



DTPC

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July 2015

**PROPOSED MIXED USE DEVELOPMENT
NEW CHINA TOWN, LIVERPOOL**

**STRATEGIC TRANSPORT ASSESSMENT
POST SUBMISSION ADDENDUM**

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A	6/11/2015	Updated assessments following submission

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1. INTRODUCTION

DTPC has been appointed by Roman Summer Associates on behalf of China Town Development Company Limited to provide transport and highway advice for the traffic and transportation implications associated with their proposed mixed use development at New China Town, Liverpool.

The application relates to a site located on the heart of the urban area, currently occupied in part by buildings but mostly cleared and designated brownfield which will be redeveloped.

In order to advise the highway authority, a Strategic Transport Assessment (STA) was submitted setting out the setting, policy framework accessibility, history and baseline network review.

This was supported by an Addendum to the STA which provided information on trip rate derivation, trip generation and distribution to allow the detailed the detailed junction assessments to be undertaken of the development proposals, and formed supplementary information to assist in the determination of the planning application.

Following submission a technical review was undertaken by LCC on the layouts provided and the detailed junction assessment.

This report provides the feedback from LCC and the final responses based on an integrative discussion to confirm matters on a staged basis.

Section A deals with the design and section B the assessments.

This report has been prepared solely in connection with the proposed development as stated above. As such, no responsibility is accepted to any third party for all or any part of this report, or in connection with any other development.

2. SECTION A

Introduction

The chapter sets out the feedback provided and the responses made.

LCC feedback

Swept path assessment needed for the full extent of affected carriageway, in addition to the smaller sections provided:

- St James' Street / Great George Street (through modified junction)
- St James Street into Duncan Street
- Duncan Street to Upper Pitt Street
- Upper Pitt Street into Cookson Street
- Cookson Street into Grenville St South
- Grenville Street South into Hardy Street

Swept path assessment will also need to be undertaken for the movements into and out of the underground parking accesses to / from Grenville Street South and Upper Pitt Street.

The swept path diagram "*New China Town turning head and 2m Path*" for the turning head on Hardy Street appears to show the refuse vehicle over-running the adjacent footway (on both extents of the manoeuvre). Clarification is needed as to what this diagram is showing with regards to the turning head on Hardy Street.

The swept path diagram shows the movement for a large vehicle from Upper Pitt Street southbound to Duncan Street. The swept path appears to show the vehicle over-running the eastern footway which would not be acceptable.

The scheme plans show a row of new residents parking bays along the southern kerblines of Grenville Street South. These bays are shown as extending over the driveway access to adjacent properties. The plans should be modified so that access to the driveways is not impeded.

It would be helpful if an indication of what 'short-stay customer parking' is provided – Any restrictions will need to be supported by TROs which would need to be consistent with, and complementary to the restrictions in the surrounding area, particularly those in the Baltic Triangle area.

At the boundary of Phase 1 on Cookson Street, loading bays are shown on carriageway. These loading bays are shown as occupying over half the width of the carriageway and if occupied by HGVs could prevent other vehicles from safely passing. Furthermore, a vehicle turning left from the new link road would have significantly restricted visibility along Cookson Street should a HGV be stopped in the loading bay closest to the new junction. The vehicle would have to make a blind movement onto the oncoming side of the carriageway to negotiate past the HGV. This arrangement would not be acceptable to the highway authority on road safety grounds and the loading bays must be re-designed. Similarly, the loading bay shown adjacent to the junction with Upper Pitt Street may also restrict safe movement through the junction. The loading bay on Duncan Street should also be reconsidered to avoid impeding movements through the junction with St James' Street.

We note that a number of footways are to be altered as part of the proposals. It would be useful for a revised plan to be annotated to show the resultant width of any footways that are to be reduced from the existing provision.

The addition of the cycle lane southbound at the junction of Gt George St / St James' Street changes the southbound layout, but the kerblines don't appear to have been altered to incorporate this change.

It would be useful if the scheme plans were annotated to show the resulting lane widths here and along the affected section of Great George Street. Similarly, the introduction of the pedestrian island on St James' Street results in the exit lane reducing in width. The drawing should be annotated to show the width of the lane between the western most tip of the island and the adjusted kerb-line (this junction modification should also be supported by swept path analysis).

Response

Appendix A sets out the detailed review of the concerns raised and the revised final drawings from landscape architects provide the detailed layout and the landscape design.

3. SECTION B

Introduction

The chapter sets out the feedback provided and the responses made.

LCC feedback

Trip Generation:

Pass-by Assumption – We agree that the trip generation for retail element of the scheme is likely to consist of a high level of pass-by trips, and we consider the 30% factor to be reasonable. However, the methodology used to apply this to the trip generation needs to be revised. The TA states that the overall trip generation for retail has been reduced by 30% and a blanket reduction has then been applied. In reality, pass-by trips will still enter and exit the site access / pass through the junctions to get to / from the scheme. Currently the assessment does not allow for this and appears to have removed the discounted trips from the network entirely. The traffic movements and subsequent modelling should therefore be revised accordingly so that these pass-by trips are included at the key access points.

Trip Distribution:

The assumed split between the northern access and southern access of 1/3 and 2/3 accordingly is accepted by Highways. However, we would question the benefit of modelling the two scenarios referred to as 'robust' and 'realistic'. Whilst these variations are important in terms of the local access, they do not affect the wider network and add un-necessary detail and volume to the assessment.

Junction Capacity Assessment:

It appears that the new link road junction with Great George Street has not been included within the model. Given that this is a new junction on the network, this must be modelled to demonstrate an acceptable level of operation can be achieved.

The TA appendix and TRANSYT outputs refer to model runs 'with Improvements' and 'with network improvements'. Could it be clarified what these improvements are, as they appear in both the with-development (proposed) and without-development (existing) scenarios?

The stage sequence in the TRANSYT model "2015 Survey Flows AM / PM" does not match that shown in the TA report (page 10) for the St James' Street / Great George Street junction. In both the AM and PM 2015 TRANSYT models an indicative green arrow early start is shown for the right turn into St James' Street from Great George Street, but this is not shown on the stage sequence diagram in the TA report, nor is the existing signal equipment able to cater for this arrow phase. We note that in the proposed model in the 2015 AM peak the northbound movement on Great George Street starts before the right turn, whilst the PM retains the early start. Whilst appreciating there maybe times where stage sequences vary between peaks, variation of the appearance of such indicative arrow phases should be avoided where possible.

A number of timing inconsistencies have been noticed in the TRANSYT models for the junction of Great George Street and St James' Street. These include missing and / or inconsistent intergreen timings between stage changes. These should be updated accordingly.

Notwithstanding the above comments, the results of some of the key movements in the with-development scenarios are of concern. In the 2015 with-development results, Great George Street (northbound) at St James' Street is predicted to experience a significant increase in Degree of Saturation (DoS). Whilst the DoS remains just under the acceptable threshold, the resultant queue

increases significantly and would be of a level that will block back to, and potentially interfere with the operation of the Upper Parliament Street junction, and would therefore need to be mitigated.

We note that in the PM 2015 with-development scenario it appears the flow for the southbound movement on Great George Street has been set to 220pcus rather than 520pcus. Linked to this, we would also suggest that the southbound movement on Great George Street (Link 22 in the TRANSYT models) should be modelled as two-links, as the lane allocation is different between the two southbound lanes. The nearside lane is marked for left turns, whilst the centre lane is ahead. The flows on these two lanes are imbalanced with the majority of traffic travelling ahead. Modelling this as a single link in TRANSYT assumes the traffic could be evenly split between the two lanes which would not happen in practice. We suggest that this link be re-coded accordingly. Also on this link (link 22) we note that the saturation flows remain unchanged between the with-scheme and without-scheme models. The scheme proposes to introduce an on-street cycle lane which would change the lane widths at the junction. This change in effective lane width should be represented in the model.

It is not clear from the TRANSYT outputs how the proposed controlled pedestrian crossings at the junction of St James' Street with St George Street will operate. No information has been included to show the proposed staging and from the positioning of the crossings it appears that an all-red pedestrian stage may be required. Having reviewed the proposed model it appears that the stage sequence mirrors that of the existing model (albeit with slightly modified timings) and no allowance appears to have been made for the crossings. Confirmation of the proposed stage sequence should be provided. This is a key issue for this junction, as the impact of the introduction of controlled crossings on this key gateway to the city centre needs to be clearly understood.

Also of concern is the predicted increase in the DoS of key movements at the Upper Parliament Street junction. In the with-development results, two movements are predicted to operate just below the 100% threshold, whilst in the without-scheme assessment these links operate with ample spare capacity.

Linked to this we note that the results shown in the 'Robust' and 'Realistic' results for the 2015 with-development scenario differ significantly between the two scenarios. However, the traffic flows in the respective figures show identical flows between the two scenarios. The reason for this should be confirmed given the significance of these high DoS results.

Response

Trip Generation

DTPC Response - Pass by trips will be incorporated in an updated run if require but previous approval used the same approach of removal from the trips etc and no pass by assessment.

Trip Distribution

DTPC Response - Comments noted by DTPC. No Further action required.

Junction Capacity Assessment:

DTPC General Response – The point raised has been reproduced, below which a response / DTPC comment has been provided.

It appears that the new link road junction with Great George Street has not been included within the model. Given that this is a new junction on the network, this must be modelled to demonstrate an acceptable level of operation can be achieved.

DTPC Response – The new link road junction with Great Georges Street will be modelled using PICADY. This is considered acceptable as the proposed junction is located more than 200m to nearest signalised junction located to the north or south. This assessment will be submitted as part of an addendum report to confirm that the right turn lane can accommodate any queues and thus not affect the through route movements.

The TA appendix and TRANSYT outputs refer to model runs ‘with Improvements’ and ‘with network improvements’. Could it be clarified what these improvements are, as they appear in both the with-development (proposed) and without-development (existing) scenarios?”

DTPC Response – The improvements refer to the widening of the St James Street to accommodate the right turn ghost island junction into the site and Duncan Street.

The stage sequence in the TRANSYT model “2015 Survey Flows AM / PM” does not match that shown in the TA report (page 10) for the St James’ Street / Great George Street junction. In both the AM and PM 2015 TRANSYT models an indicative green arrow early start is shown for the right turn into St James’ Street from Great George Street, but this is not shown on the stage sequence diagram in the TA report, nor is the existing signal equipment able to cater for this arrow phase. We note that in the proposed model in the 2015 AM peak the northbound movement on Great George Street starts before the right turn, whilst the PM retains the early start. Whilst appreciating there maybe times where stage sequences vary between peaks, variation of the appearance of such indicative arrow phases should be avoided where possible.

DTPC Response – Could we have a contact name for the individual who reviewed the Transyt model as we would like to clarify the issue. The right turn into St James Street is not modelled as an Indicative Green as it does not receive a green indication in advance of the ahead movement on the same arm. This can be confirmed by the fact that the ahead and right turn movement from Great George Street north have the same phase, i.e. G, and there is no associated second phase modelled for the right turn movement.

A number of timing inconsistencies have been noticed in the TRANSYT models for the junction of Great George Street and St James’ Street. These include missing and / or inconsistent intergreen timings between stage changes. These should be updated accordingly.

DTPC Response – Could we have a contact name for the individual who reviewed the Transyt model as we would like to clarify the issue. Once the intergreen timing were inputted, directly from the signal data supplied the Highway Authority, they were not changed therefore it would be useful to know in which models there are “missing / inconsistent timings between stages”.

Notwithstanding the above comments, the results of some of the key movements in the with-development scenarios are of concern. In the 2015 with-development results, Great George Street (northbound) at St James’ Street is predicted to experience a significant increase in Degree of Saturation (DoS). Whilst the DoS remains just under the acceptable threshold, the resultant queue increases significantly and would be of a level that will block back to, and potentially interfere with the operation of the Upper Parliament Street junction, and would therefore need to be mitigated.

DTPC Response – Will review as necessary following rerun of Transyt models.

We note that in the PM 2015 with-development scenario it appears the flow for the southbound movement on Great George Street has been set to 220pcus rather than 520pcus.

DTPC Response – Will review as necessary following rerun of Transyt models.

Linked to this, we would also suggest that the southbound movement on Great George Street (Link 22 in the TRANSYT models) should be modelled as two-links, as the lane allocation is different between the two southbound lanes. The nearside lane is marked for left turns, whilst the centre lane is ahead.

The flows on these two lanes are imbalanced with the majority of traffic travelling ahead. Modelling this as a single link in TRANSYT assumes the traffic could be evenly split between the two lanes which would not happen in practice. We suggest that this link be re-coded accordingly. Also on this link (link 22) we note that the saturation flows remain unchanged between the with-scheme and without-scheme models. The scheme proposes to introduce an on-street cycle lane which would change the lane widths at the junction. This change in effective lane width should be represented in the model.

DTPC Response – Will review as necessary following rerun of Transyt model however it should be noted that Link 22 and how it is modelled reflects a previously accepted model for these signals.

It is not clear from the TRANSYT outputs how the proposed controlled pedestrian crossings at the junction of St James' Street with St George Street will operate. No information has been included to show the proposed staging and from the positioning of the crossings it appears that an all-red pedestrian stage may be required. Having reviewed the proposed model it appears that the stage sequence mirrors that of the existing model (albeit with slightly modified timings) and no allowance appears to have been made for the crossings. Confirmation of the proposed stage sequence should be provided. This is a key issue for this junction, as the impact of the introduction of controlled crossings on this key gateway to the city centre needs to be clearly understood.

DTPC Response – The propose controlled pedestrian link at the Great George Street / St James street junction has been requested by the highway Authority. The Transyt model submitted did not include this controlled pedestrian link however as part of any re run a sensitivity check will be undertaken to demonstrate the impact to the HA. It is anticipated that the crossings will affect the capacity but the need is seen as greater for pedestrian safety.

Also of concern is the predicted increase in the DoS of key movements at the Upper Parliament Street junction. In the with-development results, two movements are predicted to operate just below the 100% threshold, whilst in the without-scheme assessment these links operate with ample spare capacity.

Linked to this we note that the results shown in the 'Robust' and 'Realistic' results for the 2015 with-development scenario differ significantly between the two scenarios. However, the traffic flows in the respective figures show identical flows between the two scenarios. The reason for this should be confirmed given the significance of these high DoS results.

DTPC Response – Will review as necessary following rerun of Transyt models.

Appendix B sets out a detailed review of the link road assessment and Appendix C the detailed wider junction assessments.

These are full reply to the concerns raised and show the network can accommodate the development as proposed with acceptable impacts on the network.

