

## APPENDIX 3.2

### Existing Road Capacity Check

This appendix shows the assessment of the existing A2 Shore Road within the defined bottleneck to determine the practical maximum traffic flow capacity of the lengths of the road between the junctions and to compare that capacity with the measured flows.

It is marginal whether Shore Road should be classed as a category UAP2 good standard road or a category UAP3 variable standard road, the main difference is that if Shore road suffered from indiscriminate parking outside of properties, it would certainly be in the UAP3 category. By comparison with the statistical flows on both categories, the measured link flows on Shore Road between the junctions were found to be:

North of Station Road	<b>less than the statistical maximum capacity flow</b>
South of Station Road	<b>greater than the statistical maximum capacity flow</b>
South of University	<b>close to the statistical maximum capacity flow</b>

## Existing Road Capacity Check

### **Basis of check**

TA 79/99 Amendment No. 1 - TRAFFIC CAPACITY OF URBAN ROADS

### **Existing road characteristics– A2 Shore Road Greenisland**

The carriageway is locally 7.5m wide but it generally varies from 8-9m wide.

Footways are generally less than 2m wide and in places do not exist.

The length of road in question is 2.25km.

The road has a 40mph speed limit.

There are 8 junctions and major accesses and 120 driveways in that length.

There is access to residential properties, there is a Spar shop and a school fronting the road.

There are no waiting restrictions but parking is rarely evident due to nature of the road and high traffic flows along it.

Pedestrians cross at-grade but there is only one formal crossing, at a signalised junction.

Buses stop at the kerbside.

### **Assessment against Table 1 Types of Urban Road**

The road could perhaps be classed as UAP2 a good standard road, but more likely UAP3 a variable standard road.

### **Assessment against Table 2 Capacity of Urban Roads**

This gives the maximum sustainable flow in one hour in one direction under favourable road and traffic conditions, with a 60/40 split on directional flows.

The flows given are for a UAP2 at 7.3m **1470vph**, at 8m **1500vph**, at 9m **1550vph**

The flows given are for a UAP3 at 7.3m **1300vph**, at 8m **1400vph**, at 9m **1530vph**

(NB The 8m flows are interpolated from the table.)

Existing traffic flows recorded in the morning peak on 26<sup>th</sup> May2005 vary along the road (HGV flows are low percentage):-

North of Station Road where carriageway is generally 8m

- 1250vph in a northerly direction and 800vph in a southerly direction – 60/40 split (these are evening peak flows)

South of Station Road where carriageway is 7.5m

- 1550vph in a southerly direction and 700 in a northerly direction – am 69/31 split. (these are morning peak flows)

South of University entrance where carriageway is 9m  
- 1500vph in a southerly direction and 850 in a northerly direction – 64/36 split.  
(these are morning peak flows)

By comparison with the statistical flows on both UAP2 and UAP3, the measured link flows on Shore Road between the junctions are:

North of Station Road	<b>less than the statistical maximum capacity flow</b>
South of Station Road	<b>greater than the statistical maximum capacity flow</b>
South of university	<b>close to the statistical maximum capacity flow</b>

Two points to note:

1. the capacity flows quoted are statistical and will vary with local circumstances
2. the measured flows quoted for the road north of Station Road are the evening peak hour flows. The morning peak hour flows are lower, which is not the case on other links, and this may be because the morning flows are actually constrained by the Station Road signals.

Feature	ROAD TYPE				
	Urban Motorway	Urban All-purpose			
	UM	UAP1	UAP2	UAP3	UAP4
<b>General Description</b>	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
<b>Speed Limit</b>	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph
<b>Side Roads</b>	None	0 to 2 per km	more than 2 per km	more than 2 per km	more than 2 per km
<b>Access to roadside development</b>	None. Grade separated for major only.	limited access	access to residential properties	frontage access	unlimited access to houses, shops & businesses
<b>Parking and loading</b>	none	restricted	restricted	unrestricted	unrestricted
<b>Pedestrian crossings</b>	grade separated	mostly grade separated	some at-grade	some at-grade	frequent at-grade
<b>Bus stops</b>	none	in lay-bys	at kerbside	at kerbside	at kerbside

**Table 1 Types of Urban roads and the features that distinguish them**

		Two-way Single Carriageway- Busiest direction flow (Assumes a 60/40 directional split)								Dual Carriageway				
		Total number of Lanes								Number of Lanes in each direction				
		2				2-3	3	3-4	4	4+	2		3	4
Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	12.3m	13.5m	14.6m	18.0m	6.75m	7.3m	11.0m	14.6m
Road type	UM	Not applicable										4000	5600	7200
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300	3350	3600	5200	*
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700	2950	3200	4800	*
	UAP3	900	1110	1300	1530	1620	*	*	*	*	2300	2600	3300	*
	UAP4	750	900	1140	1320	1410	*	*	*	*	*	*	*	*

**Table 2 Capacities of Urban Roads  
One-way hourly flows in each direction**

Notes

1. Capacities are in vehicles per hour.
2.  $HGV \leq 15\%$
3. (\*) Capacities are excluded where the road width is not appropriate for the road type and where there are too few examples to give reliable figures.