

APPENDIX 1
TRAFFIC COUNT FACTORS

Introduction

The GMTU Traffic Counts System (COUNTS) incorporates factors which are applied to single day counts to produce estimates of annual average flows. Three types of factor are involved. These are:

- (i) Split-shift to 12-hour factors which are used to estimate single day 12-hour vehicle-specific flows from shorter period counts. These factors are calculated from all available 12-hour continuous counts held on the COUNTS system;
- (ii) Factors to estimate average 12, 16, 18 and 24-hour flows from 12-hour counts. These are based on all available data from continuous Automatic Traffic Counting (ATC) sites throughout the county;
- (iii) Year to year factors.

A new year to year factor is added each year and factors (i) and (ii) have been updated periodically as new data has become available. This appendix presents factors that have been produced from 2007 (split shift) and 2008 (12-hour to longer period) data. These are applied to counts in 2009.

Factors currently applied to earlier counts are available on request.

Traffic Count Factors

A. Split Shift to 12-Hour

The factors and their associated standard deviations were derived from 12 hour manual classified counts undertaken at 32 motorway, 125 A road and 181 B, C or U road sites throughout the county during 2007. All sites were 2-way.

$$\begin{aligned}
 \text{12-Hour Flow Estimate} &= \text{AM Peak 2-Hour Count} \quad \times \quad \text{A1} \\
 &+ \text{Off-Peak 2-Hour Count} \quad \times \quad \text{A2 or A3} \\
 &+ \text{PM Peak 2-Hour Count} \quad \times \quad \text{A4}
 \end{aligned}$$

Factors to estimate 12-hour motor vehicle counts to average 12, 16, 18 and 24-hour motor vehicle flows and the standard deviations of the estimates were derived from 2008 Automatic Traffic Count (ATC) data at 27 two-way motorway and 55-two way non-motorway sites throughout the county.

B. 12-Hour to 12-Hour Annual Average Weekday (AAWT)

$$\begin{aligned}
 \text{12-Hour Annual Average Weekday Estimate} &= \text{12-Hour Flow weekday (W) month (M)} \quad \times \quad \text{B (W,M)}
 \end{aligned}$$

C. 12-Hour to 16-Hour Annual Average Weekday (AAWT)

$$\begin{aligned}
 \text{16-Hour Annual Average Weekday Estimate} &= \text{12-Hour Flow weekday (W) month (M)} \quad \times \quad \text{C (W,M)}
 \end{aligned}$$

D. 12-Hour to 18-Hour Annual Average Weekday (AAWT)

$$\begin{aligned}
 \text{18-Hour Annual Average Weekday Estimate} &= \text{12-Hour Flow weekday (W) month (M)} \quad \times \quad \text{D (W,M)}
 \end{aligned}$$

E. 12-Hour to 24-Hour Annual Average Weekday Traffic (AAWT)

$$\begin{aligned}
 \text{24-Hour Annual Average Weekday Estimate} &= \text{12-Hour Flow weekday (W) month (M)} \quad \times \quad \text{E (W,M)}
 \end{aligned}$$

F. 12-Hour to 24-Hour Annual Average Daily Traffic (AADT)

$$\begin{aligned}
 \text{24-Hour Annual Average Day Estimate} &= \text{12-Hour Flow weekday (W) month (M)} \quad \times \quad \text{F (W,M)}
 \end{aligned}$$

G. Year to Year Factors

Indices of motor vehicle traffic growth since 1979 are provided to allow counts to be factored to a common base.

A Split Shift to 12-Hour Factors

1. Factors

Road Class		Time Period	Car	LGV	OGV	Buses	Motor Cycle	Pedal Cycle	All Motor Vehicles
Motorways	A1	07:30-09:30	1.467	1.527	1.529	1.591	1.449		1.482
	A2	10:00-12:00	3.336	3.242	2.894	3.273	4.224		3.242
	A3	12:00-14:00	3.093	3.167	2.987	4.009	3.338		3.087
	A4	16:00-18:00	1.439	1.264	1.314	1.563	1.405		1.410
A Roads	A1	07:30-09:30	1.370	1.471	1.506	1.495	1.541	1.518	1.388
	A2	10:00-12:00	3.454	3.028	2.751	3.479	5.005	4.777	3.334
	A3	12:00-14:00	2.963	3.138	3.199	3.641	3.224	3.487	2.992
	A4	16:00-18:00	1.436	1.280	1.202	1.447	1.396	1.449	1.414
B C U Roads	A1	07:30-09:30	1.321	1.447	1.538	1.380	1.523	1.452	1.337
	A2	10:00-12:00	3.592	3.155	2.708	3.332	4.371	4.296	3.467
	A3	12:00-14:00	3.055	3.197	3.360	3.292	3.070	3.389	3.061
	A4	16:00-18:00	1.450	1.302	1.188	1.324	1.410	1.441	1.432

2. Standard Deviations Associated with Factors

Road Class		Time Period	Car	LGV	OGV	Buses	Motor Cycle	Pedal Cycle	All Motor Vehicles
Motorways	A1	07:30-09:30	0.043	0.056	0.038	0.201	0.151		0.039
	A2	10:00-12:00	0.345	0.342	0.226	0.910	2.804		0.252
	A3	12:00-14:00	0.149	0.278	0.181	1.644	1.181		0.144
	A4	16:00-18:00	0.073	0.065	0.075	0.425	0.412		0.062
A Roads	A1	07:30-09:30	0.069	0.105	0.185	0.443	0.500	0.561	0.066
	A2	10:00-12:00	0.332	0.329	0.460	1.522	3.312	3.379	0.268
	A3	12:00-14:00	0.150	0.282	0.704	1.918	1.467	2.043	0.135
	A4	16:00-18:00	0.074	0.083	0.156	0.511	0.301	0.577	0.067
B C U Roads	A1	07:30-09:30	0.093	0.249	0.525	0.256	0.611	0.541	0.091
	A2	10:00-12:00	0.505	0.786	0.951	1.066	2.629	3.203	0.414
	A3	12:00-14:00	0.300	0.763	1.638	1.021	1.931	2.240	0.270
	A4	16:00-18:00	0.141	0.171	0.335	0.229	0.453	0.618	0.155

B. 12-Hour Weekday to 12-Hour Annual Average Weekday Factors**MOTORWAY****1. Factors**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.062	1.031	1.022	1.051	1.033	1.519	1.720	1.039
February	1.024	1.006	0.994	0.985	0.979	1.442	1.607	0.997
March	1.021	1.002	0.997	0.990	0.969	1.368	1.514	0.996
April	1.006	0.995	0.982	0.977	0.956	1.421	1.572	0.983
May	1.005	1.001	0.986	0.971	0.951	1.412	1.612	0.983
June	1.023	1.008	0.998	0.996	0.961	1.431	1.579	0.996
July	1.025	1.009	0.998	0.995	0.973	1.451	1.602	0.999
August	1.064	1.039	1.007	1.005	0.986	1.427	1.621	1.019
September	1.024	1.017	0.999	0.991	0.968	1.363	1.538	0.999
October	1.019	1.017	1.001	0.994	0.959	1.384	1.506	0.998
November	1.036	1.016	1.011	1.002	0.974	1.417	1.598	1.007
December	1.032	1.037	1.017	1.026	1.002	1.430	1.604	1.024
Average Factor	1.025	1.011	0.998	0.996	0.972	1.419	1.588	1.000

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.022	0.023	0.024	0.026	0.026	0.121	0.146
February	0.018	0.019	0.017	0.015	0.015	0.123	0.163
March	0.014	0.016	0.020	0.018	0.021	0.118	0.163
April	0.019	0.015	0.018	0.014	0.018	0.110	0.161
May	0.018	0.017	0.016	0.018	0.028	0.120	0.179
June	0.017	0.017	0.017	0.018	0.024	0.125	0.182
July	0.019	0.016	0.013	0.017	0.028	0.126	0.201
August	0.035	0.020	0.023	0.027	0.041	0.136	0.191
September	0.017	0.018	0.016	0.015	0.026	0.126	0.188
October	0.016	0.021	0.019	0.013	0.023	0.118	0.164
November	0.026	0.024	0.028	0.024	0.024	0.107	0.145
December	0.028	0.037	0.032	0.038	0.020	0.109	0.132

B 12-Hour Weekday to 12-Hour Annual Average Weekday Factors

NON-MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.032	1.013	1.008	1.006	0.990	1.373	1.727	1.008
February	1.016	0.998	0.987	0.990	0.982	1.367	1.677	0.993
March	1.012	0.990	0.989	0.980	0.974	1.313	1.600	0.989
April	1.008	0.992	0.983	0.980	0.975	1.344	1.660	0.987
May	1.011	0.991	0.986	0.983	0.972	1.358	1.701	0.989
June	1.037	1.017	1.008	1.005	0.995	1.388	1.695	1.011
July	1.045	1.022	1.018	1.014	1.008	1.392	1.732	1.022
August	1.104	1.070	1.060	1.056	1.056	1.463	1.784	1.071
September	1.040	1.021	1.015	1.008	1.002	1.381	1.657	1.017
October	1.020	1.006	0.996	0.995	0.983	1.349	1.618	0.999
November	1.016	1.002	0.995	0.989	0.972	1.345	1.643	0.995
December	1.004	0.988	0.978	0.976	0.972	1.350	1.643	0.984
Average Factor	1.023	1.005	0.997	0.995	0.981	1.350	1.670	1.000

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.027	0.031	0.027	0.029	0.034	0.326	0.489
February	0.024	0.023	0.026	0.025	0.046	0.327	0.503
March	0.028	0.031	0.035	0.036	0.045	0.293	0.496
April	0.024	0.029	0.025	0.021	0.045	0.311	0.436
May	0.025	0.022	0.034	0.021	0.043	0.350	0.512
June	0.025	0.026	0.029	0.023	0.046	0.338	0.522
July	0.027	0.023	0.026	0.023	0.046	0.320	0.556
August	0.096	0.078	0.077	0.067	0.062	0.294	0.393
September	0.033	0.027	0.030	0.031	0.044	0.364	0.436
October	0.031	0.029	0.031	0.028	0.043	0.300	0.423
November	0.032	0.035	0.032	0.032	0.042	0.312	0.396
December	0.034	0.035	0.037	0.036	0.046	0.311	0.475

C 12-Hour Weekday to 16-Hour Annual Average Weekday Factors

MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.254	1.216	1.206	1.239	1.218	1.791	2.028	1.225
February	1.211	1.189	1.174	1.164	1.157	1.702	1.896	1.179
March	1.206	1.184	1.177	1.169	1.144	1.615	1.787	1.176
April	1.187	1.175	1.160	1.154	1.129	1.677	1.855	1.160
May	1.186	1.182	1.164	1.147	1.123	1.666	1.901	1.160
June	1.207	1.190	1.178	1.176	1.134	1.688	1.862	1.176
July	1.210	1.191	1.178	1.174	1.148	1.712	1.889	1.180
August	1.255	1.227	1.188	1.186	1.164	1.683	1.912	1.203
September	1.209	1.201	1.179	1.169	1.143	1.608	1.814	1.180
October	1.203	1.201	1.182	1.174	1.132	1.633	1.776	1.178
November	1.224	1.200	1.193	1.184	1.150	1.672	1.885	1.190
December	1.220	1.226	1.201	1.212	1.184	1.688	1.893	1.210
Average Factor	1.211	1.194	1.178	1.175	1.147	1.675	1.873	1.181

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.033	0.034	0.035	0.033	0.032	0.133	0.157
February	0.025	0.028	0.025	0.022	0.021	0.132	0.175
March	0.023	0.023	0.031	0.026	0.030	0.128	0.178
April	0.028	0.022	0.028	0.023	0.026	0.118	0.175
May	0.026	0.026	0.026	0.024	0.036	0.129	0.197
June	0.024	0.023	0.026	0.025	0.030	0.134	0.201
July	0.020	0.018	0.016	0.018	0.033	0.137	0.224
August	0.039	0.029	0.025	0.031	0.047	0.148	0.211
September	0.023	0.027	0.024	0.021	0.032	0.137	0.209
October	0.023	0.030	0.030	0.021	0.030	0.129	0.179
November	0.039	0.038	0.042	0.037	0.036	0.115	0.154
December	0.041	0.050	0.046	0.049	0.029	0.118	0.139

C. 12-Hour Weekday to 16-Hour Annual Average Weekday Factors**NON-MOTORWAY****1. Factors**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.209	1.188	1.181	1.180	1.161	1.604	2.016	1.182
February	1.191	1.170	1.158	1.161	1.153	1.598	1.958	1.165
March	1.186	1.161	1.159	1.150	1.142	1.535	1.868	1.160
April	1.182	1.163	1.153	1.148	1.143	1.571	1.940	1.158
May	1.186	1.163	1.156	1.153	1.141	1.588	1.987	1.160
June	1.216	1.193	1.183	1.179	1.168	1.623	1.980	1.186
July	1.225	1.200	1.195	1.190	1.183	1.628	2.022	1.199
August	1.295	1.257	1.244	1.239	1.240	1.712	2.086	1.257
September	1.220	1.199	1.191	1.183	1.177	1.615	1.937	1.193
October	1.196	1.179	1.168	1.167	1.153	1.577	1.889	1.171
November	1.192	1.175	1.168	1.161	1.140	1.573	1.920	1.168
December	1.179	1.160	1.149	1.145	1.140	1.580	1.920	1.154
Average Factor	1.200	1.179	1.170	1.167	1.150	1.579	1.951	1.173

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.044	0.049	0.043	0.047	0.048	0.344	0.517
February	0.041	0.039	0.044	0.043	0.061	0.346	0.536
March	0.042	0.047	0.051	0.055	0.060	0.308	0.529
April	0.038	0.045	0.041	0.037	0.059	0.328	0.463
May	0.039	0.036	0.046	0.035	0.055	0.370	0.544
June	0.033	0.035	0.040	0.033	0.055	0.358	0.559
July	0.032	0.032	0.035	0.032	0.055	0.338	0.594
August	0.118	0.098	0.098	0.083	0.075	0.313	0.416
September	0.050	0.043	0.044	0.046	0.055	0.388	0.463
October	0.049	0.049	0.050	0.046	0.058	0.316	0.449
November	0.050	0.054	0.052	0.052	0.057	0.328	0.417
December	0.051	0.053	0.055	0.053	0.059	0.327	0.503

D. 12-Hour Weekday to 18-Hour Annual Average Weekday Factors

MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.294	1.255	1.245	1.279	1.257	1.848	2.092	1.264
February	1.250	1.228	1.213	1.202	1.195	1.757	1.958	1.217
March	1.245	1.222	1.216	1.207	1.182	1.667	1.845	1.214
April	1.226	1.214	1.198	1.192	1.165	1.732	1.915	1.198
May	1.225	1.221	1.202	1.184	1.160	1.721	1.963	1.198
June	1.247	1.229	1.216	1.215	1.171	1.743	1.923	1.215
July	1.250	1.229	1.217	1.212	1.186	1.768	1.950	1.218
August	1.296	1.267	1.226	1.225	1.202	1.738	1.974	1.242
September	1.248	1.240	1.218	1.207	1.180	1.660	1.873	1.218
October	1.243	1.240	1.221	1.212	1.169	1.686	1.834	1.217
November	1.264	1.239	1.232	1.222	1.188	1.727	1.946	1.228
December	1.261	1.266	1.240	1.251	1.223	1.743	1.954	1.250
Average Factor	1.250	1.233	1.216	1.214	1.185	1.729	1.934	1.219

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.035	0.035	0.037	0.035	0.034	0.141	0.163
February	0.028	0.030	0.029	0.026	0.026	0.137	0.180
March	0.028	0.029	0.036	0.031	0.036	0.133	0.184
April	0.031	0.026	0.032	0.029	0.030	0.122	0.180
May	0.029	0.031	0.032	0.028	0.041	0.134	0.203
June	0.027	0.027	0.030	0.030	0.035	0.140	0.209
July	0.025	0.023	0.021	0.024	0.038	0.142	0.232
August	0.041	0.035	0.031	0.037	0.051	0.154	0.219
September	0.028	0.031	0.029	0.026	0.037	0.141	0.216
October	0.028	0.036	0.035	0.028	0.035	0.135	0.185
November	0.044	0.043	0.047	0.043	0.041	0.119	0.159
December	0.047	0.058	0.052	0.055	0.035	0.125	0.144

D. 12-Hour Weekday to 18-Hour Annual Average Weekday Factors

NON-MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.251	1.230	1.223	1.222	1.202	1.660	2.085	1.224
February	1.233	1.212	1.199	1.202	1.194	1.653	2.025	1.207
March	1.228	1.202	1.200	1.191	1.183	1.588	1.932	1.202
April	1.224	1.204	1.194	1.188	1.183	1.626	2.007	1.199
May	1.228	1.204	1.197	1.194	1.181	1.642	2.054	1.201
June	1.259	1.236	1.225	1.221	1.209	1.680	2.049	1.229
July	1.269	1.242	1.237	1.232	1.224	1.685	2.092	1.242
August	1.341	1.301	1.289	1.283	1.284	1.773	2.160	1.302
September	1.264	1.241	1.234	1.225	1.219	1.671	2.005	1.236
October	1.238	1.220	1.208	1.207	1.193	1.631	1.953	1.212
November	1.234	1.216	1.209	1.202	1.181	1.628	1.987	1.209
December	1.222	1.201	1.190	1.186	1.181	1.635	1.987	1.196
Average Factor	1.243	1.221	1.212	1.209	1.192	1.635	2.019	1.215

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.052	0.056	0.050	0.054	0.054	0.347	0.522
February	0.049	0.047	0.051	0.050	0.066	0.349	0.542
March	0.048	0.053	0.057	0.061	0.066	0.312	0.535
April	0.045	0.050	0.047	0.044	0.065	0.332	0.467
May	0.045	0.042	0.051	0.041	0.060	0.374	0.550
June	0.040	0.042	0.046	0.041	0.059	0.363	0.566
July	0.039	0.040	0.043	0.039	0.060	0.343	0.601
August	0.124	0.104	0.106	0.089	0.081	0.320	0.422
September	0.058	0.050	0.052	0.053	0.060	0.394	0.471
October	0.056	0.056	0.057	0.054	0.064	0.320	0.453
November	0.056	0.061	0.058	0.058	0.063	0.332	0.420
December	0.057	0.060	0.062	0.059	0.064	0.330	0.507

E. 12-Hour Weekday to 24-Hour Annual Average Weekday Factors

MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.350	1.308	1.298	1.333	1.310	1.926	2.180	1.317
February	1.304	1.280	1.264	1.253	1.246	1.832	2.040	1.269
March	1.297	1.274	1.267	1.258	1.231	1.737	1.921	1.265
April	1.278	1.265	1.248	1.242	1.214	1.805	1.995	1.248
May	1.276	1.272	1.252	1.234	1.208	1.792	2.044	1.248
June	1.299	1.280	1.267	1.265	1.220	1.816	2.002	1.266
July	1.302	1.281	1.268	1.263	1.235	1.841	2.031	1.269
August	1.350	1.320	1.277	1.276	1.252	1.810	2.056	1.294
September	1.300	1.292	1.269	1.258	1.229	1.729	1.951	1.269
October	1.295	1.292	1.272	1.263	1.218	1.757	1.909	1.268
November	1.317	1.291	1.284	1.274	1.238	1.799	2.027	1.280
December	1.314	1.319	1.293	1.304	1.275	1.817	2.036	1.303
Average Factor	1.302	1.285	1.267	1.264	1.234	1.801	2.014	1.270

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.043	0.044	0.047	0.040	0.040	0.150	0.162
February	0.035	0.036	0.035	0.032	0.030	0.143	0.181
March	0.034	0.033	0.042	0.036	0.039	0.140	0.185
April	0.037	0.032	0.038	0.034	0.034	0.128	0.180
May	0.034	0.035	0.037	0.031	0.043	0.135	0.202
June	0.032	0.032	0.035	0.033	0.035	0.142	0.208
July	0.026	0.025	0.025	0.025	0.037	0.144	0.232
August	0.043	0.038	0.031	0.035	0.050	0.156	0.217
September	0.031	0.035	0.032	0.028	0.037	0.144	0.216
October	0.032	0.041	0.039	0.033	0.037	0.142	0.184
November	0.052	0.050	0.055	0.048	0.047	0.127	0.158
December	0.055	0.064	0.061	0.064	0.043	0.133	0.144

E. 12-Hour Weekday to 24-Hour Annual Average Weekday Factors

NON-MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.283	1.261	1.254	1.253	1.232	1.702	2.138	1.256
February	1.266	1.243	1.230	1.233	1.226	1.697	2.079	1.239
March	1.260	1.233	1.231	1.223	1.214	1.630	1.983	1.233
April	1.256	1.235	1.225	1.219	1.213	1.669	2.060	1.230
May	1.260	1.235	1.228	1.224	1.212	1.685	2.108	1.232
June	1.293	1.268	1.257	1.253	1.241	1.725	2.104	1.261
July	1.301	1.275	1.270	1.263	1.256	1.730	2.147	1.274
August	1.376	1.336	1.322	1.317	1.317	1.820	2.217	1.336
September	1.297	1.274	1.266	1.257	1.251	1.716	2.058	1.269
October	1.269	1.251	1.239	1.238	1.223	1.672	2.002	1.243
November	1.265	1.247	1.241	1.234	1.212	1.671	2.039	1.241
December	1.254	1.233	1.222	1.217	1.213	1.680	2.041	1.228
Average Factor	1.276	1.254	1.244	1.241	1.223	1.679	2.073	1.247

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.054	0.058	0.053	0.055	0.058	0.359	0.539
February	0.052	0.050	0.054	0.053	0.071	0.362	0.560
March	0.050	0.055	0.060	0.065	0.071	0.323	0.552
April	0.048	0.053	0.050	0.047	0.070	0.344	0.484
May	0.048	0.046	0.054	0.045	0.066	0.387	0.567
June	0.044	0.045	0.049	0.044	0.066	0.376	0.585
July	0.043	0.046	0.049	0.044	0.066	0.356	0.621
August	0.126	0.107	0.109	0.091	0.085	0.330	0.435
September	0.061	0.054	0.056	0.056	0.067	0.409	0.487
October	0.059	0.059	0.060	0.057	0.070	0.331	0.469
November	0.060	0.064	0.064	0.062	0.069	0.344	0.435
December	0.063	0.065	0.067	0.063	0.070	0.342	0.523

F. 12-Hour Weekday to 24-Hour Annual Average Day Factors

MOTORWAY

1. Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.230	1.190	1.183	1.213	1.192	1.752	1.982	1.198
February	1.190	1.168	1.154	1.143	1.137	1.667	1.856	1.158
March	1.182	1.161	1.155	1.147	1.122	1.582	1.749	1.154
April	1.165	1.153	1.138	1.133	1.107	1.643	1.816	1.138
May	1.163	1.159	1.142	1.124	1.101	1.631	1.860	1.137
June	1.184	1.167	1.155	1.153	1.112	1.653	1.822	1.153
July	1.187	1.167	1.155	1.151	1.126	1.676	1.847	1.157
August	1.231	1.203	1.164	1.163	1.141	1.648	1.870	1.179
September	1.185	1.178	1.157	1.146	1.120	1.574	1.774	1.157
October	1.180	1.177	1.159	1.151	1.110	1.599	1.737	1.155
November	1.200	1.177	1.170	1.161	1.128	1.638	1.844	1.167
December	1.200	1.205	1.180	1.191	1.163	1.657	1.856	1.188
Average Factor	1.187	1.171	1.155	1.152	1.125	1.640	1.832	1.158

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.053	0.054	0.055	0.048	0.045	0.124	0.122
February	0.048	0.048	0.047	0.044	0.042	0.112	0.137
March	0.046	0.045	0.053	0.048	0.049	0.111	0.144
April	0.049	0.045	0.050	0.046	0.043	0.101	0.137
May	0.047	0.046	0.048	0.042	0.050	0.102	0.157
June	0.043	0.044	0.047	0.044	0.042	0.109	0.164
July	0.035	0.038	0.036	0.036	0.043	0.111	0.186
August	0.047	0.047	0.038	0.040	0.048	0.121	0.172
September	0.043	0.048	0.045	0.041	0.043	0.111	0.172
October	0.044	0.051	0.051	0.045	0.045	0.114	0.142
November	0.064	0.063	0.067	0.061	0.059	0.102	0.117
December	0.064	0.072	0.070	0.069	0.053	0.110	0.106

F. 12-Hour Weekday to 24-Hour Annual Average Day Factors**NON-MOTORWAY****1. Factors**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Average Weekday Factor
January	1.182	1.162	1.155	1.154	1.135	1.557	1.953	1.157
February	1.166	1.145	1.134	1.136	1.129	1.552	1.898	1.142
March	1.160	1.136	1.134	1.125	1.117	1.491	1.809	1.135
April	1.156	1.136	1.128	1.121	1.116	1.526	1.882	1.132
May	1.159	1.137	1.130	1.127	1.115	1.540	1.924	1.134
June	1.189	1.167	1.157	1.153	1.142	1.577	1.921	1.161
July	1.198	1.174	1.169	1.163	1.156	1.583	1.959	1.173
August	1.267	1.230	1.218	1.213	1.214	1.667	2.029	1.231
September	1.195	1.174	1.167	1.158	1.153	1.570	1.882	1.169
October	1.169	1.152	1.140	1.139	1.126	1.528	1.828	1.144
November	1.167	1.148	1.143	1.137	1.116	1.528	1.864	1.143
December	1.158	1.136	1.126	1.120	1.116	1.537	1.864	1.131
Average Factor	1.175	1.155	1.146	1.143	1.125	1.536	1.895	1.149

2. Standard Deviations Associated with Factors

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
January	0.078	0.080	0.074	0.078	0.076	0.260	0.395
February	0.074	0.073	0.077	0.076	0.084	0.263	0.417
March	0.073	0.076	0.081	0.085	0.085	0.234	0.414
April	0.070	0.071	0.070	0.069	0.081	0.250	0.357
May	0.069	0.067	0.072	0.066	0.077	0.283	0.424
June	0.064	0.064	0.067	0.063	0.073	0.277	0.442
July	0.063	0.067	0.069	0.065	0.077	0.261	0.467
August	0.132	0.115	0.118	0.099	0.091	0.248	0.324
September	0.078	0.073	0.073	0.073	0.076	0.306	0.367
October	0.078	0.082	0.081	0.078	0.083	0.241	0.345
November	0.075	0.082	0.083	0.082	0.081	0.250	0.315
December	0.080	0.083	0.086	0.082	0.081	0.246	0.385

G Year to Year Factors**Indices of Traffic Flows by Vehicle Type Since 1979****Motorways**

Year	Cars	LGV	OGV	Buses & Coaches	Motor Cycles	All Motors
1979	1.00	1.00	1.00	1.00	1.00	1.00
1980	1.06	1.01	1.01	1.05	1.19	1.03
1981	1.10	1.03	1.03	1.08	1.32	1.02
1982	1.15	1.05	1.05	1.13	1.38	1.09
1983	1.20	1.09	1.09	1.21	1.29	1.13
1984	1.26	1.16	1.14	1.35	1.21	1.17
1985	1.30	1.26	1.17	1.47	1.18	1.22
1986	1.36	1.40	1.19	1.62	1.14	1.28
1987	1.46	1.57	1.24	1.98	1.17	1.37
1988	1.57	1.75	1.31	2.31	1.15	1.48
1989	1.67	1.92	1.37	2.63	1.19	1.57
1990	1.75	2.00	1.40	2.77	1.22	1.63
1991	1.78	1.98	1.45	2.84	1.18	1.65
1992	1.87	2.13	1.41	2.98	1.19	1.73
1993	1.89	2.10	1.38	2.97	1.15	1.73
1994	1.87	2.12	1.52	3.21	1.04	1.73
1995	1.94	2.23	1.52	2.86	1.06	1.80
1996	2.04	2.38	1.50	3.15	1.15	1.88
1997	2.14	2.46	1.51	3.29	1.09	1.96
1998	2.16	2.51	1.50	3.32	1.23	1.98
1999	2.25	2.56	1.52	4.32	1.45	2.04
2000	2.25	2.64	1.50	3.93	1.51	2.04
2001	2.34	2.67	1.49	4.01	1.59	2.10
2002	2.43	2.80	1.50	3.73	1.65	2.18
2003	2.50	2.83	1.49	3.88	1.70	2.22
2004	2.60	3.02	1.56	4.35	1.56	2.31
2005	2.63	2.93	1.45	3.70	1.73	2.29
2006	2.60	3.11	1.42	3.48	1.78	2.29
2007	2.63	3.20	1.41	2.51	1.57	2.31
2008	2.60	3.23	1.42	2.54	1.88	2.29

Other Roads

Year	Cars	LGV	OGV	Buses & Coaches	Motor Cycles	All Motors	Pedal Cycles
1979	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1980	1.02	0.99	0.99	0.97	1.02	1.03	1.09
1981	1.03	0.98	0.98	0.94	1.00	1.02	1.17
1982	1.05	0.98	0.98	0.91	0.98	1.04	1.24
1983	1.08	0.99	0.99	0.89	0.92	1.06	1.26
1984	1.12	1.02	1.01	0.89	0.90	1.09	1.24
1985	1.16	1.06	1.02	0.93	0.81	1.12	1.16
1986	1.21	1.16	1.06	1.03	0.76	1.18	1.16
1987	1.26	1.23	1.08	1.19	0.70	1.22	1.10
1988	1.30	1.30	1.10	1.35	0.66	1.26	1.07
1989	1.34	1.33	1.10	1.46	0.63	1.29	1.08
1990	1.37	1.39	1.09	1.54	0.58	1.31	1.05
1991	1.41	1.37	1.05	1.55	0.53	1.34	1.10
1992	1.39	1.37	0.95	1.60	0.47	1.32	1.12
1993	1.40	1.34	0.99	1.66	0.43	1.32	1.14
1994	1.42	1.38	1.01	1.78	0.40	1.34	1.08
1995	1.43	1.37	0.97	1.62	0.40	1.34	1.10
1996	1.44	1.36	0.95	1.58	0.38	1.35	1.17
1997	1.45	1.37	0.96	1.50	0.35	1.36	1.03
1998	1.45	1.37	0.93	1.50	0.35	1.36	0.94
1999	1.46	1.37	0.85	1.53	0.39	1.37	0.98
2000	1.45	1.40	0.85	1.50	0.42	1.36	0.92
2001	1.45	1.34	0.80	1.52	0.44	1.35	0.88
2002	1.45	1.34	0.74	1.50	0.45	1.35	0.81
2003	1.46	1.35	0.73	1.44	0.44	1.36	0.78
2004	1.46	1.39	0.76	1.43	0.42	1.36	0.75
2005	1.45	1.39	0.70	1.44	0.41	1.35	0.81
2006	1.45	1.42	0.67	1.44	0.39	1.35	0.82
2007	1.45	1.45	0.63	1.32	0.39	1.35	0.88
2008	1.44	1.42	0.62	1.29	0.40	1.32	0.94

APPENDIX 2
SOME RECENT GMTU PUBLICATIONS

REPORTS

No	Title	Author(s)	Date
1125	Analysis of GMATS Data to Assess the Potential for P&R from South Manchester	P Bearon	Apr 2006
1134	Analysis of GMATS Data to Assess the Potential for P&R from East Manchester	P Bearon	Apr 2006
1136	Analysis of GMATS Data to Assess the Potential for P&R in the Oldham/Rochdale Corridor	P Bearon	May 2006
1137	Road Casualty Statistics Greater Manchester 2005	D Chiu	Jun 2006
1138	Transport Statistics Greater Manchester 2005	E Ellis et al	Jun 2006
1139	Transport Statistics Bolton 2005	E Ellis et al	Jul 2006
1140	Transport Statistics Bury 2005	E Ellis et al	Jul 2006
1141	Transport Statistics Manchester 2005	E Ellis et al	Jul 2006
1142	Transport Statistics Oldham 2005	E Ellis et al	Jul 2006
1143	Transport Statistics Rochdale 2005	E Ellis et al	Jul 2006
1144	Transport Statistics Salford 2005	E Ellis et al	Jul 2006
1145	Transport Statistics Stockport 2005	E Ellis et al	Jul 2006
1146	Transport Statistics Tameside 2005	E Ellis et al	Jul 2006
1147	Transport Statistics Trafford 2005	E Ellis et al	Jul 2006
1148	Transport Statistics Wigan 2005	E Ellis et al	Jul 2006
1153	Analysis of GMATS Data to Assess the Potential for P&R in the Leigh/Wigan Corridor	P Bearon	Jul 2006
1158	Chorlton QBC After Monitoring – Report of Surveys	P Howarth	Aug 2006
1183	Bus Lane Enforcement Monitoring – Report of Before Study	J C Mayoh	Aug 2006
1192	Wigan Congestion Study	P Bearon R Boncinelli	Sep 2006
1205	Bolton Casualty Research Project – Road Accident Casualty Trends Since 1994	D Chiu	Oct 2006
1214	Analysis of Travel Survey Data to Assess the Potential for Park and Ride along the Bolton Corridor	P Bearon	Mar 2007
1236	A62 Huddersfield Road QBC Scheme “Comparison of Before and After Data”	R Boncinelli	Dec 2006
1238	School Travel Survey – Report of Survey Autumn 2006 (Hands Up Survey)	M White	Jan 2007
1255	Results of Consultation on the Greater Manchester Cycling Strategy	A Castle	Jan 2007
1257	A Before and After Analysis of Accidents at Puffin Crossings and at Signalised Junctions with Nearside Indicators	D Chiu	Jan 2007
1258	Analysis of Travel Survey Data to Assess the Potential for Park and Ride along the Altrincham Corridor	P Bearon	Mar 2007
1288	Road Casualty Statistics Greater Manchester 2006	D Chiu	Jul 2007
1289	Transport Statistics Greater Manchester 2006	E Ellis et al	Jul 2007
1290	Transport Statistics Bolton 2006	E Ellis et al	Aug 2007

No	Title	Author(s)	Date
1291	Transport Statistics Bury 2006	E Ellis et al	Aug 2007
1292	Transport Statistics Manchester 2006	E Ellis et al	Aug 2007
1293	Transport Statistics Oldham 2006	E Ellis et al	Aug 2007
1294	Transport Statistics Rochdale 2006	E Ellis et al	Aug 2007
1295	Transport Statistics Salford 2006	E Ellis et al	Aug 2007
1296	Transport Statistics Stockport 2006	E Ellis et al	Aug 2007
1297	Transport Statistics Tameside 2006	E Ellis et al	Aug 2007
1298	Transport Statistics Trafford 2006	E Ellis et al	Aug 2007
1299	Transport Statistics Wigan 2006	E Ellis et al	Aug 2007
1304	Person Delay Surveys – Technical Review Document	D Holt	Apr 2007
1310	Manchester Bus Lane Enforcement Monitoring After Study	P Howarth	May 2007
1331	The Greater Manchester Emissions Inventory 2005 Update	I Hull T Morris K Fraser	Jul 2007
1333	Greater Manchester TIF Bid - SATURN Model Forecasting Report	John Wharf	Mar 2008
1337	The Greater Manchester Emissions Inventory 2004 Update	I Hull	Sep 2007
1342	Cycle Monitoring Greater Manchester Jan-July 2007	D Weston	Oct 2007
1365	SEMMMS QBC Corridor H M60 Junction 1 Before/After Report	P.Howarth	Dec 2007
1366	Greater Manchester Cycling Progress Report	E Ellis	Dec 2007
1368	The Greater Manchester Emissions Inventory 2010 Forecast	I Hull	Dec 2007
1387	Transport Statistics Greater Manchester 2007	E Ellis et al	Aug 2008
1388	Transport Statistics Bolton 2007	E Ellis et al	Aug 2008
1389	Transport Statistics Bury 2007	E Ellis et al	Aug 2008
1390	Transport Statistics Manchester 2007	E Ellis et al	Aug 2008
1391	Transport Statistics Oldham 2007	E Ellis et al	Aug 2008
1392	Transport Statistics Rochdale 2007	E Ellis et al	Aug 2008
1393	Transport Statistics Salford 2007	E Ellis et al	Aug 2008
1394	Transport Statistics Stockport 2007	E Ellis et al	Aug 2008
1395	Transport Statistics Tameside 2007	E Ellis et al	Aug 2008
1396	Transport Statistics Trafford 2007	E Ellis et al	Aug 2008
1397	Transport Statistics Wigan 2007	E Ellis et al	Aug 2008
1408	Casualty Statistics Greater Manchester 2007 (Main Report)	D Chiu et al	Jul 2008
1409	Casualty Statistics Greater Manchester 2007 – Countywide Tabulations	D Chiu	Jul 2008
1410	Casualty Statistics Greater Manchester 2007-	D.Chiu	Aug 2008

No	Title	Author(s)	Date
	District Tabulations and Comparisons		
1411	Additional analysis on freight and car movements across the Trafford Park key centre cordon	P Bearon D Nixon	Mar 2008
1412	Monthly Cycle Monitoring Greater Manchester 2007	D Weston	Mar 2008
1414	SEMMMS Local Centre Activity Surveys Comparison of 2005/06 and 2008-2009 Results	R Boncinelli	Mar 2008
1416	Trends in Car Journey Times on the 15 Target Congestion Routes 2003 to 2007	A Castle E Ellis	May 2008
1418	Summary of Congestion Monitoring Findings	P Howarth J Wharf	Apr 2008
1468	Local Signing for Freight in Manchester	R Boncinelli / R Davies / L Vicary/D Nixon	Jan 2009
1476	Transport Statistics Greater Manchester 2008	E Ellis et al	Sep 2009
1477	Transport Statistics Bolton 2008	E Ellis et al	Sep 2009
1478	Transport Statistics Bury 2008	E Ellis et al	Sep 2009
1479	Transport Statistics Manchester 2008	E Ellis et al	Sep 2009
1480	Transport Statistics Oldham 2008	E Ellis et al	Sep 2009
1481	Transport Statistics Rochdale 2008	E Ellis et al	Sep 2009
1482	Transport Statistics Salford 2008	E Ellis et al	Sep 2009
1483	Transport Statistics Stockport 2008	E Ellis et al	Sep 2009
1484	Transport Statistics Tameside 2008	E Ellis et al	Sep 2009
1485	Transport Statistics Trafford 2008	E Ellis et al	Sep 2009
1486	Transport Statistics Wigan 2008	E Ellis et al	Sep 2009
1501	Further analysis of the school census data and its implications for the LTP4 school indicator	D. Atkin	Feb2009
1517	Casualty Statistics Greater Manchester 2008 (Main Report)	D Chiu et al	Aug 2009
1518	Casualty Statistics Greater Manchester 2008 – Countywide Tabulations	D Chiu	Jul 2009
1519	Casualty Statistics Greater Manchester 2008- District Tabulations and Comparisons	D.Chiu	Jun 2009
1520	Congestion Route Report	D Atkin	May 2009