**The Effect of Ambient Light on the Numbers of Motorised Vehicles, Cyclists and Pedestrians**

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**Supplementary Material**

**Supplementary data 1**: Site identification names and their longitude and latitude for the 14 locations in Cambridge.

|  |  |  |
| --- | --- | --- |
| **Street location** | **Latitude** | **Longitude** |
| 362 Mill Rd | 52.19651 | 0.15303 |
| Mill Rd (SO 1 Mortimer Rd) | 52.20192 | 0.13245 |
| 108 Coleridge Rd | 52.19093 | 0.14592 |
| 114 Vinery Rd | 52.19999 | 0.15257 |
| 2 Tenison Rd | 52.19994 | 0.13679 |
| OP 6 Station Rd | 52.194855 | 0.132876 |
| 151/153 Coldhams Ln | 52.20377 | 0.15201 |
| 117 Cherry Hinton Rd | 52.18832 | 0.14227 |
| 142 Perne Road | 52.19239 | 0.15467 |
| O/S ARU East Road | 52.20407 | 0.13294 |
| 55 Devonshire Rd | 52.19624 | 0.13713 |
| 214 Milton Rd | 52.22063 | 0.13416 |
| 140 Hills Rd | 52.19008 | 0.13534 |
| 560 Newmarket Road | 52.21288 | 0.15674 |

**Supplementary data 2**: Site identification numbers, longitude and latitude of the 122 automatic traffic counters in Adelaide.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Site ID** | **Latitude** | **Longitude** |  | **Site ID** | **Latitude** | **Longitude** |
| 3001 | -34.921569 | 138.59944 |  | 3064 | -34.923105 | 138.597588 |
| 3002 | -34.922999 | 138.59955 |  | 3065 | -34.928512 | 138.602296 |
| 3003 | -34.924385 | 138.59964 |  | 3066 | -34.926741 | 138.608259 |
| 3004 | -34.92577 | 138.59975 |  | 3067 | -34.92877 | 138.59726 |
| 3005 | -34.927124 | 138.59984 |  | 3069 | -34.928216 | 138.608371 |
| 3006 | -34.928588 | 138.60077 |  | 3070 | -34.911005 | 138.601234 |
| 3007 | -34.930168 | 138.60008 |  | 3071 | -34.9176 | 138.593062 |
| 3008 | -34.931508 | 138.60019 |  | 3072 | -34.909652 | 138.592383 |
| 3009 | -34.932926 | 138.60027 |  | 3073 | -34.932297 | 138.612351 |
| 3010 | -34.934298 | 138.60038 |  | 3074 | -34.907827 | 138.605951 |
| 3011 | -34.935737 | 138.60048 |  | 3075 | -34.934615 | 138.594325 |
| 3012 | -34.921419 | 138.60186 |  | 3076 | -34.923772 | 138.611143 |
| 3013 | -34.924275 | 138.60199 |  | 3077 | -34.902926 | 138.59 |
| 3014 | -34.921653 | 138.59757 |  | 3078 | -34.914288 | 138.604793 |
| 3015 | -34.924479 | 138.59765 |  | 3079 | -34.925881 | 138.597665 |
| 3016 | -34.928676 | 138.59914 |  | 3080 | -34.927294 | 138.597155 |
| 3017 | -34.924188 | 138.60321 |  | 3081 | -34.929513 | 138.612135 |
| 3018 | -34.921257 | 138.60546 |  | 3082 | -34.939076 | 138.585625 |
| 3019 | -34.922696 | 138.60557 |  | 3083 | -34.92361 | 138.587453 |
| 3020 | -34.924077 | 138.60567 |  | 3084 | -34.927761 | 138.587767 |
| 3021 | -34.925453 | 138.60578 |  | 3085 | -34.924888 | 138.589544 |
| 3022 | -34.926861 | 138.60589 |  | 3087 | -34.912367 | 138.600752 |
| 3023 | -34.928336 | 138.606 |  | 3088 | -34.916814 | 138.605826 |
| 3024 | -34.92982 | 138.60611 |  | 3089 | -34.926073 | 138.593693 |
| 3025 | -34.931201 | 138.60622 |  | 3090 | -34.92 | 138.581816 |
| 3026 | -34.932605 | 138.60632 |  | 3091 | -34.929695 | 138.608502 |
| 3027 | -34.93399 | 138.60642 |  | 3092 | -34.907311 | 138.596364 |
| 3028 | -34.935438 | 138.60653 |  | 3093 | -34.928397 | 138.604651 |
| 3029 | -34.923306 | 138.59343 |  | 3094 | -34.933536 | 138.588205 |
| 3030 | -34.92472 | 138.59289 |  | 3095 | -34.929153 | 138.589635 |
| 3031 | -34.924646 | 138.59432 |  | 3096 | -34.906398 | 138.591215 |
| 3032 | -34.927468 | 138.5938 |  | 3098 | -34.912697 | 138.593511 |
| 3033 | -34.928947 | 138.59392 |  | 3099 | -34.907615 | 138.601235 |
| 3034 | -34.930427 | 138.59402 |  | 3101 | -34.90658 | 138.608203 |
| 3035 | -34.936041 | 138.59443 |  | 3102 | -34.930265 | 138.597021 |
| 3036 | -34.919106 | 138.60693 |  | 3103 | -34.925965 | 138.595999 |
| 3037 | -34.921116 | 138.6078 |  | 3104 | -34.930756 | 138.587998 |
| 3038 | -34.922567 | 138.60793 |  | 3105 | -34.933688 | 138.61242 |
| 3039 | -34.920995 | 138.61077 |  | 3107 | -34.926554 | 138.611907 |
| 3040 | -34.922415 | 138.61091 |  | 3142 | -34.92187 | 138.593336 |
| 3041 | -34.928047 | 138.61203 |  | 3145 | -34.929979 | 138.602891 |
| 3042 | -34.922147 | 138.58716 |  | 3146 | -34.935455 | 138.604828 |
| 3043 | -34.924904 | 138.58757 |  | 3147 | -34.924331 | 138.600835 |
| 3044 | -34.929259 | 138.58787 |  | 3148 | -34.918129 | 138.606472 |
| 3045 | -34.936272 | 138.58818 |  | 3149\* | -34.934086 | 138.604625 |
| 3046 | -34.901887 | 138.59445 |  | 3150 | -34.906787 | 138.592306 |
| 3047 | -34.90597 | 138.59588 |  | 3151 | -34.918697 | 138.601671 |
| 3048 | -34.904979 | 138.60021 |  | 3152\* | -34.934179 | 138.602769 |
| 3049 | -34.908644 | 138.59684 |  | 3155\* | -34.933416 | 138.590288 |
| 3050 | -34.909429 | 138.59714 |  | 3156 | -34.926952 | 138.603934 |
| 3051 | -34.911958 | 138.59881 |  | 3158 | -34.921723 | 138.595987 |
| 3052 | -34.925149 | 138.61184 |  | 3159 | -34.928853 | 138.595833 |
| 3053 | -34.91557 | 138.59886 |  | 3160 | -34.921874 | 138.592726 |
| 3054 | -34.917185 | 138.59908 |  | 3162\* | -34.932917 | 138.593506 |
| 3055 | -34.91988 | 138.59928 |  | 3163 | -34.903292 | 138.594919 |
| 3056 | -34.923966 | 138.60803 |  | 3164 | -34.921049 | 138.609361 |
| 3058 | -34.925655 | 138.60211 |  | 3165 | -34.921962 | 138.590743 |
| 3059 | -34.935117 | 138.61256 |  | 3166 | -34.921231 | 138.585003 |
| 3060 | -34.927045 | 138.60219 |  | 3167 | -34.936146 | 138.591253 |
| 3061 | -34.92131 | 138.60389 |  | 3205 | -34.90549 | 138.597941 |
| 3062 | -34.925356 | 138.60814 |  | 3208 | -34.927698 | 138.589144 |

\*Site locations that were removed from the analysis due to there being no records in Autumn.

**Supplementary data 3**: Roads, Site identifications and longitude and latitude for the 14 locations for trunk road in England.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Road** | **Details** |  |  | **Longitude** | **Latitude** |
| A45 | MIDAS site at A45/7603B priority 1 on link 199158502; GPS Ref: 500538;276852; Eastbound | | | 0.52436 | 52.3805 |
| A45 | TMU Site 9911/2 on A45 westbound between A4071 and B4455; GPS Ref: 443643;272619; Westbound | | | -1.36069 | 52.34992 |
| A500 | TMU Site 9910/2 on A500 southbound between A34 near Stoke-on-Trent (south) and A519; GPS Ref: 385624;342172; Southbound | | | -2.21554 | 52.9767 |
| A500 | TAME Site 30361245 on link A500 northbound between A50 and A52/A5007; GPS Ref: 387934;344234; Northbound | | | -2.18121 | 52.99531 |
| M3 | MIDAS site at M3/2126M priority 1 on link 103045101; GPS Ref: 445142;122065; Eastbound | | | -1.3581 | 50.9962 |
| M3 | TMU Site 5703/2 on link M3 westbound within J13; GPS Ref: 444104;119696; Westbound | | | -1.37318 | 50.97498 |
| M65 | MIDAS site at M65/4017L priority 1 on link 200115525; GPS Ref: 356847;424450; Westbound | | | -2.65532 | 53.71468 |
| M65 | MIDAS site at M65/4049B priority 0 on link 117015901; GPS Ref: 360000;424784; Westbound | | | -2.60759 | 53.71794 |
| M20 | MIDAS Site at M20/6558A2 priority 1 on link 104029201; GPS Ref: 574829;158477; Eastbound | | | 0.50636 | 51.2985 |
| M20 | TAME Site 30360670 on link M20 eastbound within J1 before M25 J3 roundabout access; GPS Ref: 552497;167861; Eastbound | | | 0.19031 | 51.3893 |
| A66 | TAME Site 30361500 on link A66 eastbound between M6 and A6; GPS Ref: 351485;528947; Eastbound | | | -2.75345 | 54.65327 |
| A66 | TAME Site 30361560 on link A66 westbound between A67 near Darlington (south) and A66(M); GPS Ref: 426984;512637; Westbound | | | -1.58477 | 54.50833 |
| M62 | MIDAS site at M18/7933M priority 1 on link 199083001; GPS Ref: 468326;420870; Westbound | | | -0.967054 | 53.67983 |
| M62 | MIDAS site at M62/2282B priority 1 on link 116036601; GPS Ref: 443013;423274; Westbound | | | -1.349913 | 53.70413 |

**Supplementary File 4a:** The alternative day and dark control periods which were two-hours either side of the case hour, for Autumn and Spring.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Location** | **Period** | **Spring** | **Autumn** | **Ambient light before/after clock change** |
| Cambridge | Case  Control Day  Control Dark | 18:00-18:59  15:00-15:59  21:00-21:59 | 17:00-17:59  14:00-14:59  20:00-20:59 | Dark-Day (Spring)  Day-Dark (Autumn)  Day-Day (Spring and Autumn)  Dark-Dark (Spring and Autumn) |
| London | Case  Control Day  Control Dark | 18:00-18:59  15:00-15:59  21:00-21:59 | 17:00-17:59  14:00-14:59  20:00-20:59 | Dark-Day (Spring)  Day-Dark (Autumn)  Day-Day (Spring and Autumn)  Dark-Dark (Spring and Autumn) |
| Trunk roads in England | Case  Control Day  Control Dark | 18:30-19:30  15:00-15:59  21:00-21:59 | 16:45-17:45  14:00-14:59  20:00-20:59 | Dark-Day (Spring)  Day-Dark (Autumn)  Day-Day (Spring and Autumn)  Dark-Dark (Spring and Autumn) |
| Adelaide | Case  Control Day  Control Dark | 19:00-19:59  16:00-16:59  22:00-22:59 | 18:00:18:59  15:00-15:59  21:00-21:59 | Dark-Day (Spring)  Day-Dark (Autumn)  Day-Day (Spring and Autumn)  Dark-Dark (Spring and Autumn) |

**Supplementary File 4b:** The summated counts, ORs, 95% CIs and significance for the alternative day and dark control periods which were two-hours either side of the case hour, for Autumn and Spring.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Road User Type** | **Period** | **Season** | **Clock Change** | **Light Condition** | **Total traffic count** | **Odds Ratio [95% CI]** | **p-value** |
| Adelaide | Motorised Vehicles | Case | Autumn | Before | Light | 6,353,263 | 0.990  [0.989-0.991] | p<0.05 |
|  | After | Dark | 6,348,672 |
| Spring | Before | Dark | 4,589,557 |
|  | After | Light | 4,715,472 |
| Control | Autumn | Before | Light | 11,711,771 |
|  | After | Dark | 11,547,949 |
| Spring | Before | Dark | 11,740,564 |
|  | After | Light | 11,523,904 |
| London | Motorised Vehicles | Case | Autumn | Before | Light | 177,296 | 0.997  [0.991-1.003] | p=0.27 |
|  | After | Dark | 170,305 |
| Spring | Before | Dark | 147,283 |
|  | After | Light | 147,729 |
| Control | Autumn | Before | Light | 308,186 |
|  | After | Dark | 313,186 |
| Spring | Before | Dark | 252,620 |
|  | After | Light | 268,897 |
| Cambridge | Motorised Vehicles | Case | Autumn | Before | Light | 75,224 | 0.988  [0.978-1.000] | p<0.05 |
|  | After | Dark | 79,155 |
| Spring | Before | Dark | 25,589 |
|  | After | Light | 20,801 |
| Control | Autumn | Before | Light | 121,515 |
|  | After | Dark | 127,302 |
| Spring | Before | Dark | 43,732 |
|  | After | Light | 37,110 |
|  | Pedestrians | Case | Autumn | Before | Light | 17,847 | 1.275  [1.242-1.308] | p<0.001 |
|  | After | Dark | 14,156 |
| Spring | Before | Dark | 5,386 |
|  | After | Light | 4,715 |
| Control | Autumn | Before | Light | 17,676 |
|  | After | Dark | 19,711 |
| Spring | Before | Dark | 6,221 |
|  | After | Light | 5,812 |
| Cyclists | Case | Autumn | Before | Light | 15,834 | 1.563  [1.517-1.611] | p<0.001 |
|  | After | Dark | 10,504 |
| Spring | Before | Dark | 3,544 |
|  | After | Light | 4,127 |
| Control | Autumn | Before | Light | 11,918 |
|  | After | Dark | 13,803 |
| Spring | Before | Dark | 4,734 |
|  | After | Light | 4,929 |
| Trunk roads in England | Motorised Vehicles | Case | Autumn | Before | Light | 332,476 | 0.999  [0.994-1.004] | p=.78 |
|  | After | Dark | 335,630 |
| Spring | Before | Dark | 199,894 |
|  | After | Light | 201,836 |
| Control | Autumn | Before | Light | 415,555 |
|  | After | Dark | 411,885 |
| Spring | Before | Dark | 387,252 |
|  | After | Light | 382,340 |