Isle of Man Government

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Draft Area Plan for the East

PIP 3

Impact of the Draft Area Plan on the highway network

Cabinet Office

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Contents

1. Position Statement

1.1 On 24th May 2018, Cabinet Office published the Draft Area Plan for the East along with eight supporting Evidence Papers. Highway matters in the East were not subject to a specific evidence paper at the time of the Draft Plan but were rather dealt with as part of the Written Statement (Chapter 7, Transport and Utilities). Paragraph 7.11.1[1] on "Traffic Modelling – demand and serviceability" stated:

"Modelling for the entire road transport network has informed the preparation of this plan and work continues in terms of the assessment of the proposal sites singularly and in terms of the distribution pattern put forward in this Draft. As it is not possible to determine in what order development will come to market, modelling is informative only at this stage[2]. For the time being, general and some specific guidance is set out in Development Briefs which will be refined before the Public Inquiry in liaison with the Highways Division in the Department of Infrastructure."

1.2 Paragraph 7.11.2 went on to state:

"In general terms, there are limited proposals for transport in the Plan Area which are distinct from the Isle of Man Strategic Plan Policies or the site specific Proposals for particular sites. There is the potential for highway alterations and improved access points associated with the Comprehensive Treatment Areas. Further details are set out in Chapter 13."

1.3 This Paper represents a new Evidence Paper and summarises specific work that has been undertaken to try and strengthen the evidence base relating to highway matters in the East; focussing on the overall network, junctions and the expected impact of planned mitigation over the next few years. This paper takes into account the advice of the Highways Division of DOI and the findings of the consultants commissioned by DOI to examine and model the impact of the Draft Plan on the highway network in the East. It is of course recognised that the network is Island-wide and doesn't start and end at the plan boundaries.

2.0 Baseline traffic model 2016

2.1 The baseline dataset of traffic counts and movement is contained in the 2016 Douglas Paramics Discovery Model (developed in 2017). The Department of Infrastructure (DOI), has been working with SYSTRA Limited (SYSTRA) since 2009. Originally employed to model the Lower Douglas area (LDPM), the model was extended to include the wider area of Douglas including the road network out to the areas of Spring Valley, Ballanard Road, Hillberry, Birch Hill and Onchan in 2016. In 2018, the Department of Infrastructure again commissioned SYSTRA to analyse the effects of adding nominated development yield potential (i.e. the Draft Area Plan for the East) on the road network and the report made

[1] Draft Area Plan for the East, Chapter 7, Paragraph 7.11.1, page 66
[2] Modelling will be further explained and developed ahead of the Public Inquiry

available to CO was dated November 2018. The SYSTRA Report attached is dated June 2019.

2.2 Requests for information/checks have flowed from Cabinet Office to DoI and then on to SYSTRA who has subsequently fed back its calculations to DOI. The June 2019 version of the report makes minor changes to the November 2018 report and Departments are working together to ensure the data/information is as robust as possible and the methodology can be understood. There may be some merit in additional DOI information being made available ahead of the Inquiry.

3.0 Work to test the impact of the Draft Area Plan on the highway network

3.1 The Draft Plan itself was taken to be the baseline situation to be modelled and was originally referred to by Cabinet Office as "Scenario 1". SYSTRA set out its findings in a report dated 26th November 2018. In simple terms, the aim was to answer the question – *what would be the impact on the highway network if the Draft Plan were approved and came into operation?*

3.2 Throughout the process of drafting the Area Plan, it was recognised that the bringing forward of additional sites for development would have an effect on the road network; both major routes and local roads. It remains a crucial element of the plan preparation process to ensure that those sites which are taken forward for development maintain an efficient, reliable and safe highway network and that the plan as a whole does not adversely affect the potential within the plan area to make long term improvements to the network. It is important to not only look at the impact of plan proposals on the network but also the impact of mitigation measures. Mitigation, which is discussed later in this paper has a balancing effect in lowering the impact of additional development.

4.0 Results of modelling the impact of the Draft Plan for the East on the highway network (modelling work undertaken May 2018 to June 2019)

The Technical Report

4.1 After the publication of the Draft Plan in May 2018, SYSTRA started to undertake a cumulative assessment, using the 2016 DPM. Work examined the potential impact of the proposed development sites on the highway network in Douglas and Onchan, expressed principally in terms of travel time at nominated peak periods. In doing so, and as reported in the SYSTRA Report dated 26th November 2018, this accorded to the usual practices of traffic engineering studies and the patterns and data available in the 2016 model. A summary of the work is set out below.

Scenario 1 Assessment

Date	**Work**
May/June 2018	Cabinet Office/DOI agreement to carry out modelling using the published draft plan. DoI instructed SYSTRA direct. The availability of the Draft Plan provided, in effect, a shortlist of identified sites and supporting proposals. This had only been provisionally available as a long list of sites before May 2018.
26th November 2018	Date of SYSTRA Report
	Report forwarded to Cabinet Office from Department of Infrastructure
Details	
Cabinet Office overview of methodology	SYSTRA referred in paragraph 2.2.1 of its report, to 82 sites which are listed in Tables 1, 2, 3 and 4 in the Report. All of these sites are listed in Evidence Paper DP EP1 "All Sites List" published on 25th May 2018. It is noted that some of the 82 sites do not appear as numbered sites in the Draft Plan. For instance BH031 is referred to along with the estimate of 140 net yield estimated by Cabinet Office at the time of the Draft Plan. However, Tables 1 to 4 also include sites which were not highlighted as specific sites in the Draft Plan and were shown to be 'washed over' in the 'All sites' list – e.g. DH013 (Table 1). All of these sites were relatively small. A small number of sites were not included in Tables 1 to 4 but did appear in the Draft Plan as a specific site e.g. DH048 – Glenside. CO understands that the modelling leaves out the Strategic Reserve Sites. CO is content that where sites have been included by SYSTRA, the yield has reflected the net yield assumptions produced internally by CO at the time of the Draft Plan; the precise detail of which were not released publicly at the time of the Draft Plan.
SYSTRA Report Conclusions (see Section 4 of Report for full details)	• Average network speeds across the entire network were lower with the Plan in place. • Congestion is shown to mainly develop on the north side of

	Douglas during the AM period and generally along the arterial routes into the town. • Queuing was shown to form along Peel Road and the A23 at Braddan during the PM period with significant congestion forming in Douglas itself particularly along Peel Road, Quarterbridge Road, Alexander Drive, Woodbourne Road and Bucks Road corridors. Queuing also on Cooil Road and along Hillberry Road into Onchan during the PM Period. • Saturday period shown to cope relatively well. • Further investigation needed on location and level of mitigation required within the network. • Possible that road network performance may improve further if dynamic signal controls used.

5.0 Cabinet Office summary of the impact on the network after reviewing the SYSTRA Report and consultation with Highways Division

Cabinet Office understands that:

i. The traffic generated by the proposed sites significantly increases ~~reduces~~ the average journey times across the network in both AM and PM periods.
ii. Currently the network operates at service level 1 in both AM and PM periods and average speeds are greater than 17mph. The AM average speed is currently 20mph and the PM average speed is 19mph.
iii. The impact on the network of the proposed development sites would reduce the AM service level to 2 with a predicted average speed of 16.5mph and reduce the PM service level to 4 with a predicted average speed of 12mph.
iv. There would be moderate effects in the AM weekday peak period, and negligible effects on the Saturday and Sunday AM and PM peak periods.

v. Significant effects were modelled in the weekday PM peak periods, both reducing the average travel speed and increasing the journey time by amounts over 100%, when compared to the 2016 input data.

These findings will be highlighted spatially on supplementary maps which are currently being prepared. These will be available for the Public Inquiry.

6.0 Is it beneficial to change the Draft Plan proposals at this point and re-model?

6.1 Consideration was given to re-modelling e.g. taking sites out over a certain size or in a certain location or changing the distribution method on a more drastic scale. Perhaps it was worth seeing the impacts on the network if changes were made? The broad view was that the outcome was likely to be quite similar to 'Scenario 1' given the base model 2016 and that effort should be focused on looking at the impact of promoting a sustainable transport shift as this was the policy direction being promoted across Government.

7.0 A 'Sustainable Transport Shift'

7.1 The journey and traffic effects of the modelling give food for thought. This effect is both in terms of much lower journey speeds, on average, throughout the road network and increases in average journey time. In terms of public transport, reliance is substantially on a bus delivery model and all buses operate on a shared carriageway with other road traffic, without separate bus lanes for journeys. The effects on bus timetables of very significant increases in journey time and similarly significant decreases in journey speed have not been quantified, but can only lead to considerable disruption.

7.2 Given the constraints of the local road network in the plan area, with very limited opportunities for additional carriageway provision, the modelled effects must be considered carefully, ahead of additional development land release, as without mitigation the level of additional vehicle journeys and the predicted impact on the network as a whole is inevitable.

7.3 At this point, it is worth referring to what can be expected in terms of a sustainable transport shift. What this means is essentially 'mitigation'.

7.4 The publication of the Draft Plan and the subsequent modelling work has helped to focus attention on the long term solutions and policy measures which may affect people's behaviour when it comes to travelling on the road network and the efficiency of that network itself.

7.5 DOI is continuing to work on paper to report back on the modelling findings and the next set of work proposed.

7.6 **Cabinet Office understands for the time being that:**

i. Development sites should be released in stages and traffic impacts assessed at each stage to determine if sufficient capacity available.
ii. That an 'active travel shift' is expected to occur.
iii. There are 'hot spots' in terms of congestion on the network.

iv. There are benefits in installing a new intelligent traffic light system.
v. Creating new highway links are not practicable or desirable. Making the existing network as efficient as possible is the preferred way forward.
vi. Congestion charging is worth investigating. This would not add capacity but would help to manage it.
vii. Bus lanes are not generally a possibility but it is worth investigating a bold approach to prioritise new bus route into and out of Douglas.

Also:

Areas of naturally slow moving vehicles occur at St Ninians, Woodbourne Road and Rosemount which needs improvement. St Ninians could be considered for road widening or a roundabout but this needs to take account of the impact on TT.

Electric charging points should be considered in all new developments.

DOI is to share with Cabinet Office the findings of the car parking studies being undertaken to investigate the supply of on and off street public parking places and private parking spaces available to businesses.

DOI is to share with Cabinet Office any updates to the Active Travel Investment Plan.

There is a need to consider the existing TT Access road and future plans to improve/change it.

Park and walk or park and cycle has potential but needs further investigation.

8.0 Cabinet Office recommendations for the Area Plan:

i. The highway impact has been an important contributory factor in judging how, when and where sites are delivered in the East. Attention has been focused on the longer term mitigation policy measures that are being put in place which aim to influence people's behaviour when it comes to travelling on the road network and the efficiency of that network itself.

ii. Making the existing network as efficient as possible is the preferred way forward.

iii. There is confidence in the ability of the "active travel" focus to deliver tangible changes in behaviours going forward, particularly as the Active Travel Investment Plan starts to take effect.

iv. Areas of naturally slow moving vehicles in Douglas centre hot spots, can be improved by junction improvements and intelligent traffic lights.

9.0 What does this report mean for the Draft Plan going into Public Inquiry?

1. Development sites for general release (as specific sites) should be within the Active Travel 2.5 mile radius which is where the active travel policy drive is most likely to have an impact[3].

2. There needs to be phased release of the sites, and all should have development/planning briefs and clear requirements that need to be satisfied before detailed approval and commencement of work on site.

3. Development impact should be thoroughly assessed prior to detailed approval and mitigation measures factored in from the start. Focus should be on reducing the need to travel by motorised transport especially by car, improving accessibility by all modes of travel and influencing active travel behaviours and maintaining mobility for highway users.

4. There is a clear need to monitor the outcome of Government's ongoing projects on car parking and integrated transport strategies.

5. There is a need to encourage through development/planning briefs, the advantages and where appropriate, the need to include electric charging points in new development schemes as well as other spaces.

[3] see **PIP 4 - Proposals Map (Map 3) updated to show the Active Travel Investment Plan boundary**