



TECHNICAL NOTE

DATE:	21 October 2024	CONFIDENTIALITY:	Restricted
SUBJECT:	Technical Note Supporting AIA (October 2024)		
PROJECT:	LUF2 Project 2: Transforming Movement and Public Spaces in Shrewsbury	AUTHOR:	L Menendez Gonzalez
CHECKED:	S Hughes	APPROVED:	G Dymond

INTRODUCTION

This Technical Note accompanies the Arboricultural Impact Assessment (AIA) Report dated October 2024 and evaluates the new junction arrangement for the LUF2 Project 2 – Transforming Movement and Public Spaces project ('LUF2'), in Shrewsbury.

Shropshire Council commissioned WSP to undertake an on-site survey of the existing impacted trees, and an Arboricultural Impact Assessment (AIA) Report has been prepared, evaluating the current condition of the trees and proposing mitigation measures for the retained trees during the demolition and construction phases of the project.

BACKGROUND

The LUF2 project, is funded by the Government's Levelling Up Fund (LUF) round 2. managed by Ministry of Housing, Communities and Local Government (MHCLG) – formally known as DLUHC. Funding for this project was awarded in January 2023 to Shropshire Council, with this project being one of two awarded funding in Shrewsbury. This project, also known in the funding application and bid as "Project 2", aims to tackle traffic levels and air pollution levels in the gyratory outside Shrewsbury Train Station.

Further information on the original bid and allocated funding can be found in the following links below:

- <https://www.shropshire.gov.uk/shropshire-council/shrewsbury-levelling-up-funding-bid/>
- https://www.shropshire.gov.uk/media/25486/luf20312-application-data-shrewsbury-for-web_redacted-march23.pdf

The LUF2 project introduces a range of associated transport, active travel and public realm interventions near to the town's railway station. This includes a number of changes and improvements within the station quarter and existing gyratory, including a dedicated 2-way cycle lane in Castle Foregate (adjacent to the station), footway widening in Cross Street, including the removal of one (carriageway) lane in Cross Street, two-way traffic in Chester Street and a junction realignment at the Smithfield Road / Chester Street junction.

The necessary improvements (including carriageway widening) at the Smithfield Road / Chester Street junction, to facilitate the deliverables of the project, has the most significant impact on the existing trees. This note summarises the design considerations which have informed the new junction layout and the impact on the trees.

The existing trees have been labelled **T1** to **T5** on the AIA report and have therefore been referred to as that within this Technical Note. Trees **T1** to **T3** are located within the footway immediately outside of **H2O**, on the

West side of Chester Street. Trees **T4** and **T5** are located within the footway outside of *Castle Pointe*, on the East side of Chester Street.

The aerial photograph below shows the existing tree reference as per the above and also highlights the area of works referenced as Smithfield Road / Chester Street junction.



Image 1 – Aerial Photo showing location of existing trees.

PROPOSALS

The Smithfield Road / Chester Street junction realignment includes the removal of one of the existing kerbed pedestrian refuge islands on Smithfield Road, the adjustment of the existing splitter island / pedestrian refuge and the widening of the junction carriageway overall. All of which are necessary to accommodate the vehicle turning movements from Smithfield Road on to Chester Street and the proposed signalised junction, with controlled pedestrian crossing points and the retainment of the loading bay outside *Castle Pointe*.

The proposed kerb line realignment outside *H2O* involves narrowing of the footway in order to accommodate rigid vehicles, such as buses, traversing the turn without forcing them into conflict with vehicles travelling in the opposite direction in the adjacent lane.

The highways realignment design has been validated through the use of swept path analysis in AutoCAD. Swept path analysis on 12m rigid buses has been undertaken for design validation purposes, as this is considered the most common and restrictive vehicle that will regularly utilise the junction.

The extract below, Image 2, shows that when two 12m long vehicles pass each other at Chester Street, there is sufficient and safe clearance to allow the vehicles to safely negotiate the turning at this junction.

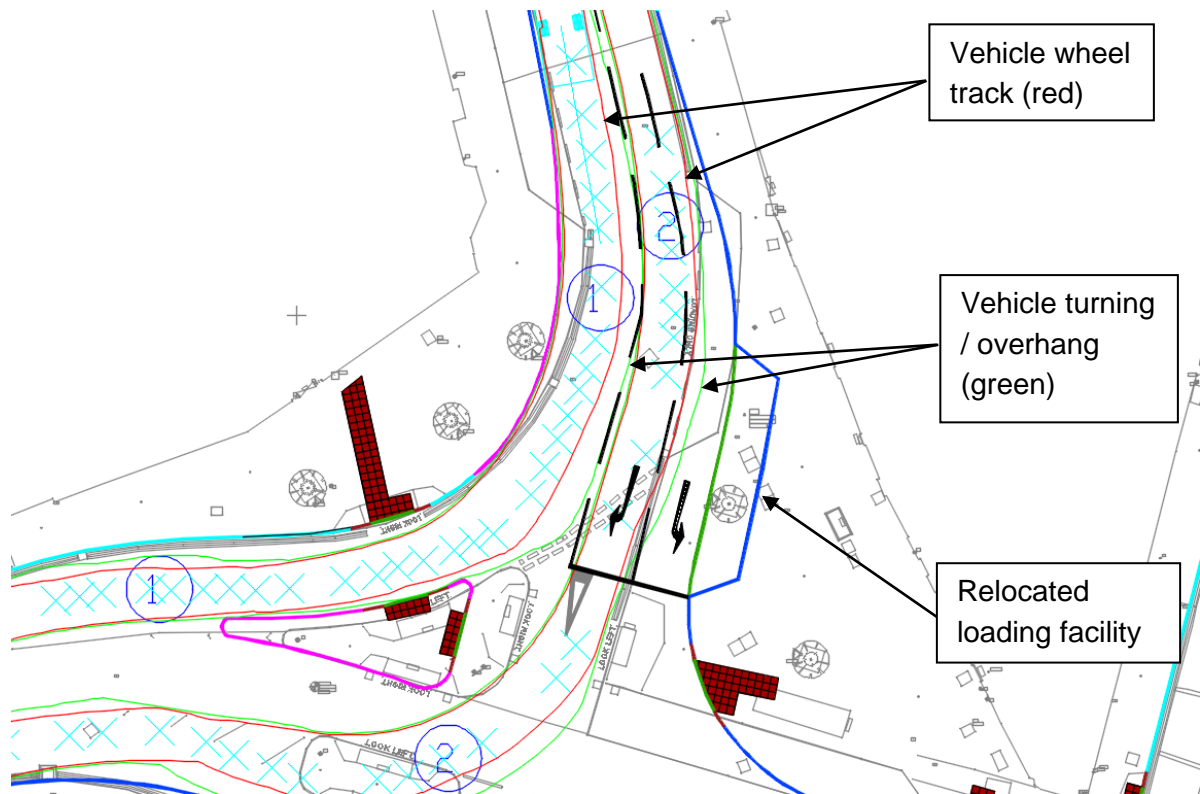


Image 2 – Swept Path Analysis

The kerb realignment outside *H2O* allows for the kerb line to be located outside the Root Protection Area for trees **T1** and **T2**, allowing them to be retained within the new junction layout. The new controlled pedestrian crossing has also been relocated further east to ensure clearance from **T1** and **T2**'s Root Protection Area and Indicative Crown Spread Area (refer to Image 3). However, swept paths indicate that the realignment must encroach on the Root Protection Area and canopy of **T3**, so that rigid vehicles will not come into conflict when using the junction. This means that **T3** will require removal to allow safe operation of the junction.

Considering **T4** and **T5**, the area outside *Castle Pointe* requires the approach to the Smithfield Road / Chester Street (southbound) junction to facilitate two lanes of traffic, in order to accommodate the number of vehicles travelling southbound from Coton Hill. To create two lanes approaching the junction, the existing kerb line needs to be moved eastward. The new kerb line is determined through swept path analysis, traffic modelling, highway design standards and safety considerations.

The new kerb line would be too close to **T4**, risking vehicle impact on the trunk and canopy, and encroach into the tree's Root Protection Area (refer to Image 3). UK highway design standards require at least 450mm set back from the edge of the carriageway to any fixed obstruction, which should be increased to 600mm where there is a severe camber. These minimum requirements would not be achieved if the tree were retained.

The proposal also requires that the existing loading facilities are maintained at this location, with high-demand expected by local businesses and residents (loading only). Additionally, safe parking for statutory maintenance vehicles, supporting highway maintenance functions, are also required in close proximity to the junction. These requirements have led to relocating the existing loading facility as shown in Image 2. The location and dimensions of the loading bay cannot be adjusted in order to retain the existing tree **T4**. Additionally, there are pedestrian and utilities constraints at this location which further restrict design options.

The proximity of **T4** to the proposed kerb line and the necessity to maintain a loading facility mean that the tree cannot be safely retained.

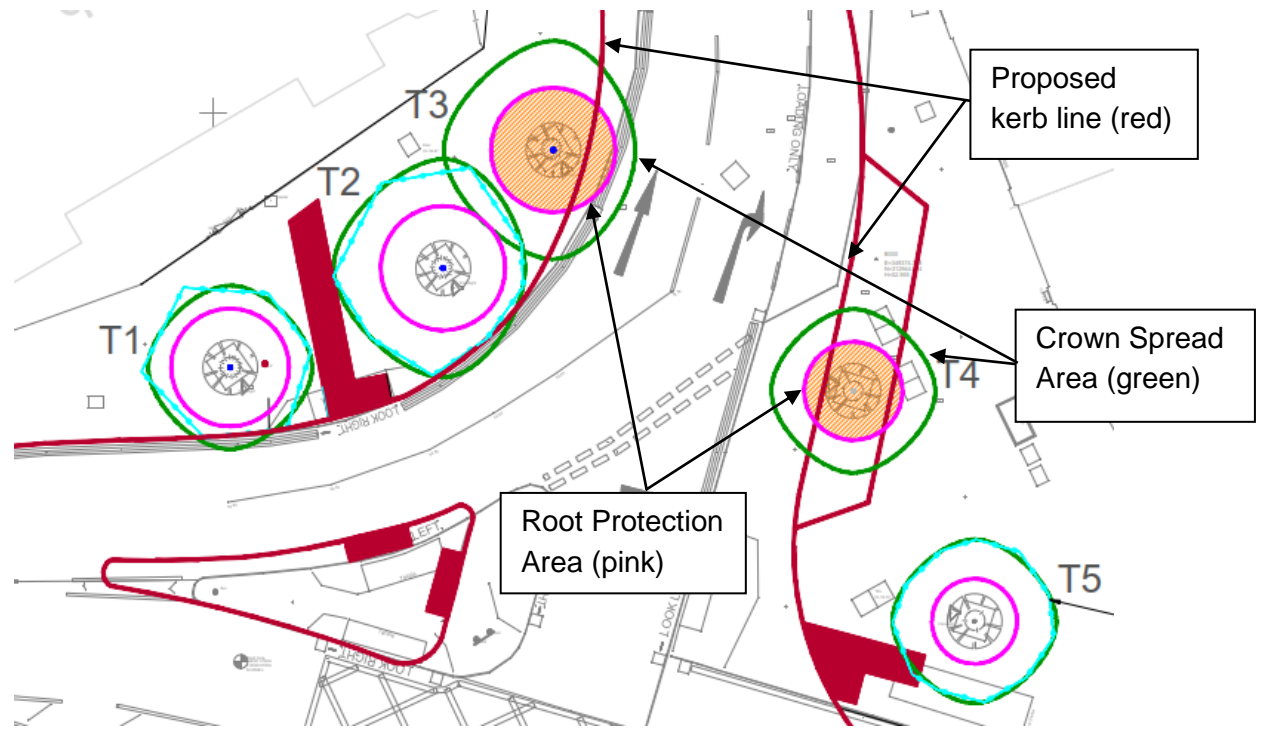


Image 3 – Extract from AIA showing Proposed Kerbing and Root Protection Areas

SUMMARY

The Smithfield Road / Chester Street junction redesign is required to achieve Shropshire Council's objectives for the LUF2 Project 2 scheme. The new junction arrangement is influenced by a number of constraints which results in the existing trees being impacted. Efforts have been made to retain the trees and mitigate the impact on trees during the works. As a result, trees **T1** and **T2** within the footway outside *H2O* and **T5** outside *Castle Pointe* can be retained within the new layout.

Critical factors within the new junction layout mean that **T3** and **T4** cannot be retained without undermining key objectives of the scheme and the outcomes of the original funding allocation.