Traffic Lane Road	020-029	added 020-029

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