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**Concept CORE and PLUSSES Classification Scheme**

CONCEPT FOR DISCUSSION

<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Austrroads-26</span> <span style="background-color: #f4a460; padding: 5px 10px; font-weight: bold; color: white;">CORE</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Austrroads-26</span> <span style="background-color: #808080; padding: 5px 10px; font-weight: bold; color: white;">LENGTH</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Austrroads-26</span> <span style="background-color: #333; padding: 5px 10px; font-weight: bold; color: white;">plus EXTENDED AXLE</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Austrroads-26</span> <span style="background-color: #333; padding: 5px 10px; font-weight: bold; color: white;">plus VISUAL</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Austrroads-26</span> <span style="background-color: #333; padding: 5px 10px; font-weight: bold; color: white;">plus ADDITIONAL</span> </div>
<p>Intended to be the basic classification set, widely deployed and used, highly comparable and repeatable, performed to very high accuracy standard, definitions very stable over time</p> <p>Classes 1-12 intended to be performance on axle-based equipment, <i>may</i> also be possible on other sensor types. Classes 21-23 likely to require non-axle equipment.</p> <p>Vehicle based sites may report only Classes 1-19; active transport sites 19-23. Combo sites report 1-23.</p>	<p>Based on Austrroads existing four-bin length classification scheme. A less-preferred fallback basis classification suitable for use primarily where the sensing technology is incapable of performing Austrroads CORE vehicle to a suitable standard.</p> <p>Example uses include:</p> <ul style="list-style-type: none"> <li>• Current sites performing vehicle detection on freeways for primarily non-classification purposes but which use this basic labelling to add value to the collected data</li> <li>• Future sites undertaking classification of vehicles with PLUS Visual labels but where the capability of the technology at that site does not permit suitable performance using CORE Vehicle definitions</li> </ul>	<p>Extended granularity of CORE vehicle classes achievable using axle-based sensing equipment.</p> <p>Compared to CORE, provides greater opportunity for updates over time and or local additional labels. Adding such a label has the effect of drawing vehicles out from the xx99 bins.</p> <p>For ease of interpretation, intended to be used as a complete set or not at all (i.e. not just picking and choosing some) – hence needs to be able to performed on a broad range of axle-based equipment.</p> <p>Has full hierarchical relationship to CORE VEHICLE – first two digits match CORE Class numbers. Would generally be used with CORE (i.e. labelled in both) but has potential also for standalone application as structure allows simple interpretation up to CORE level.</p>	<p>Provides definitions for aspects that are assessable visually. These aspects may also be assessable using other methods, however these definitions are on a visual basis.</p> <p>Preferred use is in conjunction with relevant CORE portion (e.g. CORE Vehicle PLUS Visual Vehicle or CORE Active PLUS VISUAL Active).</p> <p>Optional use for PLUS Visual Vehicle with PLUS Extended Axle.</p> <p>Fallback use for PLUS Visual Vehicle with LENGTH (i.e. where site technology does not permit suitable performance using CORE Vehicle definitions).</p> <p>Has grouped hierarchical relationship to CORE – to short vehicle (Classes 1 and 2), heavy vehicle (Classes 3 – 12) and active transport (Classes 21-23). for active transport labels across multiple categories may apply to one user.</p> <p>A label is provided for <i>not determined</i> (xx99) to facilitate complete labelling of all detected users when used in conjunction with CORE.</p>	<p>Captures distinctions that are not discernible (to the necessary confidence level) using axle-based or visual assessment.</p> <p>Can be used as standalone classification basis (only additional labelling) but preferable use is with CORE or CORE and PLUS elements (extended axle and / or visual).</p> <p>Has grouped hierarchical relationship to CORE – to vehicles (Classes 1 – 12) and active transport (Classes 21-23). Labels across multiple categories may apply to one user.</p> <p>This potential future aspect of the classification scheme is not intended to form part of NEG6440 but be considered subsequently.</p>

<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="background-color: black; color: white; padding: 2px 5px;">Austroads-26</span> <span style="background-color: orange; color: white; padding: 2px 5px; font-weight: bold;">CORE</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="background-color: black; color: white; padding: 2px 5px;">Austroads-26</span> <span style="background-color: gray; color: white; padding: 2px 5px; font-weight: bold;">LENGTH</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="background-color: black; color: white; padding: 2px 5px;">Austroads-26</span> <span style="background-color: orange; color: white; padding: 2px 5px; font-weight: bold;">plus EXTENDED AXLE</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="background-color: black; color: white; padding: 2px 5px;">Austroads-26</span> <span style="background-color: orange; color: white; padding: 2px 5px; font-weight: bold;">plus VISUAL</span> </div>	<div style="display: flex; justify-content: space-between; align-items: center;"> <span style="background-color: black; color: white; padding: 2px 5px;">Austroads-26</span> <span style="background-color: orange; color: white; padding: 2px 5px; font-weight: bold;">plus ADDITIONAL</span> </div>
<p><b>CORE VEHICLE:</b>                      Class 1 short vehicle  <i>Consider separating out motorcycles and similar (e.g. use 0102 def'n)</i>                      Class 2 short vehicle towing                      Class 3 two axle rigid truck or bus                      Class 4 three axle rigid truck or bus                      Class 5 more than 3 axle rigid truck, bus or crane                      Class 6 three axle artic or rigid vehicle and trailer                      Class 7 four axle artic or rigid vehicle and trailer                      Class 8 five axle artic or rigid vehicle and trailer                      Class 9 six or more artic or rigid vehicle and trailer                      Class 10 B-double or heavy truck and trailer                      Class 11 double road train or heavy truck and trailer(s)                      Class 12 triple road train or heavy truck and trailer(s)</p> <p><b>CORE COMMON:</b>                      Class 19 unmatched (outside definitions)</p> <p><b>CORE ACTIVE TRANSPORT:</b>                      Class 21 walker (without assisted mobility device)                      Class 22 assisted mobility device user                      Class 23 rider (bicycle, scooter, etc.)  <i>Note: the three classes shown here are strictly illustrative examples</i></p>	<p><b>VEHICLE LENGTH:</b>                      Length Class 1 (Short) &lt; 6m  <i>(approximates CORE Classes 1 and 2)</i></p> <p>Length Class 2 (Medium) 6m ≤ length &lt; 13m  <i>(approximates CORE Classes 3 to 5)</i></p> <p>Length Class 3 (Long) 13m ≤ length &lt; 21m  <i>(approximates CORE Classes 6 to 9)</i></p> <p>Length Class 4 (Combination) ≥ 21m  <i>(approximates CORE Classes 10 to 12)</i></p> <p><b>ACTIVE TRANSPORT:</b>                      This schema is not used for active transport, with the exception of bicycles and similar users travelling on-road that may be captured in Length Class 1.</p>	<p><b>FOR SUB-CLASSES SEE TABULAR PRESENTATION AT END OF DOCUMENT</b></p> <p>Comments below describe cases where Austroads-23 extended classification scheme has not been directly carried across as the basis:</p> <ul style="list-style-type: none"> <li>• xx99 used as a consistent label for not meeting sub-class definitions, e.g. a vehicle which does meet the Class 12 CORE definition, but not any of the PLUS Visual Class 12 sub-class definitions would be labelled 1299</li> <li>• Formal reservation of label space for expansion and local definitions (if any)</li> <li>• Exclusion of non-axle distinctions, e.g.                         <ul style="list-style-type: none"> <li>○ 0103-0106 skipped as these are non-axle distinctions, e.g. van is now Class 1 + SV04 or 0107 + SV04)</li> <li>○ There are no axle-based distinctions for Classes 3 and 4, hence all fall within 0399 or 0499)</li> <li>○ Austroads-23 sub-classes within Class 20 are not axle-based hence not carried over; also updated CORE expected to supersede Class 20</li> </ul> </li> </ul>	<p>The labels shown here are strictly illustrative examples. The current basis for example vehicle labels would involve one label being applied per vehicle.</p> <p><b>VISUAL SHORT VEHICLE (CORE Classes 1 – 2)</b>                      SV01 car (including sedan, hatch, wagon)                      SV02 SUV or 4WD (including models such as Ford Everest, Isuzu MU-X)                      SV03 ute                      SV04 van                      SV99 short vehicle type not determined</p> <p><b>VISUAL HEAVY VEHICLE (CORE Classes 3 – 12)</b>                      HV01 small bus or minibus                      HV02 standard length bus or coach                      HV03 articulated bus                      HV04 double-decker bus                      HV05 Truck - concrete mixer                      HV06 Truck – crane                      HV07 Truck - flatbed or tray (empty)                      HV08 Truck - flatbed or tray (laden)                      HV09 Truck - garbage or recycling                      HV10 Truck - bulk liquids                      HV11 Truck - bulk solids (e.g. soils)                      HV12 Truck - shipping container (on truck)                      HV13 Truck – shipping container (but none on truck)                      HV14 Truck - box or curtain sided                      HV99 heavy vehicle type not determined</p>	<p>The labels shown here are strictly illustrative examples.</p> <p><b>ADDITIONAL VEHICLE DISTINCTIONS (CORE Classes 1 – 12)</b></p> <p>Each vehicle may have one label per label category</p> <p style="text-align: center;"><b>PROPULSION OR ENERGY TYPE:</b></p> <p>PE01 internal combustion engine (ICE)                      PE02 battery electric                      PE03 electric primarily by external connection (e.g. trolleybus, tram)                      PE04 hydrogen fuel-cell                      PE05 hybrid with primary ICE (e.g. mild and standard hybrid)                      PE06 hybrid with primary electric (e.g. PHEV, range extender)                      PE99 propulsion or energy type not determined</p> <p><i>(note: in this example, energy source for active transport has been included as a visual distinction, but for vehicles as an additional distinction)</i></p> <p style="text-align: center;"><b>DEMOGRAPHICS (AGE):</b></p> <p>PA01 vehicle age group 1 (e.g. 0 – 5 years old)                      PA02 vehicle age group 2                      ...                      PA99 undetermined vehicle age group</p>

CONCEPT

Austroads-26 <b>CORE</b>	Austroads-26 <b>LENGTH</b>	Austroads-26 <b>plus EXTENDED AXLE</b>	Austroads-26 <b>plus VISUAL</b>	Austroads-26 <b>plus ADDITIONAL</b>
			<p>Each user may have one label per label category (i.e. more than one label in total)</p> <p><b>VISUAL ACTIVE TRANSPORT (CORE Classes 21 – 23)</b></p> <p>GENDER:</p> <ul style="list-style-type: none"> <li>AG01 male</li> <li>AG02 female</li> <li>AG99 not determined</li> </ul> <p>AGE:</p> <ul style="list-style-type: none"> <li>AA01 child</li> <li>AA02 teen or adult</li> <li>AA03 older adult</li> <li>AA99 not determined</li> </ul> <p>ASSOCIATED DEVICE:</p> <ul style="list-style-type: none"> <li>AD01 manual wheelchair</li> <li>AD02 motorised wheelchair, sit-on mobility scooter</li> <li>AD03 walking frame (or similar aid)</li> <li>AD04 pram or pusher</li> <li>AD05 manual stand-on device (scooter, skateboard, etc)</li> <li>AD06 motorised stand-on device (scooter, skateboard, etc.) (includes electric)</li> <li>AD07 manual two-wheeled sit on device (e.g. bicycle)</li> <li>AD08 powered two-wheeled sit on device (e.g. bicycle)</li> <li>AD09 larger sit-on device (includes cargo bikes, bikes with trailers, trikes, recumbents, etc) (motorised or manual)</li> <li>AD99 not determined</li> </ul> <p><i>(note: if motorised / non-motorised distinctions for devices are insufficient by visual means, that distinction would need to move to additional category)</i></p> <p>ACTIVITY CLASS:</p> <ul style="list-style-type: none"> <li>AC01 walking</li> <li>AC02 jogging or running</li> <li>AC03 riding</li> <li>AC04 waiting</li> <li>AC99 not determined</li> </ul> <p>DEVICE OWNERSHIP OR FLEET CLASS:</p> <ul style="list-style-type: none"> <li>AO01 fleet for shared public use</li> <li>AO02 fleet not for public use (e.g. branded delivery bike)</li> <li>AO99 not determined</li> </ul> <p><i>(note: if ownership or fleet distinctions for devices are insufficient by visual means, that distinction would need to move to additional category)</i></p>	<p><b>ACTIVE TRANSPORT DISTINCTIONS (CORE Classes 21 – 23)</b></p> <p>None proposed as in this example concept the relevant distinctions have been included within the visual category</p>

Matrix presentation of extended axle sub-classes

→ Class	1	1A (TBC)	2	3	4	5	6	7	8	9	10	11	12
→ Descript'n ↓ Sub-class	Short vehicle (car-like)	Short vehicle (motor / cycle)	Short vehicle towing	Two axle rigid truck or bus	Three axle rigid truck or bus	More than 3 axle rigid truck, bus or crane	Three axle artic or rigid vehicle and trailer	Four axle artic or rigid vehicle and trailer	Five axle artic or rigid vehicle and trailer	Six or more artic or rigid vehicle and trailer	B-double or heavy truck and trailer	Double road train or heavy truck and trailer(s)	Triple road train or heavy truck and trailer(s)
xx01	See →	0101 (TBC) bicycle and e-bicycle	0201 short vehicle towing 1 axle trailer			0501 short 4 axle, 2 group rigid	0601 2 axle rigid truck + 1 axle pig	0701 2 axle rigid truck + 2 axle pig or 4 axle semi, single drive	0801 3 axle rigid truck + 2 axle pig	0901 6 axle semi, tandem drive	1001 4 axle rigid truck + 3-axle dog	1101 3 axle truck, A-double tandem dolly	1201 8x6 super quad road train
xx02	See →	0102 powered motorcycles, tricycles, quadricycles	0202 short vehicle towing 2 axle trailer			0502 medium 4 axle, 2 group rigid (inc 4 axle concrete truck)	0602 3 axle semi	0702 3 axle rigid truck + 1 axle pig	0802 5 axle rigid truck and trailer	0902 3 axle rigid truck + 3 axle pig	1002 3 axle rigid truck + 4 axle dog	1102 3 axle truck, A-double tri-axle dolly	1202 8x6 AAB-quad road train
xx03	Deprecated (updated and video-based definition)		0203 short vehicle towing 3 or more axle trailer			0503 long 4 axle, 2 group rigid	0603 3 axle (likely but not determinatively articulated bus)	0703 2 axle rigid truck + 2 axle trailer	0803 5-axle semi, single drive	0903 3 axle rigid truck + 3 axle dog	1003 6x4 low loader	1103 3-axle truck, pocket road train	1203 6x4 triple road train tandem dollies
xx04	Deprecated (updated and video-based definition)					Deprecated (video-based distinction)		0704 4 axle semi, single drive	0804 5 axle semi, tandem drive	0904 4 axle rigid truck + 2 axle pig	1004 3 axle rigid truck + quin dog	1104 3 axle truck, A-double tri-axle groups	1204 8x6 (?) triple road train tri-axle dollies
xx05	Deprecated (updated and video-based definition)					0505 5 or more axle, 2 group rigid				0905 7 axle semi, tri drive	1005 4 axle rigid truck + 4 axle dog	1105 4 axle truck, A-double tri-axle groups	1205 8x6 triple road train tri-axle dollies
xx06	Deprecated (updated and video-based definition)					0506 4-axle (likely but not determinatively crane truck)				0906 7 axle semi, tandem drive	1006 3 axle truck, tri-tandem B-double	1106 3 axle truck, AB-triple	1206 6x4 AAB-quad road train
xx07	0107 car, SUV, 4WD, ute or van					0507 5-axle (likely but not determinatively crane truck)				0907 4 axle rigid truck + 3 axle pig	1007 4 axle rigid truck and 5 axle dog trailer	1107 3 axle truck, B-triple	1207 10x6 quad-axle triple road train
xx08										0908 4 axle rigid truck + 4 axle pig	1008 3 axle truck, tri-tri B-double	1108 4 axle truck, AB-triple	1208 10x6 AAB-tri road train
xx09										0909 8 axle semi, tri-drive	1009 4 axle truck, tri-tri B-double	1109 8x6 AB-triple	1209 8x4 triple road train
xx10										0910 Twin steer 7 axle semi	1010 3 axle truck, quad-tri B-double	1110 6x4 AB-triple tandem dolly	1210 8x6 quad-axle super quad road train
xx11											1011 3 axle truck, quad-quad B-double		

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xx12											1012 4 axle truck, twin steer quad-quad B-double		
xx13 – xx29 reserved for expansion													
xx31 – xx89 reserved for local definitions (i.e. something not captured within other sub-class definitions that would otherwise fall within xx99 but a local definition separates out for that jurisdiction)													
xx99	Class 1 vehicle outside sub-class definitions	Class 1A vehicle outside sub-class definitions	Class 2 vehicle outside sub-class definitions	Class 3 vehicle outside sub-class definitions	Class 4 vehicle outside sub-class definitions	Class 5 vehicle outside sub-class definitions	Class 6 vehicle outside sub-class definitions	Class 7 vehicle outside sub-class definitions	Class 8 vehicle outside sub-class definitions	Class 9 vehicle outside sub-class definitions	Class 10 vehicle outside sub-class definitions	Class 11 vehicle outside sub-class definitions	Class 12 vehicle outside sub-class definitions

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