



CHICHESTER CITY CENTRE PAVEMENTS

Options Study on Maintenance and Replacement

March 2021



Site Location

CONTENTS

01 EXECUTIVE SUMMARY	4
02 INTRODUCTION	5
03 STAGE 1 REVIEW MAIN OUTCOMES	9
04 STAGE 2 WORK PLAN	11
05 CITY CENTRE MAPPING PROCESS	12
06 RATIONALISATION OF REPAIR & REINSTATEMENT	21
07 POTENTIAL APPROACHES TO PAVEMENTS	27
08 MATERIALS OPTIONS	31
09 STAKEHOLDER ENGAGEMENT AND FEEDBACK	36
10 CONCLUSIONS & NEXT STEPS	37

APPENDIX A - STAGE 1 TECHNICAL NOTE

APPENDIX B - STAKEHOLDER PRESENTATION
21ST JANUARY 2021

APPENDIX C - STAKEHOLDER PRESENTATION
COMMENTS AND NOTES 21ST JANUARY 2021



QUALITY CONTROL

Issue/revision	First Issue	Revision 1	Revision 2	Revision 3
Date	31st March 2021			
Prepared by	<i>Stephen Reed, Donna James, Joe Harries, Heather Hawkey</i>			
Signature				
Checked by	<i>Stephen Reed</i>			
Signature				
Authorised by	<i>Alan Cowan</i>			
Signature				
Project number	70072166			
Report Number	70072166/STAGE3 REPORT			

1.1.1 Following an increasing number of complaints about the condition of the city centre pavements and an increase in trips and slips WSCC have appointed WSP to undertake this initial study to understand, map and communicate the issues, constraints and opportunities associated with the area.

1.1.2 In order to understand the context and inform potential solutions to the maintenance issues, we have undertaken visual surveys, reviewed the planning and strategic context, and interrogated data on maintenance and repairs

1.1.3 Reviewed documents included;

- Chichester Local Plan
- Chichester Character Appraisal
- Chichester ‘Character Appraisal Review’
- Chichester ‘Historic Environment Strategy and Action Plan’ review
- Chichester City Centre Public Realm and accessibility enhancement strategy (BDP, 2005)

1.1.4 Building upon this contextual understanding WSP has led a series of informal and formal engagements with WSCC and CDC officers, local councillors and in-house experts to build up an understanding of practical and perceptual issues around the existing streetscape conditions, as well as capturing ideas and aspirations for how best to drive forward the right solutions. This progressed to inform the high level strategies and outline solution options contained within this report.

1.1.5 Through undertaking this process, it has become apparent that the City Centre Pavements Study is one on many parallel projects under development within the district, and there is a significant number of complimentary and competing opportunities in the immediate vicinity which will undoubtable have a bearing on ultimate design solutions. There is also the wider corporate objectives that can be weaved into the scheme to provide a multitude of added value that will enhance the social, cultural, environmental and economic case for renewal.

1.1.6 However, the aim of this options study was twofold;

- Firstly, to seek to understand the reasons for the pavement failures within the ‘pedestrianised’ retail centre primarily comprising North Street and East Street, with the Market Cross as the cultural ‘hinge’ that connects these streets together and to the adjacent assets of West Street and South Street.
- Secondly, to draw some conclusion to inform high level costed interventions that can act as a tool to focus attention and a guide to secure appropriate funding for the potential solutions

1.1.7 The next steps will involve firming up these conclusions through detailed visual, intrusive and non-intrusive surveys, further engagement and collaboration to ensure that proposals integrate with wider strategies and ambitions. We have demonstrated, within this study, that there are

significant issues with unmanaged vehicle movements over areas of a pavement likely to have only been designed and constructed to take pedestrian loadings. The pavements themselves were installed in the 70’s, and consequently near the end of their design life.

1.1.8 Beyond the technical issues associated with legacy construction and quality of repairs, this scheme presents a great opportunity to enhance the user experience, commercial opportunities, historic environment, cultural offer and improve the environmental benefits of the city centre. Careful stewardship will be required to ensure that the right solutions are applied that will stand the test of time in a rapidly evolving context.

2.1 PROJECT OVERVIEW

2.1.1 WSCC approached WSP to assess and evaluate the potential interventions which could be undertaken to assist in the maintenance of the highway and footway pavements on the key pedestrian and access streets in the City Centre of Chichester. The streets in questions are highlighted in Figure 2.1 (on the right):

2.1.2 The original road and footways on East Street and North Street are depicted in two photographs dating from the late 1960's and early 1970's (one of East Street and one of North Street) shown over the page prior to the current pavement installation.

2.1.3 Conversion of the road and footway to a continuous paved area (what we would now term a "shared space") took place in the early 1970's (we could not establish an exact date of the works) and would appear to echo the general layout of the existing, in terms of "road" areas picked out in red pavers, footway areas picked out in Yorkstone and the area around the Chichester Cross (formally in the centre of a roundabout) in Purbeck Stone, with the addition of slot channel drains to replace road gullies. In the majority of areas, the existing kerbs were left in place to provide edge restraint to the road pavers and in some areas, such as North Street, the kerb edge appears to have been reshaped.

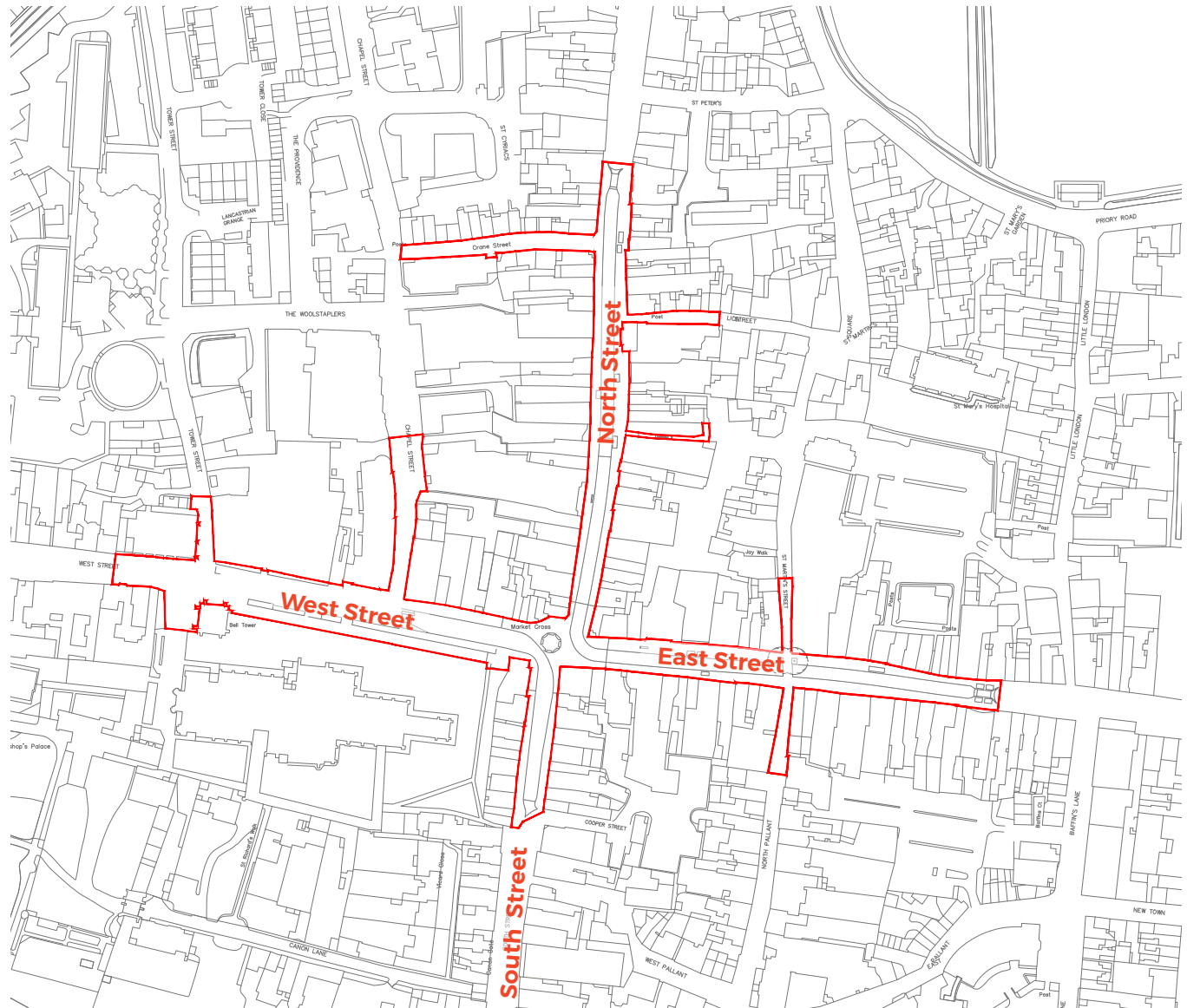
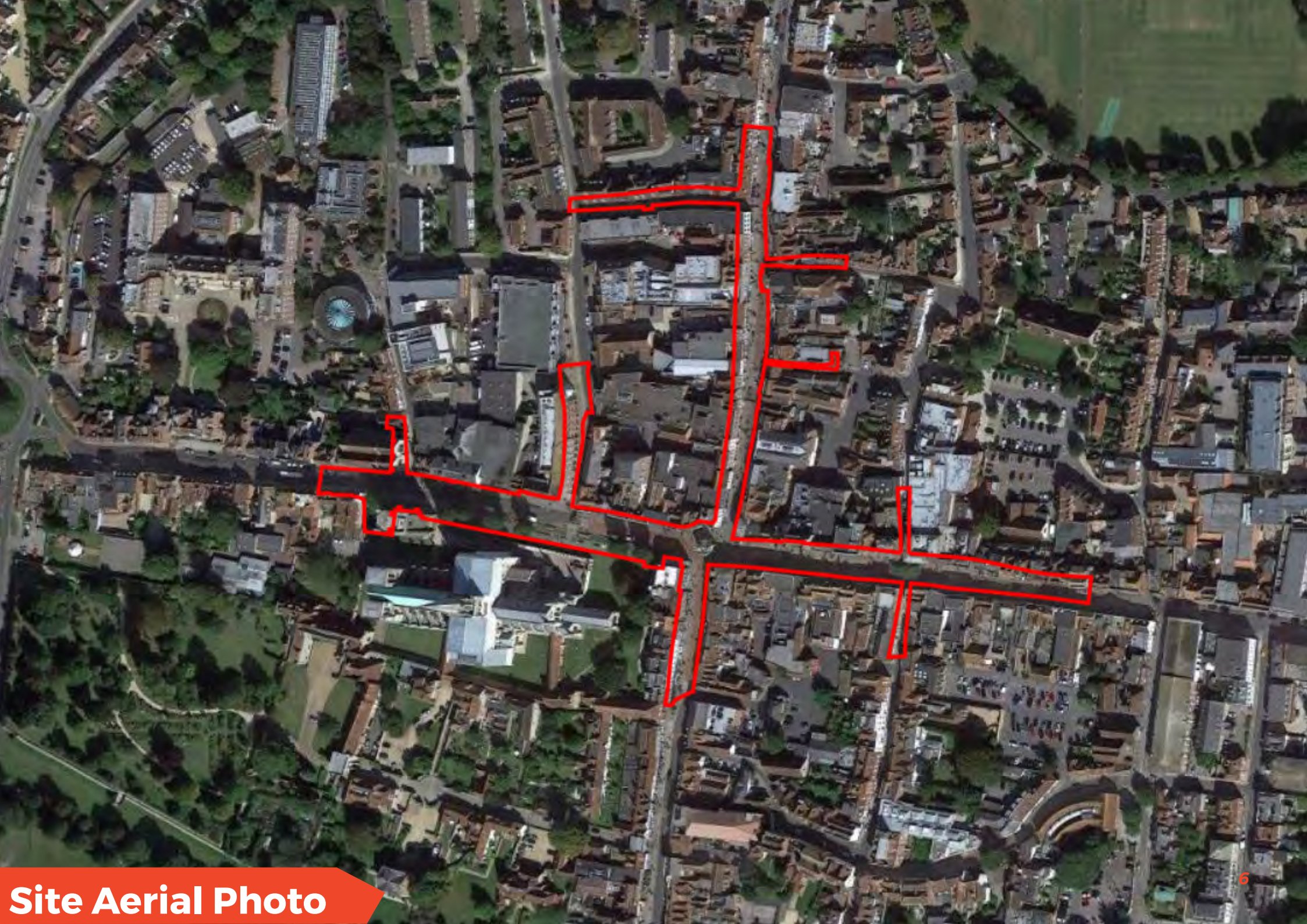


Figure 2.1 Chichester City Centre Pavements Study Agreed Study Area



Site Aerial Photo



Figure 2.2 East Street looking towards the Chichester Cross, circa late 1960's / early 1970's, note camber of road and the position of existing kerbs and footways



Figure 2.3 North Street looking towards Chichester Cross (just out of shot) circa 1970's, this photo would suggest that the road had been closed and works to the paving were shortly beginning, the camber on the road and position of existing kerbs and footways can be seen, bicycles can be seen in the distance (left-hand side behind the van) parked on the road.

2.1.4 In 2009, WSCC, working jointly with Chichester District Council (CDC) and Chichester City Council (CCC) jointly published, with Building Design Partnership (BDP), a review of the pavements, setting out the following in their Introduction:

“The existing palette of materials within the city ranges in quality and suitability. Yorkstone slabs are predominant within the pedestrian areas. These slabs along with the red clay block pavers, flush granite trims, granite kerbs and smaller areas of Purbeck have over time settled or been disturbed by utility companies. This has resulted in a surface with broken joints and potential trip hazards.

The Yorkstone slabs within the pedestrian areas range in size, shape and thickness. The stone was reclaimed when originally laid in the late 1970’s, early 1980’s. Over time the slabs have moved or been disturbed by utility companies resulting in the uneven surface, broken joints and potential trip hazards. The Yorkstone slabs themselves remain in good condition and are very attractive with an array of rich warm colours – their durability being a clear justification for the use of natural materials within the public realm.

It is seen as extremely important both from an aesthetic and environmental stance that this stone is reworked and reused within the city centre wherever possible. The slabs, as existing, are worn with slight undulations and some uneven edges. Sizes range from small modular units

around the Market Cross to larger random sized slabs laid in an irregular bond along the streets.”

2.1.5 A strategy was recommended, and the original executive summary is summarised below:

“The existing paving has been in place since the 1970s and whilst it has served its purpose well it is now showing increasing signs of wear and tear. It has been agreed that all future maintenance and improvements should comply with the new Masterplan including all features, such as street furniture and lighting that make up the public realm. In deciding which strategy to adopt it is necessary to look at the existing paving materials to assess the potential for reclamation and recycling.

Three strategy options were considered:

- Relay Yorkstone as originally laid*
- Replace existing stone with new*
- Replace one section of stone to pump-prime the reworking of existing stone for future phases.*

On balance the third option is recommended. One of the main advantages of this strategy is that it makes use of the existing stone whilst enabling a prompt start to the initial phase. It also enables the stone to be re-worked off-site minimizing local disruption.”

2.1.6 The recommendation, at the time, was to replace all the paving in Crane Street with a suitable alternative which would then provide a stockpile of Yorkstone material which would be

graded (for thickness) and reworked for a variety of rectangular size for reuse to replace / repave more critical areas in the other main streets.

2.1.7 The strategy at the time, recognised the importance of the heritage asset of the Chichester Cross (as an initial phase) and also the impacts of public transport access through South Street and West Street.

2.1.8 Circa late 90’s the red pavers on South / West Street underwent a major maintenance reconstruction scheme to reconstruct the pavement foundation and surfacing to the same levels / layout. With a few, more recent, maintenance interventions this is what is visible today.

3.1 INTRODUCTION

3.1.1 The first stage of the three-stage approach to the Options Appraisal agreed with WSCC Officers was the preparation of the Stage 1 Technical Note. The full report of which can be found in **Appendix A**. The Technical Note covers the initial / inception call / meeting, review notes, the agreed brief and approach, site walk over findings (COVID-19 RA), initial photos and problem identification, confirmation of issues and Officer calls / notes. It was combined with a conference call with WSCC to outline and agree the Stage 2 approach and initial feedback on the Stage 1 notes.

3.1.2 The inception meeting raised a number of key issues including an increasing number of complaints about the condition of the “Precinct” in terms of its maintenance condition and an increase in trips and slips reported. It was highlighted that a suitable materials palette should be sought for the Conservation area but with reduced maintenance as the main focus. Concerns were discussed over the increased loading and wear from “multi-use activity” of the areas through the City Centre Markets as well as OGV loading and occasional HGV delivery loading. Utilities are also deemed to be a key problem with new connections and emergencies overriding any protective clauses.

3.1.3 The bus route will remain a constraint and it was raised that retaining the “flexible” pavement in the bus areas (South Street and West Street) should be considered and that poor bus driver

behaviours, cutting the corner when turning from South Street into West Street and mounting the footway, was a major cause for concern.

3.2 CHARACTER AND SETTING FOR THE PROJECT

3.2.1 In order to understand the context and inform potential solutions to the maintenance issues, a desk study was carried out to review relevant documentation surrounding the heritage, public realm and planning policy, extracting the relevant elements from key planning, character and heritage assessments that need to be considered when deciding upon appropriate public realm treatments of the precinct area. This was for information gathering purposes only, and we have not sought to make any judgement or conclusions at this stage.

3.2.2 Of key interest is references to Conservation Areas within the Civic Amenities Act 1967 and Section 69 and 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990 obliges the creation of conservation areas.

3.2.3 Chichester’s Local Plan sets out the Vision for the sort of place that the District should be by 2029. Chapter 3 The Vision and Objectives sets out a Vision for the sort of place the plan area should be by 2029 and sets out a series of Objectives for realising this vision including conserving and enhancing the distinctive character, quality and importance of the historic environment.

3.2.4 The policies relating to the historic

environment, set out in Chapter 19, with key points from Policy 47 – Heritage and Design, are also of relevance to this study.

3.2.5 Chichester ‘Historic Environment Strategy and Action Plan’ has been drafted to support the Local Plan to inform the positive strategy for the Historic Environment as recommended by the NPPF. It applies to the Chichester District Local Plan area.

3.2.6 Reference has also been made to the ‘Chichester City Centre Public Realm and Accessibility Enhancement Strategy’ and the further publication in June 2008, in particular to the Materials and Technical Specification, Street Signage Specification and Street Furniture Specification. This document was produced by BDP following the commission by West Sussex County Council, Chichester District Council, and Chichester City Council in 2005 to produce a Masterplan for the enhancement of the Public Realm within the pedestrianised parts of central Chichester. Whilst there remains some merit to these documents, the subsequent development of policies, strategies and appraisals combined with the challenges of cost, maintenance and heritage indicate a more holistic and collaborative response may be required.

3.3 USAGE AND TRAFFICKING

3.3.1 Although the majority of the city centre is a pedestrianised zone, there are still significant amounts of heavy trafficking which is also not constrained to the carriageway and often crosses onto the footway areas. HGVs drive through since many of the businesses have deliveries on both North Street and East street. Chichester's markets are also a key consideration and it is understood that Chichester City Market normally occurs weekly and a Farmer's Market takes place twice a month, typically operating along North Street and East Street. The market traders' vehicles traffic the pedestrian areas (both the carriageway and footway) with rigid commercial vehicles, flatbed trucks and vans, all of which may be using tail lifts. Although these vehicles are not necessarily the most damaging types, their presence may be causing localised overloading, especially of the footways.

3.3.2 Across the study area it is understood that a number of fully loaded scaffold lorries have trafficked the Yorkstone footways which have caused damage. It is likely that the former footway areas are only designed for very occasional heavy vehicle overrun and therefore these vehicles should be excluded from them wherever possible.

3.3.3 As well as HGV delivery vehicles, refuse vehicles and light maintenance vans, South Street and West Street are frequented by around 30 buses per hour, including some double deckers.

The South Street/West Street link therefore carries significantly higher commercial vehicle traffic when compared to North Street/East Street.

3.4 WALKOVER SURVEY AND FINDINGS

3.4.1 A walkover survey was carried out as part of Stage 1 and the findings were covered in the Stage 1 Technical Note (**Appendix A**). Many issues were found and discussed which were associated with the quality, finish, robustness, maintenance and repairs.

3.4.2 Some of the more prevalent issues and significant in terms of impact on visual quality include: excessive or misplaced street clutter and advertising; the ineffectiveness of zonal restrictions and yellow lines; and slot drains becoming repeatedly blocked up and becoming a maintenance liability.

3.4.3 A key issue across the study area is that mortar joints are open and failing. Many of the Yorkstone slabs and Purbeck setts are cracked and damaged, likely through vehicle overrun. The mortar joints have plucked out and numerous slabs are then beginning to rock and move due to the lack of restraint. Missing mortar also allows the ingress of moisture causing wash out of the structural layers below the slabs. In some areas this has allowed vegetation growth and led to cracking of individual paviors. There have been some localised mortar repairs although they appear to be successful in retaining the paviors, some joints have been widened and the

different coloured mortars look unsightly. It can be seen that unsightly patch repairs have also been undertaken using asphalt in some areas. In addition, the market cross is a key heritage asset with a radiating Octagonal paving causing issues with cuts and maintenance. Contractors have clearly struggled to re-lay the stone correctly following repairs.

3.4.4 In relation to the heritage character of the study area it was emphasised that the clay / concrete paviors are not deemed appropriate for use within the heart of the conservation area. Gateways currently lack a sense of arrival to the historic centre. The Cathedral and Market Cross, although two fantastic heritage assets in close proximity to each other yet they do not feel connected at all. The street scene, materials choice and mature planting visually separate the two. The heritage status and importance of the cathedral is not reflected at all in the street scene; a real placemaking opportunity being missed.

3.4.5 The red paviors to South Street and West Street have a flexible type construction and although this construction type can be used for such higher trafficked areas, maintenance costs tend to be higher due to loss of jointing sand. There is no positive drainage below the paviors which allows the bedding sand to become saturated. However, the use of a standard block paviors in this, the most historic part of the city, is not appropriate and does not respect the curtilage of this heritage asset.

4.1 INTRODUCTION

4.1.1 Following the Stage 1 works, a brief was prepared for stage 2, with this being split into two sub-stages (2a and 2b).

4.1.2 The agreed approach was based around identifying areas by aesthetic importance / use and agreeing what an appropriate finish and programme will be to resolve the issues identified in stage 1.

4.1.3 The team prepared mapping / location-based solution that says what should go where, with what level of spec, with this being GIS based.

4.1.4 At stage 2b, the team sought to sense check and agree (with stakeholders) findings of the research and establish a view/comment on workmanship specs and material options for each area based around the proposed hierarchy of spaces recommended stage 2a.

4.1.5 We also see us providing a staged approached plan.

Stage 2a

Protection to Pavements

- Why (how do we keep vehicles off the Yorkstone footways)?
- Potential approaches
- Appropriate / Robust Street furniture
- Review cleaning procedures with CDC

Rationalisation of Repair & Reinstatement

- Guidance review (existing)
- Process / Standards / Specs
- Heritage additional interventions
- High Quality Historic Environment “Local Reinstatement Guidance”
- Specification of the Reinstatement of Openings in Highways (SROH) Lever (Evidence for Intervention)

Mapping Exercise

- Spatial framework (gateways / thresholds / routes / connections)
- Heritage & Character (Key Asset Location)
- Trafficking (pedestrian & vehicular)
- Uses / ownership
- Slips / trips / claim key locations (Evidence from Legal team – if available)
- Produce overlays to get prioritisation – graphical representation
- “Quality Hierarchy” – Heritage, High, Moderate, Utility areas (or primary, secondary, tertiary, quaternary)

Potential Approaches to Pavements

- Potential / Indicative “Palette of Materials” for hierarchy categories
- Structural Options – Rigid / Flexible, Slabs / Small Element – Pro’s and Con’s

Stage 2b

This was an opportunity to present the finding from stages 1 and 2a to local stakeholders outlining the work undertaken to date and to have an open discussion on the findings and potential interventions and for the WSP to sense check its investigations, research and interventions with stakeholders. This took the form of:

- Presentation of mapping, findings and draft interventions
- Estimates of costs for various interventions with Pro’s and Con’s
- Question and Answer session on approaches

Deliverables for Stage 2

The suggested deliverables were:

- Mapping Plans / drawings
- Presentation Materials
- Captured Notes from Presentation / Workshop.

The items set out in section 2a have been slightly re-ordered in this report to make them fit a more logical approach.

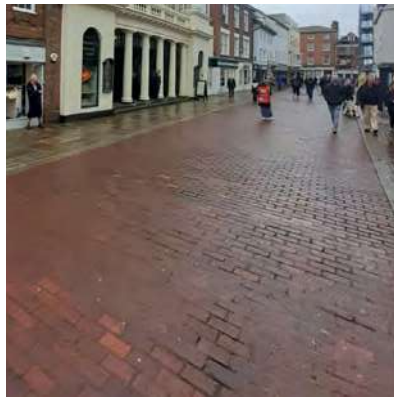
The latest stakeholder presentation and a record of comments made are included in **Appendix B & C**.

5.1 EXISTING HARD LANDSCAPE MATERIALS ACROSS THE STUDY AREA

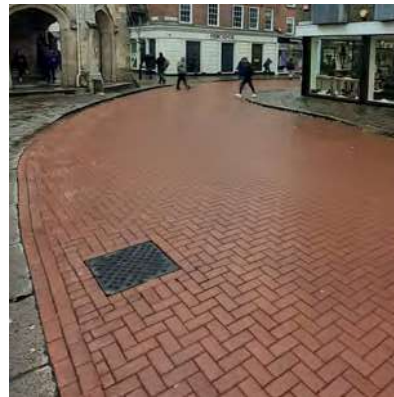
5.1.1 The wide variety of paving materials in Figure 5.1 used across the study area leads to issues in replacements when faults arise.



Yorkstone slabs to majority of footways



Red pavers to North St & East St carriageways



Red pavers laid herringbone to bus route



Purbeck setts around Market Cross



Blue granite setts to gateways to pedestrian zones



Buff pavers to gateways to pedestrian zones



Trial panel on North St



Tumbled light grey granite setts to furniture areas



Concrete slabs & asphalt to West Street



Concrete slabs around the cathedral grounds

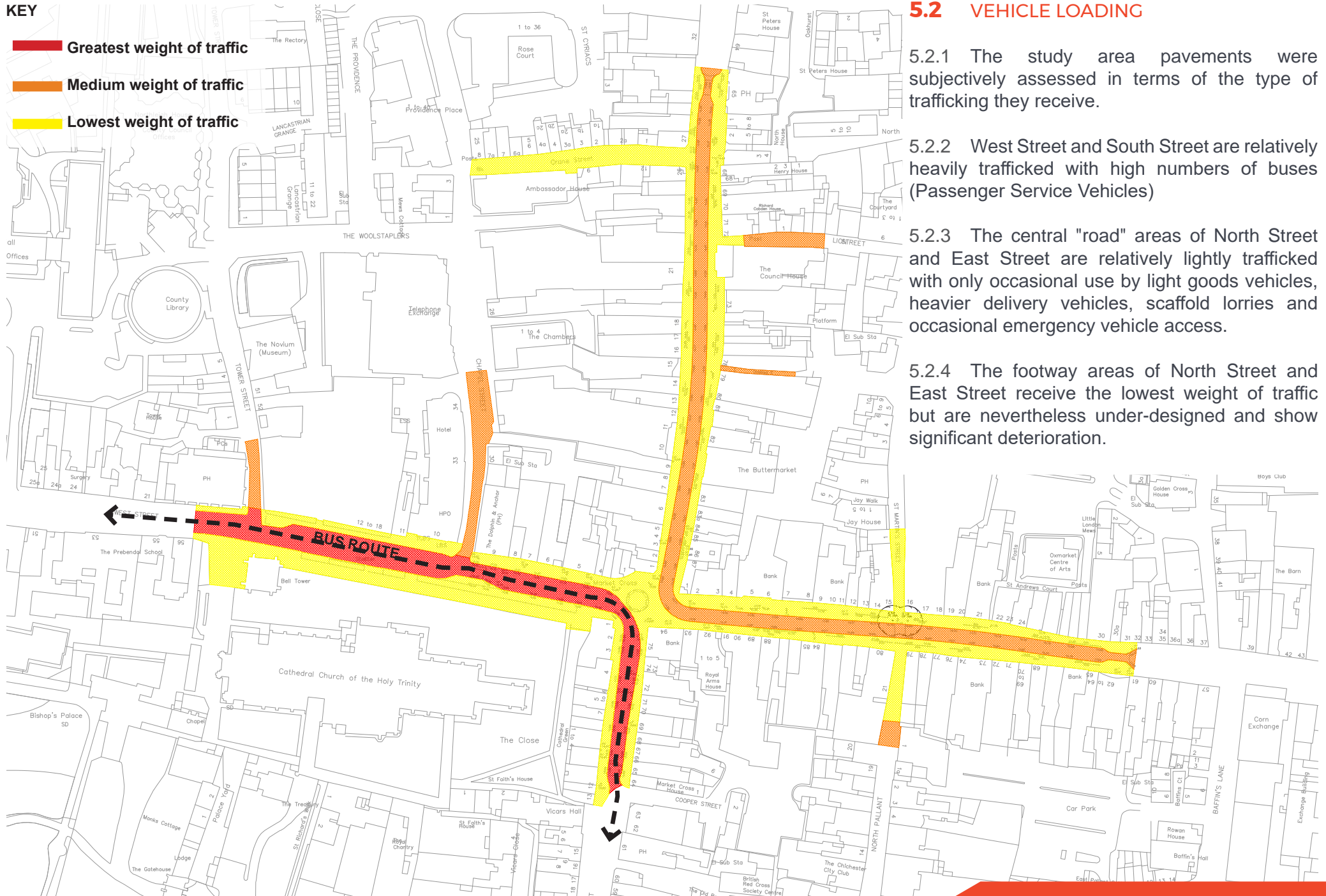
Figure 5.1 Images of Chichester's existing paving types

KEY

 Greatest weight of traffic

 Medium weight of traffic

 Lowest weight of traffic



5.2 VEHICLE LOADING

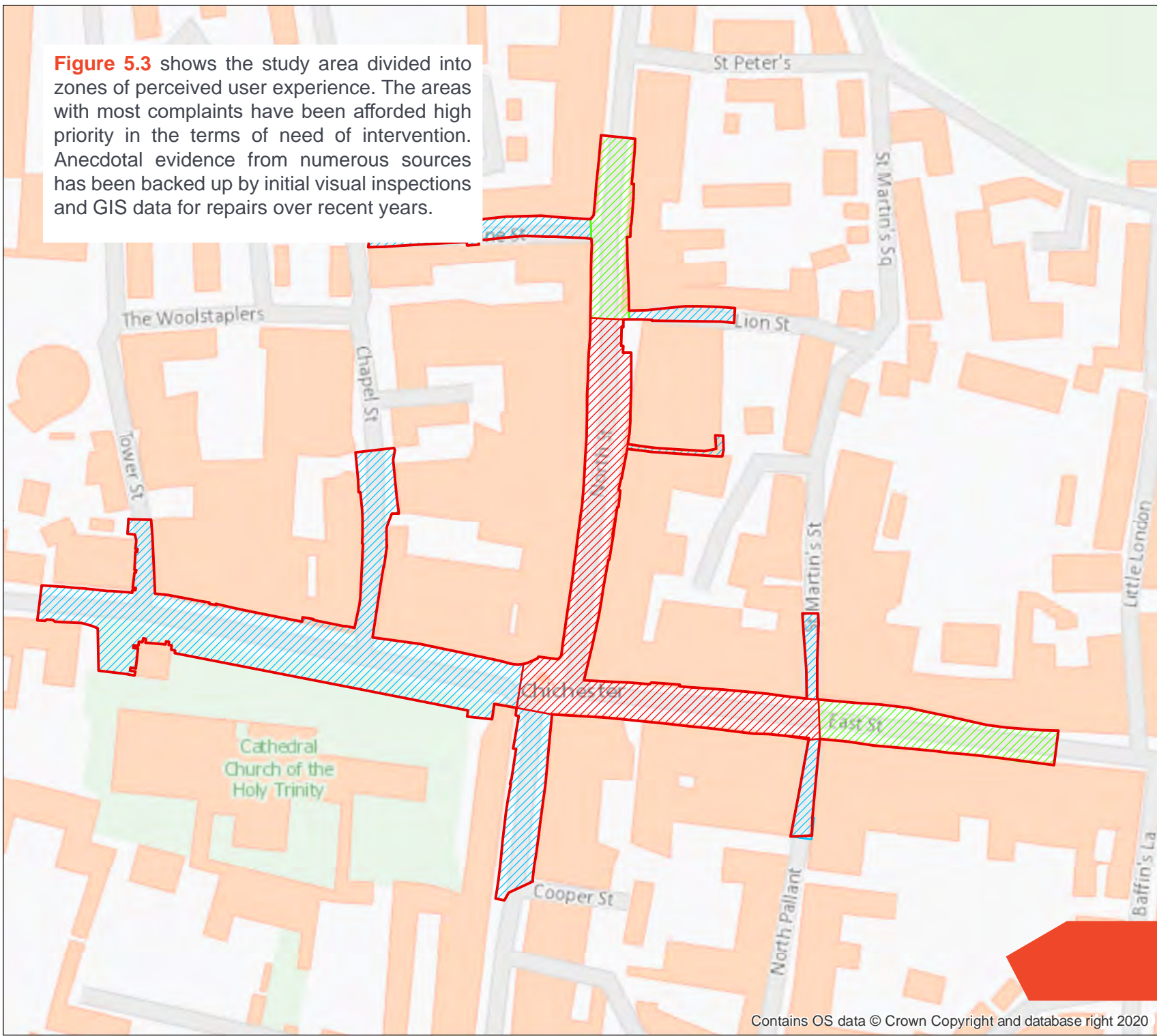
5.2.1 The study area pavements were subjectively assessed in terms of the type of trafficking they receive.

5.2.2 West Street and South Street are relatively heavily trafficked with high numbers of buses (Passenger Service Vehicles)

5.2.3 The central "road" areas of North Street and East Street are relatively lightly trafficked with only occasional use by light goods vehicles, heavier delivery vehicles, scaffold lorries and occasional emergency vehicle access.

5.2.4 The footway areas of North Street and East Street receive the lowest weight of traffic but are nevertheless under-designed and show significant deterioration.

Figure 5.3 shows the study area divided into zones of perceived user experience. The areas with most complaints have been afforded high priority in the terms of need of intervention. Anecdotal evidence from numerous sources has been backed up by initial visual inspections and GIS data for repairs over recent years.



DO NOT SCALE

Information Classification:
PUBLIC
 Information that is available to the general public and is intended for distribution outside WSP.

Key

- Study Boundary
- User Experience (Primary Priority)
- User Experience (Secondary Priority)
- User Experience (Tertiary Priority)

DRAWING STATUS: **STAGE 3 REPORT**



Kings Orchard, 1 Queen St, Bristol, BS2 0HQ, UK
 T +44 (0) 117 930 2077
 wsp.com

CLIENT: West Sussex County Council

ARCHITECT: N/A

PROJECT: **CHICHESTER CITY CENTRE PAVEMENTS**

TITLE: **CURRENT USER EXPERIENCE HIERARCHY**

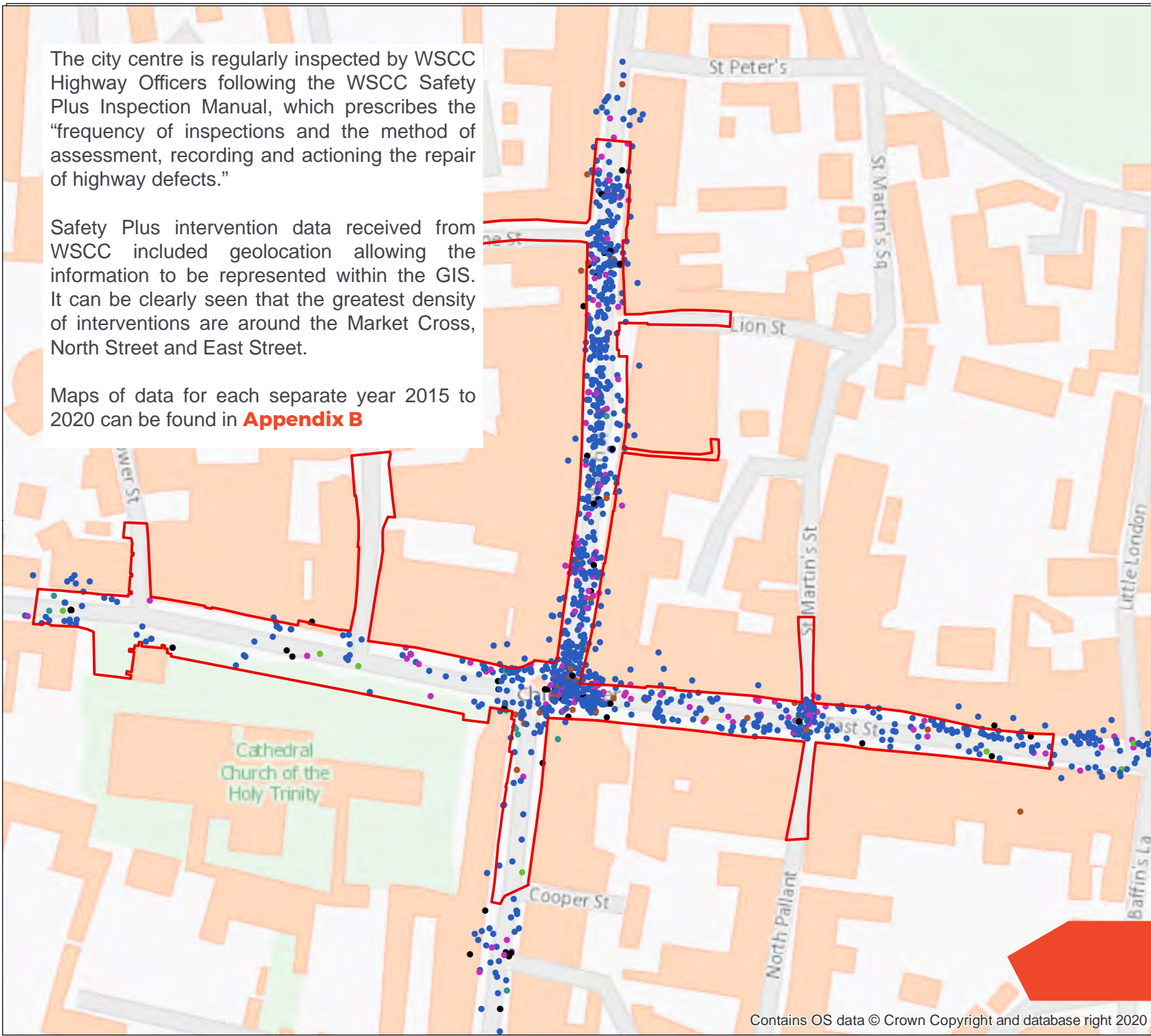
SCALE @ A4: 1:2,000	CHECKED: J HARRIES	APPROVED: J HARRIES
------------------------	-----------------------	------------------------

FIGURE 5.3

The city centre is regularly inspected by WSCC Highway Officers following the WSCC Safety Plus Inspection Manual, which prescribes the “frequency of inspections and the method of assessment, recording and actioning the repair of highway defects.”

Safety Plus intervention data received from WSCC included geolocation allowing the information to be represented within the GIS. It can be clearly seen that the greatest density of interventions are around the Market Cross, North Street and East Street.

Maps of data for each separate year 2015 to 2020 can be found in **Appendix B**



DO NOT SCALE

Information Classification:
PUBLIC
 Information that is available to the general public and is intended for distribution outside WSP.

Key

Study Boundary

Date Recorded

- 2015
- 2016
- 2017
- 2018
- 2019
- 2020

DRAWING STATUS: **STAGE 3 REPORT**



Kings Orchard, 1 Queen St, Bristol, BS2 0HQ, UK
 T +44 (0) 117 930 2077
 wsp.com

CLIENT: West Sussex County Council

ARCHITECT: N/A

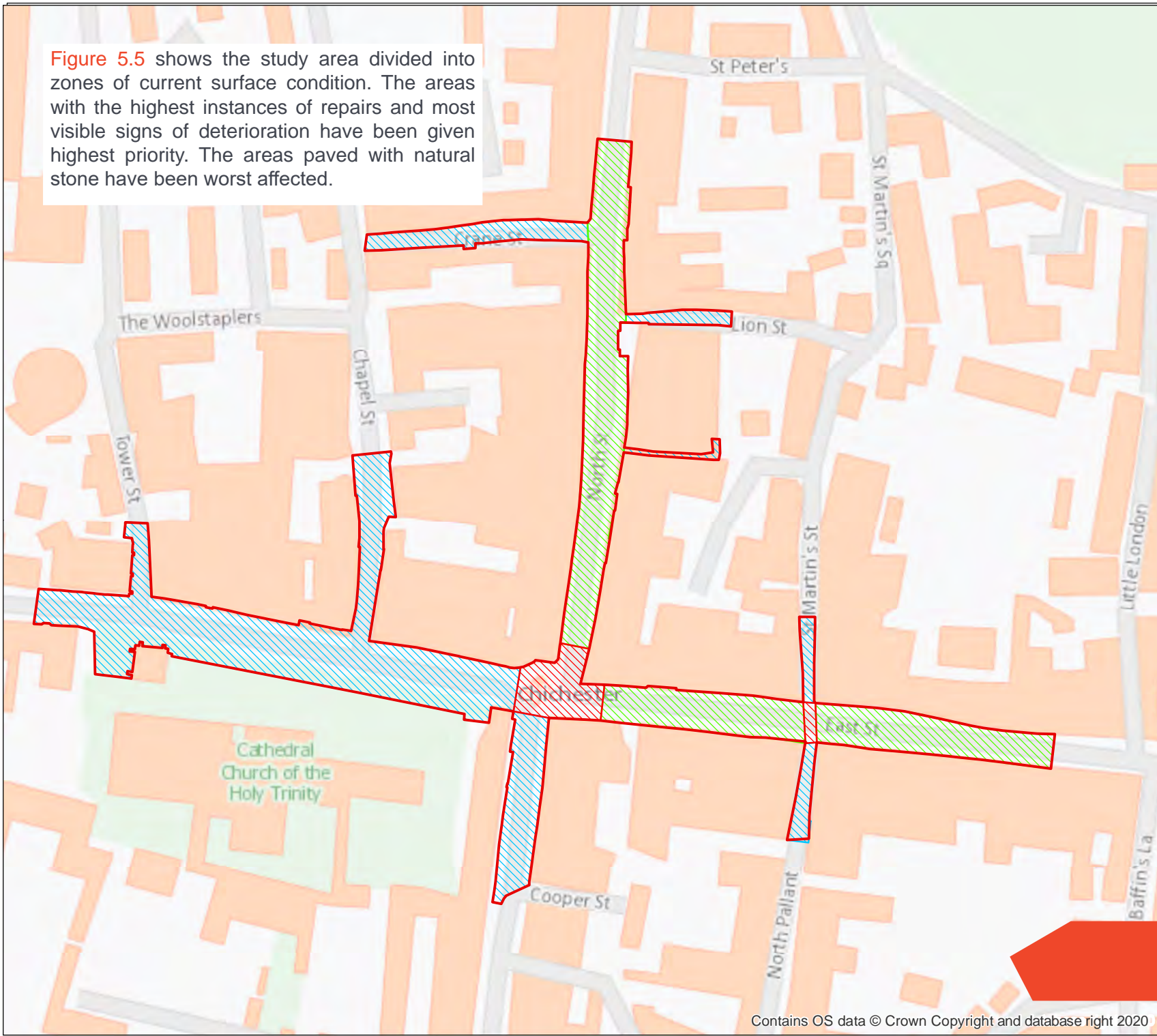
PROJECT: **CHICHESTER CITY CENTRE PAVEMENTS**

TITLE: **SAFETY PLUS DEFECTS - ALL YEARS**

SCALE & AH: 1:2,000	CHECKED: J HARRIES	APPROVED: J HARRIES
---------------------	--------------------	---------------------

FIGURE 5.4

Figure 5.5 shows the study area divided into zones of current surface condition. The areas with the highest instances of repairs and most visible signs of deterioration have been given highest priority. The areas paved with natural stone have been worst affected.



DO NOT SCALE

Information Classification:

PUBLIC

Information that is available to the general public and is intended for distribution outside WSP.

Key

- Study Boundary
- Existing Paving Condition (Primary Priority)
- Existing Paving Condition (Secondary Priority)
- Existing Paving Condition (Tertiary Priority)

DRAWING STATUS: **STAGE 3 REPORT**



Kings Orchard, 1 Queen St, Bristol, BS2 0HQ, UK
T +44 (0) 117 930 2077
wsp.com

CLIENT: West Sussex County Council

ARCHITECT: N/A

PROJECT: **CHICHESTER CITY CENTRE PAVEMENTS**

TITLE: **EXISTING PAVING CONDITION HIERARCHY**

SCALE @ A4: 1:2,000	CHECKED: J HARRIES	APPROVED: J HARRIES
------------------------	-----------------------	------------------------

FIGURE 5.5

5.6 KEY HERITAGE ASSETS

5.6.1 The entire study area sits within the Chichester Conservation Area with the majority of buildings having attractive historic features & heritage value.

5.6.2 The hard landscaping around the city centre should seek to benefit the city's heritage features and to promote them.

5.6.3 Of utmost priority should be to improve & maximise the setting around the Cathedral & Market Cross. Areas around other key heritage buildings such as The Bell Tower, St Olav's Church, The Council House & The Buttermarket should then follow.



CHICHESTER CATHEDRAL



MARKET CROSS



THE COUNCIL HOUSE



THE BELL TOWER



THE BUTTERMARKE



ST OLAV'S CHURCH

Figure 5.6 Images of Chichester's key city centre heritage assets

KEY



Priority heritage assets

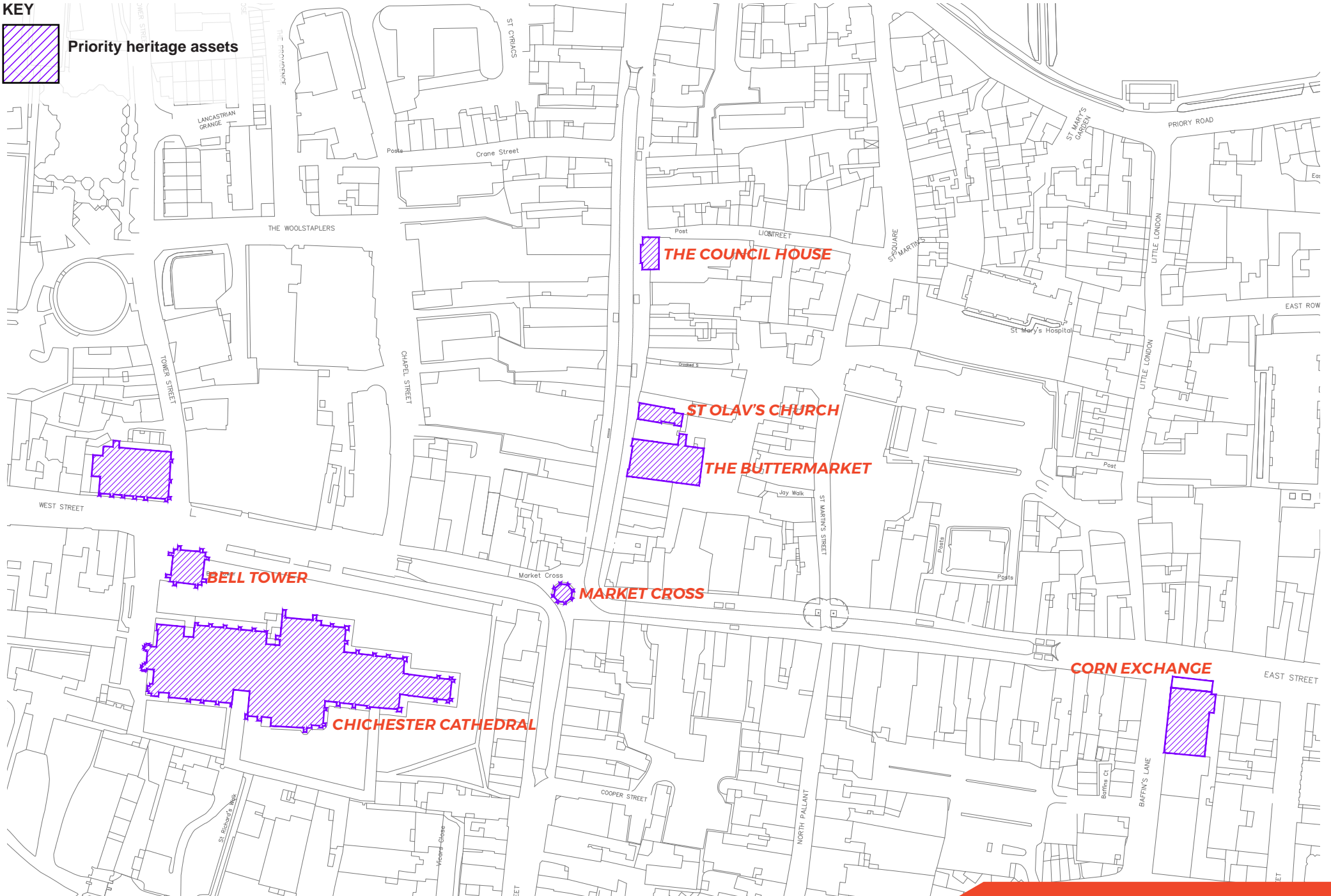
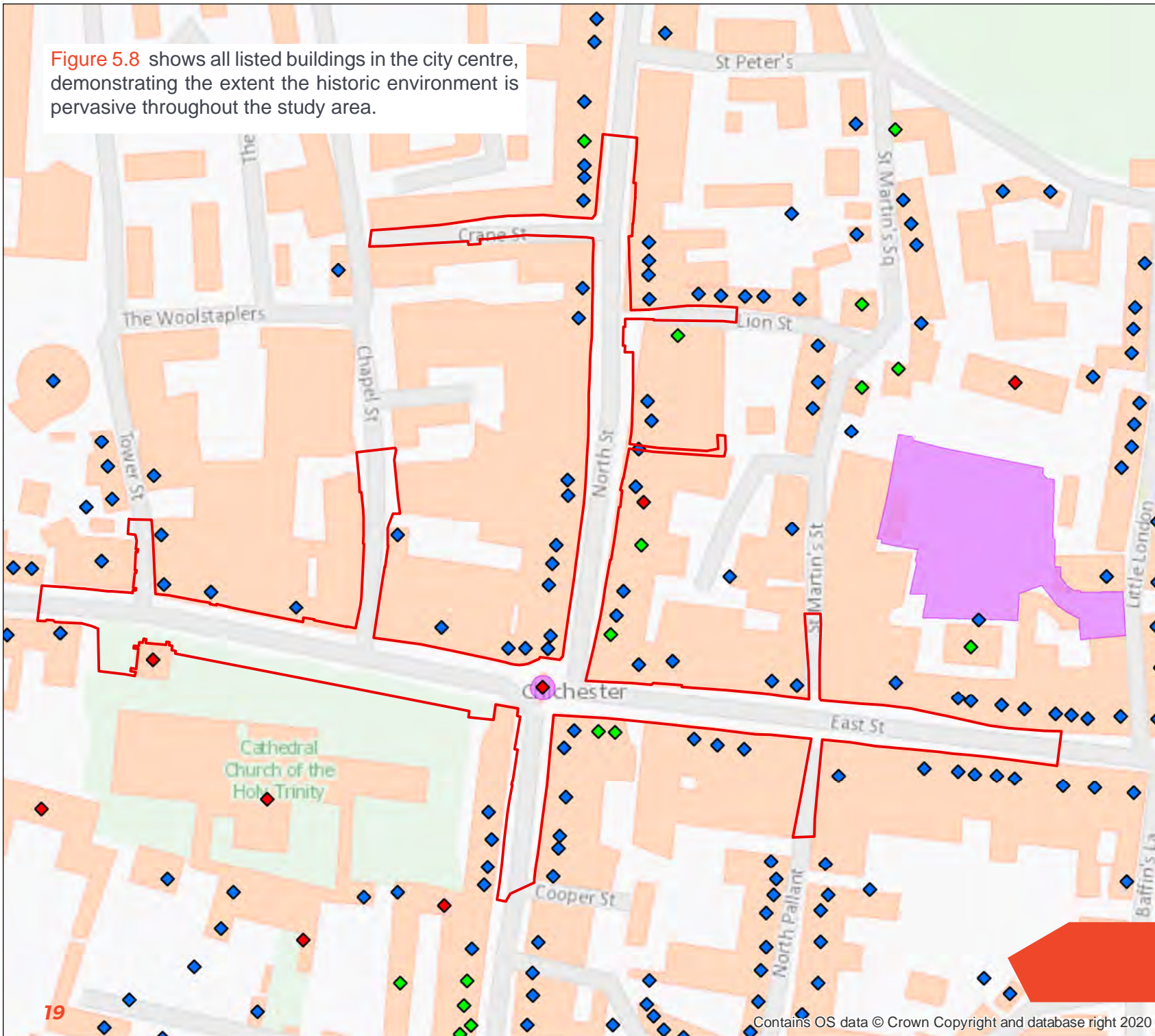


FIGURE 5.7

Figure 5.8 shows all listed buildings in the city centre, demonstrating the extent the historic environment is pervasive throughout the study area.



DO NOT SCALE

Information Classification:

PUBLIC

Information that is available to the general public and is intended for distribution outside WSP.

Key

Study Boundary

Listed Buildings (Within 5km of Site Boundary)

Grade

I

II

II*

Scheduled Monuments (Within 5km of Site Boundary)

DRAWING STATUS:

STAGE 3 REPORT



Kings Orchard, 1 Queen St, Bristol, BS2 0HQ, UK
T +44 (0) 117 930 2077
wsp.com

CLIENT:

West Sussex County Council

ARCHITECT:

N/A

PROJECT:

CHICHESTER CITY CENTRE PAVEMENTS

TITLE:

HERITAGE ASSETS

SCALE @ A4:

1:2,000

CHECKED:

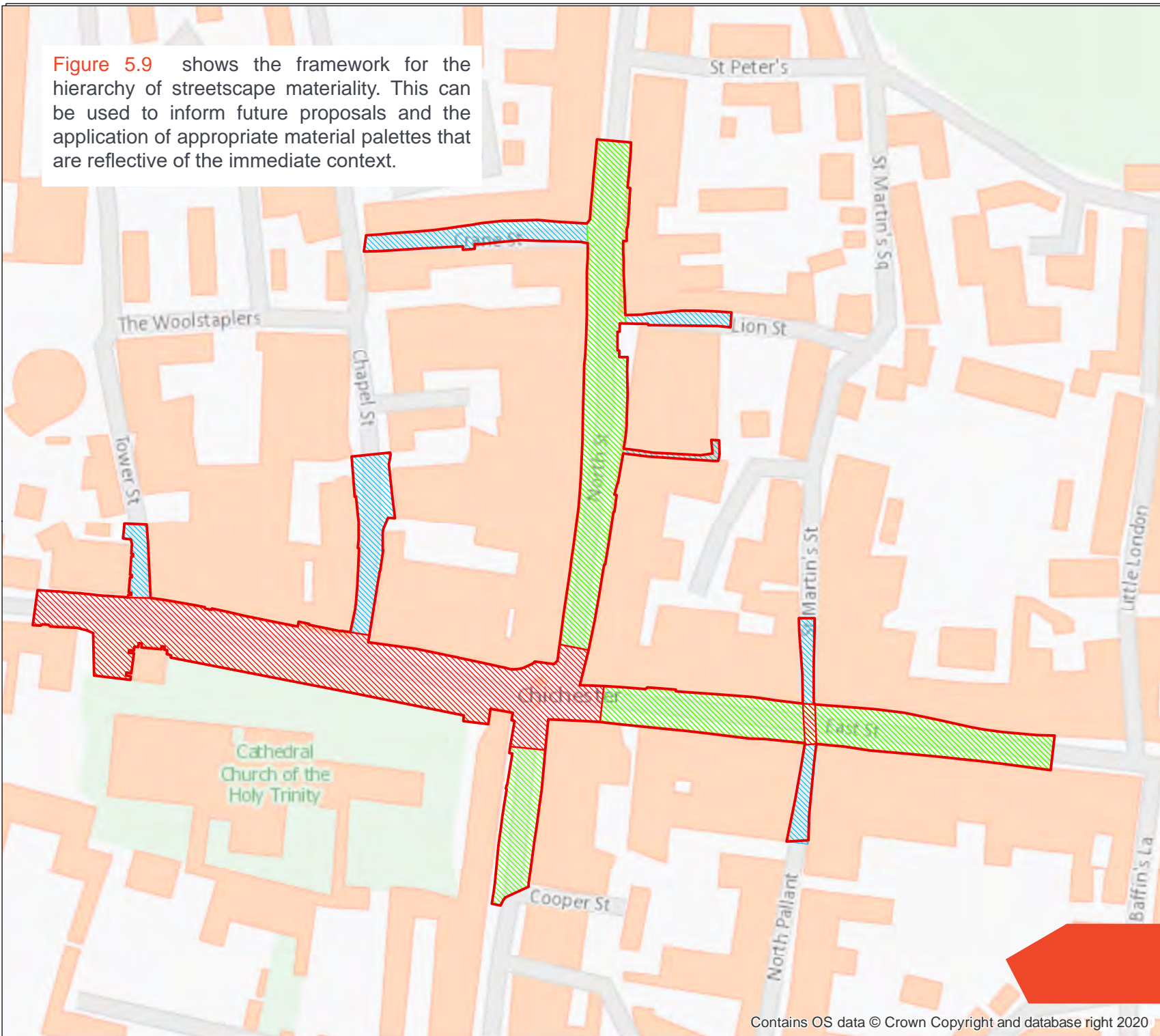
J HARRIES

APPROVED:

J HARRIES

FIGURE 5.8



Figure 5.9 shows the framework for the hierarchy of streetscape materiality. This can be used to inform future proposals and the application of appropriate material palettes that are reflective of the immediate context.



DO NOT SCALE

Information Classification:
PUBLIC
 Information that is available to the general public and is intended for distribution outside WSP.

Key

-  Study Boundary
-  Materials Palette (Primary)
-  Materials Palette (Secondary)
-  Materials Palette (Tertiary)

DRAWING STATUS: **STAGE 3 REPORT**



Kings Orchard, 1 Queen St, Bristol, BS2 0HQ, UK
 T +44 (0) 117 930 2077
 wsp.com

CLIENT: **West Sussex County Council**

ARCHITECT: **N/A**

PROJECT: **CHICHESTER CITY CENTRE PAVEMENTS**

TITLE: **PROPOSED SPATIAL HIERARCHY**

SCALE @ A4: 1:2,000	CHECKED: J HARRIES	APPROVED: J HARRIES
------------------------	-----------------------	------------------------

FIGURE 5.9

6.1 INTRODUCTION

6.1.1 West Sussex County Council (WSCC) have received an increasing number of complaints concerning the condition of the precinct relating to its surface condition and the resulting slips and trips by the general public.

6.1.2 In the 1970s the city centre was pedestrianised and Yorkstone, clay pavers and Purbeck limestone setts were installed. Over time, the area has been subject to greater levels of trafficking and a wide variety of uses (e.g. markets) and this has resulted in increased light goods vehicle loading, as well as heavy goods vehicle deliveries (e.g. 5 axle articulated lorries) and use of mechanical cleaning plant.

6.1.3 These heavier vehicles using the area are infrequent, however their damage can have lasting effects. Heavy vehicles cause damage to pavements, and in the event the pavement is not designed to take those loadings, failure will occur. The existing Yorkstone in particular has been cracking/becoming dislodged in the footways, especially in areas where the footway is driven over.

6.1.4 The city centre is regularly inspected by WSCC Highway Officers following the WSCC Safety Plus Inspection Manual, which prescribes the “frequency of inspections and the method of assessment, recording and actioning the repair of highway defects.”

6.2 HISTORIC ENVIRONMENT AND LOCAL REINSTATEMENT GUIDANCE

6.2.1 When considering the maintenance of highways, both the functional requirements of the assets and the aesthetics need to be considered.

6.2.2 Historic footways in the City Centre are likely to be very thin construction and therefore more susceptible to damage from vehicles. Yorkstone slab elements also more susceptible to damage from vehicles than small elements (e.g. pavers). The main carriageway area likely to be a thicker construction and therefore better suited to vehicular traffic. Small element are pavers also better at distributing traffic loads.

6.2.3 The Safety Plus methodology considers the safety of the highway (including footways), and any damage that may have occurred.

6.2.4 As noted in the WSCC Safety Plus Inspection Manual, the highways authority has a statutory duty under the Highways Act 1980 to maintain the highway network to a standard that the public can use them without obstruction. These highways include vehicle carriageways, footways, grass verges and pathways the public have access to. ‘Safety Plus’ was instated by WSCC to ensure a formal system is in place that dictates the frequency of inspection as well as the method, recording and actioning the repair of highway defects.

6.2.5 The approach follows the principles set out in Well Managed Highway Infrastructure: A Code of Practice (published by the UK Roads Liaison Group on behalf of the DfT).

6.2.6 Two types of highway inspections are carried out by the Highway Officers on West Sussex’s highways, being:

- Safety inspections to identify hazards which need to be repaired within the pre-determined response time, and
- Site inspections that are undertaken by a Highway Officer in response to a particular customer enquiry.

6.2.7 The Safety Plus process is not designed to assess the quality of previous repairs or possible future repairs due to any change in use of the highways. However, a Safety Inspection Observation Assessment (OAs) is carried out at the same time as the Safety Inspection, which aims to assess the general condition of the roads and pavements. The need for planned structural maintenance is thereby assessed and programmed.

6.2.8 The main objective of the Safety Plus inspection is to identify hazardous defects which are in need of repair to ensure the safety of users within a predetermined response time. The less urgent defects are noted in the OA which is done simultaneously. The Safety Plus process also provides evidence, if needed, in the defence of any litigation brought against the Country Council.

6.2.9 All WSCC highways subject to public use are assessed with the Safety Plus system.

6.2.10 Historically, there have been a relatively high number of interventions under Safety Plus inspections.

6.2.11 Utility companies must be able to maintain, repair and install equipment under roads. When they do so they are therefore required to reinstate the roads to certain standards to ensure they do not shorten their life or create uneven running surfaces. Government guidance detailing the requirements for this is contained within the Specification for the Reinstatement of the Openings in Highways (SROH).

6.2.12 Utility companies are obliged to follow this specification when reinstating the highway under the New Roads and Streetworks Act (1991). Local Authorities employ inspectors to ensure that work undertaken by utilities companies complies with the requirements of the specification.

6.2.13 The utility companies must ensure that the reinstatement conforms to the prescribed standards throughout a guarantee period. The guarantee period begins when a permanent reinstatement is finished and runs for two years in general (three years in the case of deep openings).

6.2.14 Reinstatements for utilities are generally functional but do not necessarily maintain the aesthetics of the historic environment. They also possibly lead to disturbance and thus, future defects.

6.2.15 An effective reinstatement should address the environmental and aesthetic elements, the safety of its users and the structural integrity of the pavement.

6.2.16 In terms of reinstatements, according to the SROH, permanent reinstatement of modular pavements should be done in accordance with the relevant part of the BS 7533 series of national standards. It should be noted that reinstatement of all modules within the works area is required, including any modules which may have been damaged in the process of the reinstatement. Laying course material characteristics are required to match that of the existing type and thickness of the existing pavement.

6.2.17 Where gaps are greater than 5 mm between modules and the fixed feature, the gaps can be filled with concrete. The infills should be as small as possible and where this cannot be avoided, the infills should match the existing work by the authority. Where possible infills should be limited to a maximum width of 50 mm, in some instances this cannot be avoided and the infill can be increased to 200 mm for irregular shaped areas.

6.2.18 Utilities companies are generally permitted to use both interim and permanent reinstatement methods (or a combination of the two) and detailed specifications exist for both. An interim reinstatement must normally be made permanent within six months. The specification also recognises

high amenity pavements i.e. routes constructed and maintained to a high standard or surfaced with materials specifically selected for decorative purposes, and flexible surfaces with a particular texture or distinctive coloured finish. Where an authority can demonstrate that a high amenity footway, footpath or cycle track has been constructed and maintained to a standard in excess of that prescribed in SROH (and registered accordingly) the reinstatement must meet the authority's standard of maintenance and their declared intervention criteria.

6.2.19 There may be a case to consider minimising the use of interim repairs (using asphalt surfacing in areas of stone and clay paving) so as to avoid potential "collateral" damage to surrounding areas of paving whilst they effectively have unsupported edges. The definition of high amenity areas in the SROH may provide a means to implementing this. However, it would be likely that a stock of suitable paving material would need to be held locally for use by all contractors. A local specification for a standardised, high-performance jointing mortar (e.g. Steintec) would also potentially assist in ensuring a more consistent and durable finish to reinstatements.

6.2.20 Even with suitable materials available, an issue still potentially remains with availability of a suitably qualified workforce, with experience of laying a range of small module paving materials and Yorkstone slabs.

6.2.21 Consideration should be given as to whether the streetworks inspections under SROH could be carried out in conjunction with the current Safety Plus inspections. This would potentially ensure that repairs done to address Safety Plus issues are carried out to an equivalent standard to those under the SROH, ensuring a high level of workmanship across all repairs.

6.2.22 As noted in Technical Note 1, the Chichester 'Historic Environmental Strategy and Action Plan', has the following key objectives:

- To promote the sustainable management of the historic environment;
- To identify the key issues and opportunities facing the historic environment;
- To identify the key priorities for action to improve the management of the historic environment;
- To promote a partnership approach to the management of the historic environment.

6.2.23 A site walk-over was undertaken by WSP and identified some areas where reinstatement practice could potentially be improved. A small number of typical examples of issues with reinstatements are shown below.

6.2.24 As seen in Figure 6.1, a repair to the red brick pavers has been made using asphalt. This may be a utility reinstatement rather than a Safety Plus repair. The repair is not in keeping with the adjacent materials and could lead to further damage in the wider area due to reduced edge

restraint whilst the temporary asphalt repair is in place. It is unclear if this is an interim reinstatement to make the area safe or whether materials were not immediately available to undertake a matching repair. Under the existing Safety Plus regime, the contractor is required to undertake repairs on a like-for-like basis.

6.2.25 Issues may still arise with availability of both specialist paving materials (e.g. colour matched mortar) and a suitably skilled workforce, especially for very small areas of reinstatement. In this respect, the same issues are faced by both utility contractors and highway contractors.

6.2.26 Figure 6.2 indicates a repair made to a broken paving slab. The slab appears to have been repaired by filling the cavity with concrete, and not levelling off the surface or replacing the broken slab, leaving a potential trip hazard. Although the repair potentially addresses a larger hazard, it replaces it with a smaller one rather than eliminating the problem. It is not possible to determine why the surface has not been levelled. Equally, the reinstatement does not uphold the aesthetic standard of the pavement. It appears that without a more formalised process of subsequent inspections of workmanship quality for repairs under the Safety Plus process, this type of issue may re-occur.



Figure 6.1: Temporary repairs to block paving with asphalt (utilities)



Figure 6.2: Broken slabs repaired with concrete



Figure 6.3: Slab infill with concrete

6.2.27 Figure 6.3 shows a similar repair, where the broken slab has been removed and the entire cavity has been filled with concrete. In this case, the concrete surface is flush. However, the aesthetics of the repair are extremely poor.

6.2.28 Figure 6.4 indicates a defect on West Street which could have more structural implications. It appears there is some pumping of the underlying base material, and bedding sand has migrated to the surface. If not addressed, this could lead to more significant pavement failure and loss of paving blocks. This could be due to the failure of an underlying utility trench and should be subject to further investigation and monitoring of the rate of deterioration.



Figure 6.4: Block paving irregularities

6.2.29 Consideration should be given to the intended usage of the pavements during the inspection, to promote a more holistic “lifecycle” approach to maintenance. Some areas of pavements were originally constructed for pedestrian use only, and therefore heavy vehicles using these areas will only accelerate their deterioration. During inspections, if this is noted, preventative measures can be put in place (such as putting up barriers so that vehicles physically cannot use the footway). If the intended use of the pavement has been changed since design, then additional interventions are needed, such as strengthening the pavement so that accelerated deterioration and pavement failure does not occur.

6.2.30 To achieve better safety on the highways and help achieve the aspirations of the paving strategy set out by Chichester City Council, it is recommended that the Safety Plus and SROH guidelines be assessed in conjunction with each other. If the structural integrity of the pavement is not ensured, the aesthetic goal of the area cannot be achieved. The feasibility of introducing a “premium” standard of Safety Plus repairs could form a part of the considerations for future contracts.

6.2.31 The Safety Plus Inspection approach could be expanded to include whether the assets are functioning at their required standard, i.e. if the pavements are overloaded. It could take note of temporary repairs made and aim to ensure that proper reinstatement of the highway is undertaken so that the historic environment is maintained. Clearly, there would be a requirement to resource this approach with additional, suitably trained inspectors to facilitate this.

6.2.32 As noted in the Chichester City Centre Re-paving Strategy Programme, the preferred stance, from an aesthetic and environmental point of view, is to rework and reuse the stone currently present in the city centre. In order to remain in keeping with the goal, concrete or asphalt reinstatement/infills should be kept to a minimum where possible and once slabs have been reworked, they should be reinstated appropriately.

6.2.33 Analysis of Safety Plus data revealed that the highest density of repairs is around the Market Cross and North Street. This pattern was found to be consistent over time. It should be noted that the location information for reinstatements is probably not accurate enough to determine whether defects are in the historic footway areas or the road areas and therefore it has not been possible to determine whether vehicular traffic is contributory factor at Market Cross.

6.2.34 An analysis of utilities and Highways Permits data for 2015 to 2020 was also undertaken. No definitive location data is available for these, so it has not been possible to add this information to the GIS map.

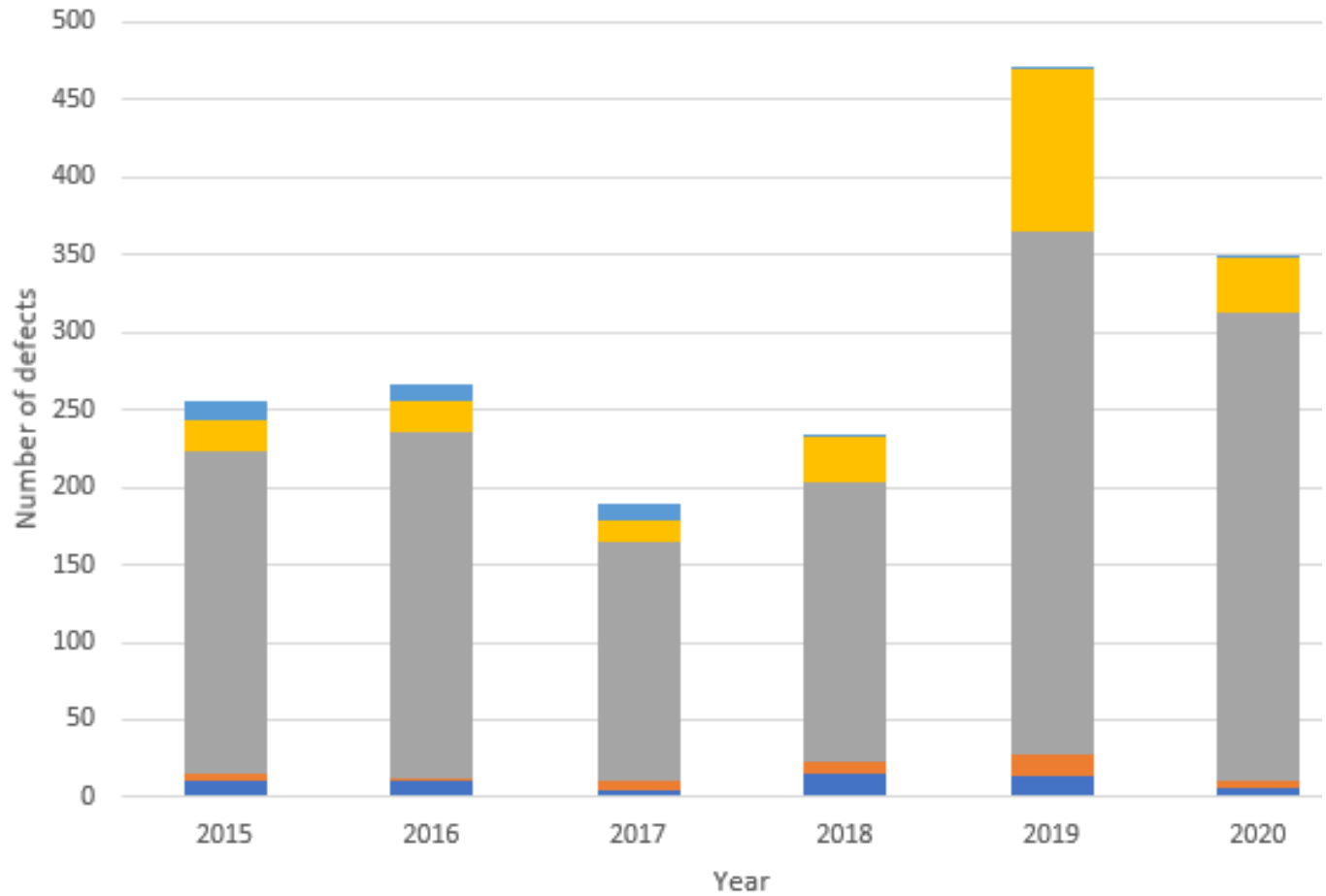


Figure 6. 6 Defect types for Safety Plus repairs

6.2.35 The data provided was split into North Street, East Street, East Street precinct, West Street and South Street. The data was then subjectively grouped into 4 types:

- Utility Works
- Utility Remedial Works
- Scaffolding
- Other Council Activities

6.2.36 Of note were the number of permits for scaffolding lorries. Some “Other Council Activities” should probably be excluded from the analysis, as it is unlikely that they would influence pavement condition.

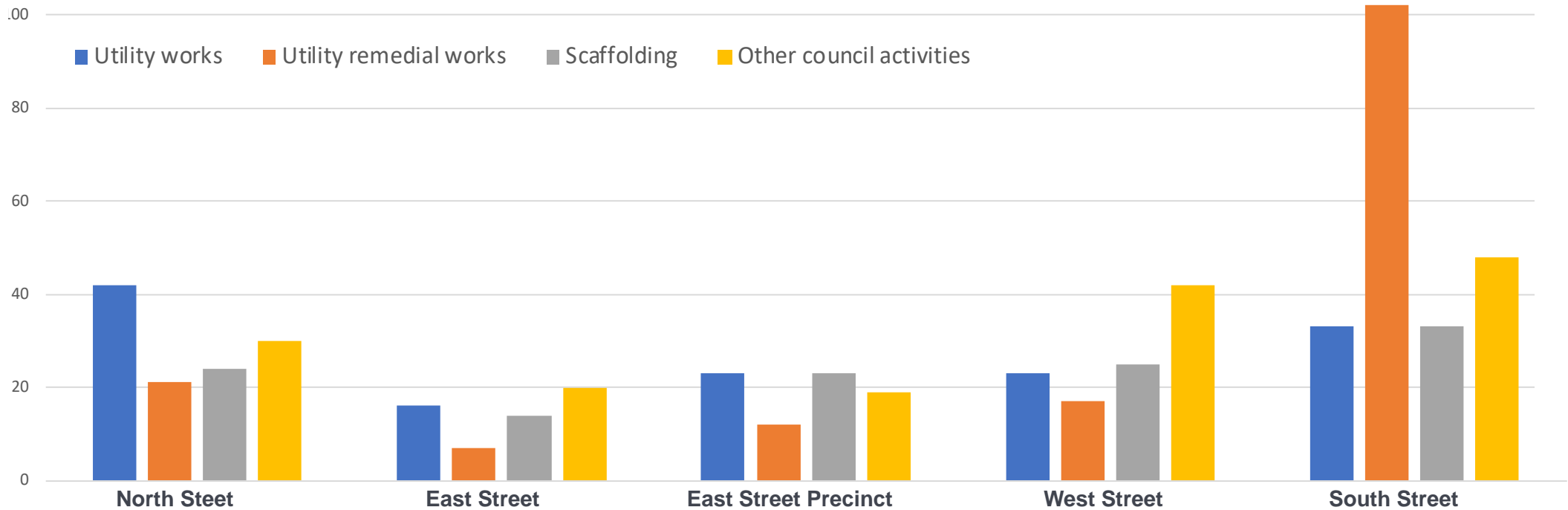


Figure 6.5 Activity types for Utilities and Highways Permits

7.1 INTRODUCTION

7.1.1 The heritage priority areas and pavement condition priority do not necessarily align. A strategy is needed to effectively maintain the pavement areas whilst considering the structural loading requirements, as well as the need to remain in keeping with the historical environment.

7.1.2 The areas identified as needing the most attention from a pavement condition perspective are the Yorkstone footways along North Street. There are also a number of missing and defective red clay pavers in the carriageway area. Whilst these appear to be less frequent, they are of equal importance in terms safety (i.e. potential trip hazards).

7.1.3 The area around the Market Cross is not exhibiting signs of pavement structural deterioration. However, it does appear that significant areas of surfacing have been reinstated (not always to an appropriate standard). If the area is a hotspot for slips, trips and falls, it would be useful to interrogate any available data in greater detail (i.e. is this due to wet surfaces or loose pavers). The areas does not generally appear to be subject to vehicular traffic, but exclusion measures should be considered to ensure this does not happen in future.

7.2 MAINTENANCE STRATEGY

7.2.1 A number of options have been considered incorporating a range of intervention strategies.

Very High Cost Option – Market Cross, North and East Street (£15.5M-£18M) – Large scale public realm scheme

Pros	Cons
Improves public confidence	Cost
Addresses all current pavement deterioration	Causes major disruption during construction
Ensures pavement design is suitable for vehicles	Statutory undertakers may cause further damage in future
Surfacing materials can be selected to provide best protection against future traffic	Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

High Cost Option – North and East Street Footways (£8M-£12M) Full depth pavement reconstruction in footway areas using new high-quality natural stone

Pros	Cons
Addresses pavement deterioration in areas with most defects (i.e. Yorkstone) (need to consider issue of missing road pavers)	Does not address issues in carriageway area and will be less visually appealing
Ensures pavement structural design is suitable for vehicle overrun	Relatively high cost
Natural stone design to BS 7533 can be selected to provide best protection against future traffic	Statutory undertakers may cause further
	Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

Medium Cost Option – North and East Street (£2.5M-£2.9M) – Specialist Asphalt replacement in carriageway areas and lift and relay of Yorkstone footways public realm scheme

Pros	Cons
Improves public confidence	Still relatively high cost
Addresses most pavement deterioration	Causes major disruption during construction
Surfacing materials can be selected to provide best protection against future traffic	Statutory undertakers may cause further damage in future
Visually more appealing than ordinary asphalt	Colouring may not last
	Possibly encounter construction issues due to presence of shallow utilities in the pavement layers

Medium Cost Option – North and East Street (£2.3M-£2.7M) – Standard Asphalt replacement in carriageway areas and lift and relay of Yorkstone footways

Pros	Cons
Improves public confidence	Still relatively high cost
Addresses most pavement deterioration	Causes major disruption during construction
Surfacing materials can be selected to provide best protection against future traffic	Less visually appealing
Easier to reinstate than specialist asphalt	Possibly encounter construction issues due to presence of shallow utilities in the pavement layers

Medium Cost Option – Market Cross (£2.5M-£3M) Full depth pavement reconstruction using new high-quality natural stone

Pros	Cons
Addresses pavement deterioration in area with many defects	Does not address issues in North Street/ East Street
Ensures pavement structural design is suitable for vehicle overrun	Relatively high cost
Natural stone design to BS 7533 can be selected to provide best protection against future traffic	Statutory undertakers may cause further damage in future
	Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

Medium Cost Option – Market Cross (£1.5M-£2.5M)
Lift and relay all Purbeck setts, traffic exclusion

Pros	Cons
Reinstates good bond between units and addresses different types of mortar in use.	Does not address any pavement structural issues
Repairs previous damage potentially caused by statutory undertakers' reinstatements.	Without excluding vehicles, similar defects likely to reoccur
	Statutory undertakers may cause further damage in future

Medium Cost Option – North and East Street (area dependant) Localised strengthening for known areas of vehicle overrun

Pros	Cons
Lower cost than full scheme	Does not address all pavement structural issues
Could make use of Yorkstone from Crane Street as a “buffer” resource	Reliant on vehicles only using strengthened areas, otherwise defects likely to reoccur
	Yorkstone not really suited to vehicular traffic
	Using alternative materials more suited to trafficking may not be visually appealing
	Statutory undertakers may cause further damage in future

Low Cost Option – All areas
Reinstate minimum areas rather than single elements when undertaking repairs

Pros	Cons
May reduce repeat visits to hotspots	Does not address any pavement structural issues
Improves overall bond between units	“Patchwork” appearance

Low Cost Option – All areas
Exclude vehicles from footway areas (e.g. planters, wardens, market marshals, ANPR, permit requirements for scaffold lorries)

Pros	Cons
Prevents further damage to cracked slabs	Does not address existing damage
	May pose access issues for less able and visually impaired

7.2.2 In the Stage 1 report, it was identified that these areas as being trafficked by vehicles and were not originally designed for such loadings (due to the markets in the area, scaffold lorries and deliveries to businesses etc). It is important to establish whether these vehicle movements are essential and if these deliveries could be made in a different way i.e. through rear entrances for example. If rerouting these vehicles are not possible, then localised pavement strengthening should be considered. This may prove to be a costly solution as there is likely no pavement foundation or structural layers present in those areas. The likely presence of shallow utilities in these areas may also prove to increase the cost and complexity of this type of treatment.

7.2.3 An alternative to strengthening is use some form of physical restriction to prevent vehicles from trafficking certain areas. These barriers could be planters for example which would not detract from the existing environment and can be considered a low-cost solution. Due consideration would need to be made on the effects of “highway clutter” and any impacts on visually impaired users.

7.2.4 High Amenity Pavements in the city centre could be given an increased hierarchy score within the WSCC asset management system. This could then be related to higher quality reinstatement requirements than those specified in SROH. A combined approach to reinstatement requirements can then be specified in conjunction with Safety Plus to ensure a consistent approach between utilities and highways.

7.2.5 The approach suggested would align the process for inspecting reinstatements and repairs. It is suggested that the same resource team is used to ensure a consistent approach.

7.2.6 In addition to the aligned inspections, consideration could be given to holding materials locally, such as pavers and mortar, to ensure appropriate materials are used. This would also aid in colour matching.

7.2.7 A medium cost intervention could consider a phased approach to replacing pavers. Specific areas could be identified which have the most urgent need for treatment. The work could then incorporate structural strengthening for the trafficked areas. The initial focus could be those extents identified in the Tier 2 heritage areas which would cover those currently damaged areas along North Street.

8.1 HARD LANDSCAPE MATERIALS - NATURAL STONE

8.1.1 There are numerous natural stones which are suitable for use across the study area, on both trafficked & pedestrian zones. Options for natural stone include Porphyry, Granite, Sand or Yorkstone. Each could be used to create a classic, yet contemporary finish, in keeping with the heritage assets around Chichester city centre.

8.1.2 Natural stone is both strong and durable. It also boasts a huge range of colours and tones. A warm colour palette, similar to existing Purbeck setts, could be selected to reflect and tone with Chichester's sandstone architecture.

8.1.3 Granite, in particular, is the ideal material for using to pave very heavy loading areas. It is frequently used around the World on busy bus routes in heritage sites, similar to Chichester city centre.

8.1.4 Bespoke sizes can be used to create variety to design as well as to tailor to specific sites & constraints. This enables the same stone to be used in a variety of locations across the study area, for example a deeper, smaller unit can be used for trafficked areas, or areas which may have over-run, with larger sized units on pedestrianised areas.

8.1.5 Using natural stone would be the recommended approach for those areas identified

as primary priority areas in terms of heritage importance (Figure 5.9) The elegant, timeless finish as well as the ability to create bespoke items will greatly benefit these spaces.

8.1.6 A cost effective way to use natural stone may be to combine high quality natural stone units with a lower cost surfacing such as concrete slabs by using small setts as a design feature & lift a scheme. This method can also help to achieve a connection & level of consistency of lower priority areas with higher priority zones.

ADVANTAGES

- Very high quality look & feel for the public realm;
- Long life expectancy (50+ years if laid correctly and maintained);
- Colour palette in keeping with the design ethos & historic character of the area;
- Bespoke size options would guarantee a better fit to the design ethos and aspirations;
- Very high slip resistance threshold;
- Strong resistant to abrasion and weathering;
- Can be transformed to suit individual requirements and design needs; as can be cut to a variety of sizes and thickness and available in a variety of finishes;
- Can be ethically sourced.

DISADVANTAGES

- Bespoke size option would guarantee a better fit to the design ethos and aspirations;
- As it's extracted from quarries, unlike man made products, we have no control on the exact shades available;
- May suffer from staining as most natural stone products;
- Less porous stone, requires a very well coordinated level - drainage design;
- More expensive than most man-made options
- Potentially longer lead times than man-made products;



Precedents with Porphyry paving units



Precedents with Yorkstone paving units



Precedents with Granite paving units



Precedents with natural stone units combined with man-made slabs

Figure 8.1 precedent images with natural stone paving

8.2 HARD LANDSCAPE MATERIALS - MAN-MADE MATERIALS

8.2.1 Man-made products can be sourced from a variety of different manufacturers, some of which have a large range of unit sizes to assist in suiting every situation & in creating a varied appearance.

8.2.2 An increasing amount of manufacturer are now creating a wider variety of sizes and shapes to be able to create a more bespoke & unique scheme.

8.2.3 Paving units can be used that are coloured with a 100% natural stone aggregate top layer, rather than coloured pigments, which creates a higher quality paver and improves the appearance of the units as well a improves the life span of the product.

8.2.4 A concrete range with a broader colour range enables a more natural finish to be achieved through laying a random mix of colours.



ADVANTAGES

- Reduced cost compared to natural stone alternative;
- Potential to use a permeable version in certain areas;
- Generally shorter lead in times than natural stone;
- Reduced continued costs for maintenance replacements;
- Easier to source replacements at a later date when needed unless range becomes discontinued.

DISADVANTAGES

- Very low quality look & feel compared to other high quality concrete pavers and significantly lower than the natural stone alternative;
- Often higher CO₂ emissions than using natural stone options;
- Lower slip resistance;

Figure 8.2 precedent images with ideas of concrete pavers

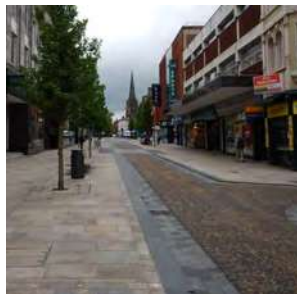
8.3 HARD LANDSCAPE MATERIALS - INCORPORATING ASPHALT

8.3.1 Using an asphalt surfacing to the carriageway may be a successful way to reduce costs & focus spending on the quality of the footways & higher priority areas.

8.3.2 Using an asphalt surface to carriageways will change the appearance of a shared space and make it feel more like a traditional street. Using paving on the carriageway helps to slow traffic making a shared space safer for all users.

8.3.3 An asphalt surface can be a large area of black / dark surfacing which often darkens the public realm. Techniques such as using a light grey or buff coloured chipping within the asphalt can help to lift / brighten the overall appearance.

8.3.4 Using a coloured wearing course however, becomes discoloured and stained by oil quickly and is low wearing which commonly leads to patching & track marks from vehicle overrun.



ADVANTAGES

- Reduced cost compared to paved alternative;
- Generally shorter lead in times than natural stone;
- Generally quicker to install so requiring shorter road closures;
- Reduced continued costs for maintenance replacements;

DISADVANTAGES

- Very low quality look & feel compared to other high quality pavers and significantly lower than the natural stone alternative;
- Has a negative impact on the effect of a shared space & the slowing of traffic;
- Coloured surface courses become discoloured and colour wear away in a short timeframe.
- Utility maintenance leads to unsightly tracks

Figure 8.3 precedent images with asphalt carriageways

8.4 HARD LANDSCAPE MATERIALS - REUSE OF EXISTING MATERIALS

8.4.1 There are numerous natural stone units which are suitable for use across the study area on both trafficked & pedestrian zones.

8.4.2 Options for natural stone include Porphyry, Granite and Yorkstone. Each could be used to create a classic, yet contemporary finish, in keeping with the heritage assets around Chichester city centre.

8.4.3 Natural stone is both strong and durable. It also offers a huge range of colours and tones. A warm colour palette to existing Purbeck setts could be selected.

8.4.4 Bespoke sizes can be used to create variety as well as to tailor to specific sites & constraints. This enables the same stone to be used in a variety of locations across the study area, for example a deeper, smaller unit used for trafficked area with the same side unit on pedestrianised areas.

8.4.5 A cost effective way to use natural stone may be to combine high quality natural stone units with a lower cost surfacing such as concrete slabs by using small setts as a design feature & lift a scheme. This method can also help to achieve a connection & level of consistency of lower priority areas with higher priority zones.



Figure 8.4 examples of existing paving that could potentially be lifted & relaid

ADVANTAGES

- Very high quality look & feel for the public realm;
- Long life expectancy (50years + if laid correctly and maintained);
- Colour palette in keeping with the design ethos;
- Bespoke size option would guarantee a better fit to the design ethos and aspirations;
- Very high slip resistance threshold;
- Strong resistant to abrasion and weathering;
- Can be transformed to suit individual requirements and design needs; as can be cut to a variety of sizes and thickness and available in a variety of finishes;
- Very strong natural stone;
- Can be ethically sourced.

DISADVANTAGES

- Challenging to match should additional material be needed.

9.1 INTRODUCTION

9.1.1 During the process of the review of the City Centre pavements, it was understood by the WSP team that stakeholder engagement of the research and investigations would form a critical part of gathering feedback and opinions on the current situation and potential way forward.

9.2 WSCC / CDC OFFICER REVIEW

9.2.1 A joint meeting between WSCC, CDC and WSP was held on the 11th November to review the information gathered and to sense check the WSP teams approach to prioritisation, based on heritage value and share the research findings. This was a very helpful discussion and raised the concern that, for CDC Officers, that although heritage asset was important, user experience was more critical for the City Centre pavements. Based on this feedback, the WSP team adjusted the scheme assessment and reporting.

9.3 STAKEHOLDER ENGAGEMENT EVENT

9.3.2 The next stage of engagement was with the wider City Centre Group and research funding partners; WSCC Officers, CDC Officers, City Mayor and local County Councillors.

9.3.3 WSP presented its review of its research and suggestions, including a high level review of potential interventions and budgetary information (set out in Chapter 07 Potential Approaches to Pavements).

9.3.1 A full set of notes is contained in **Appendix C** but some of the main key points are collected here:

- There is a real “mish-mash” of surface types - is this unique to Chichester?
- Yorkstone not local or really part of conservation, not “classically” historic in relation to Chichester
- Macadam in roadways with traffic since mid 19th Century, would it be more practicable to use Tarmac? It can be pleasing with colours and/or textured, could this replace Yorkstone but keep Purbeck – safety of people high priority.
- It was mentioned whether “bays” of asphalt with strips could be used so that utility companies would have to reinstate the whole patch between the “lines” – a higher level of SROH reinstatement can be made and WSP team will investigate if this has been done elsewhere using the regulations and a “higher standard” reinstatement.
- The surface needs to be suitable for all abilities and for disabled movement.
- The Market in the city is popular (currently moved to Cattle Market CP during COVID) and traders would prefer it right in the centre of the city, adds to vibrancy of the city.
- CDC undertaking mapping exercise at the

moment.

- The potential use of asphalt would have heritage impacts and it should be recognised that the retail centre is under pressure and heritage helps to support this although there is a trend towards more “cafes” and a “service” rather than shopping there is a strong sense of pedestrianisation that the current pavement surface provides.
- East and North Street there was concern that something that looks more “road like” might impact on that feel of pedestrianisation.
- The use of street furniture, trees and public realm layout could be made to retain that feel and better define the pedestrian areas to make it safe and practicable.
- Comment was made that it would need to remain a step free, level surface, kerbs would not be welcomed especially by disabled groups, pedestrian safety is paramount, need to maintain restricted access hours.
- It was comments about Fire Service access needing to be maintained.
- Expected that there needs to be a phased approach and there now needs to be co-ordinated approach on palette of materials and funding needs to be discussed and moved forward.

10.1 CONCLUSIONS

10.1.1 Following an increasing number of complaints about the condition of the city centre pavements and an increase in trips and slips WSCC appointed WSP to undertake this initial study to understand, map and communicate the issues, constraints and opportunities.

10.1.2 This report covers the visual surveys, planning reviews and strategic context and interrogated data on maintenance and repairs that has been undertaken in order to understand the context and inform potential solutions to the maintenance issues.

10.1.3 Building upon this contextual understanding, WSP has led a series of informal and formal engagements with WSCC and CDC officers, local councillors and in-house experts to build up an understanding of practical and perceptual issues around the existing streetscape conditions, as well as capturing ideas and aspirations for how best to drive forward the right solutions. This progressed to inform the high level strategies and outline solution options contained within this report.

10.1.4 Through undertaking this process, it has become apparent that the City Centre Pavements Study is one of many parallel projects under development within the district, and there is a significant number of complimentary and competing opportunities in the immediate vicinity which will undoubtedly influence design solutions.

10.1.5 The quality of repairs needs to improve and this report explores ways and methods that this could be achieved. There is a great opportunity to enhance the user experience, commercial opportunities, historic environment, cultural offer and improve the environmental benefits of the city centre. Careful stewardship will be required to ensure that the right solutions are applied that will stand the test of time in a rapidly evolving context.

10.2 NEXT STEPS

10.2.1 This study demonstrates that there are significant issues with unmanaged vehicle movements over areas of a pavement likely to have only been designed and constructed to take pedestrian loadings so the next steps will involve firming up these conclusions through detailed visual, intrusive and non-intrusive surveys, further engagement and collaboration to ensure that proposals integrate with wider strategies and ambitions.

10.2.2 Progressing with any of the pavement rehabilitation options put forward in this report would first benefit from an appropriate pavement investigation and traffic analysis.

10.2.3 Work to date has identified a number of additional activities that could be pursued to either take advantage of some potential quick wins or to further develop future proposals for the City Centre. These include:

- Undertaking a more detailed internal review of WSCC pavement inspection processes (Safety Plus and Streetworks)

- Joint WSCC / CDC review of the hierarchy of the City Centre pavements to explore the possibility of higher quality standards and specifications for utility reinstatements
- Review options for quick wins for footway pavement protection measures from vehicle overrun using street furniture (jointly between WSCC / CDC / CCC)
- Undertake a targeted pavement investigation to determine pavement construction thicknesses, types and condition and undertake a detailed pavement visual inspection to develop a baseline condition assessment to inform any future work.
- Develop design brief for emerging proposals. To consider;
 - Other local schemes that may impact proposals (ie East – West cycle link)
 - Sustainability objectives
 - Urban greening
 - Lighting
 - Events and uses
 - Public art
 - Incorporation and location of seating and amenity
- Develop engagement/consultation brief to widen dialogue with;
 - Community groups
 - Heritage groups
 - Local Businesses
 - Accessibility groups
 - Funding opportunities
- Continue to develop GIS tools

A large red geometric shape, resembling a stylized arrow or a large 'A', is positioned on the left side of the page. It has a vertical left edge, a horizontal top edge, and a diagonal right edge that tapers to a point.

Appendix A
STAGE 1 TECHNICAL NOTE



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

1. INTRODUCTION

Purpose of the Project: WSCC requested an Options Appraisal for the City Centre Precinct areas, based on a project inception call on the 7th April 2020 with call attendees:

Chris Dye Highway Operational Manager – Western and Central Area
Alex Sharkey Manager Highways Projects
Stephen Reed WSCC Major Projects PM (Secondment WSP)

Reducing Maintenance issues in the City Centre Precinct area through surface materials, construction approach, improving / reducing long term maintenance costs and managing Utility impacts whilst balancing multiple area uses, Conservation area and user expectation

Revision A includes Andy Howard CDC notes from call on Street Cleansing.

In the subsequent submitted brief, WSP have agreed with WSCC Officers a three-stage approach to the Options Appraisal:

1. Initial / inception call / meeting, review notes, prepare brief and agree approach, site walk over (COVID-19 RA), initial photos and problem identification, confirmation of issues, Officer calls / notes – short summary technical note with photos for client validation – call to agree next stage
2. Prepare list of options with pros and cons (based around Low, Medium and High interventions), potential phasing / priority areas / quick wins, thoughts on palette and construction – towards end of stage, conference call with WSCC and CDC to discuss finding in relation to Conservation Area issues, agree final stage
3. Prepare high level cost estimates based on reviewed stage 2 Options, firm suggested priority programme / phasing, short technical report / note bringing together findings from stages 1 and 2, using simple GIS based mapping only at this stage, potentially some simple sketches of paving / materials layouts (would be firmed up through stage 2)

This technical note covers stage 1 – summary of findings and problem identification for client validation. It is intended to have a combined conference call with WSCC to outline and agree the Stage 2 approach and initial feedback on the Stage 1 notes.

The following sections provide a summary of the findings of a walk over survey conducted (under COVID-19 restrictions) on the 14th May by Donna James (Pavement specialist), Joe Harries (Landscape and Public Realm) and Stephen Reed (WSCC/WSP PM).

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

2. SUMMARY OF INCEPTION MEETING NOTE

The following are key bullet points from the Inception meeting call between Chris Dye, Alex Sharkey and Stephen Reed on the 7th April 2020. From this the brief and approach were provided.

- WSCC has received an increasing number of complaints about the condition of the “Precinct” in terms of its maintenance condition and an increase in trips and slips reported.
- There has been an increase in “multi-use activity” of the areas through the City Centre Markets leading to increased mechanical cleaning, OGV loading as well as the occasional HGV delivery loading - albeit these are small figures they are disproportional in their impact and also traffic over footway areas, so they don’t block the “through route”.
- The existing Yorkstone dates from around the 1970’s so is not necessarily “historic” within the Conservation areas; the red paviers are not as old and the layout still identifies the “through” route between East Street and North Street with South Street to West Street still a bus route
- There are problems of the Yorkstone cracking in the footway areas (where it gets driven over) and WSCC undertake a lot of reactive safety “pointing and reseating” and they target a lot of areas but there are continual and increasing failures
- Consider Conservation area but materials palette not driven by this (reduced maintenance led key approach)
- In terms of drainage – lots of historic slot drains, cleaning is a key issue (especially outside places on West Street by department store, along South Street by Tesco)
- One consideration might be changing tops of slots / local overhauls where it might be necessary
- Utilities - these are seen as a big problem, even if new works are completed and protected, only provides a limited number of years protection and does not protect against new connections and emergencies which can override this clause
- Bus route is likely to stay as is – feeling that pavement needs to remain “flexible” in the bus areas (South Street and West Street) consideration of impact of buses needs to be included
- Poor bus driver behaviours cutting the corner by Russell and Bromley (from South Street into West Street and mounting the footway which is a cause for concern

Following the meeting, a site visit was organised (see Section 5), and contact made with several recommended individuals and teams to gain wider feedback on issues, to include in the background, these are summarised in section 7 and Appendix A.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

3. CHARACTER AND SETTING FOR PROJECT

In order to understand the context and inform potential solutions to the maintenance issues, we have reviewed relevant documentation surrounding heritage, public realm and planning policy. This chapter sets out relevant extracts from key planning, character and heritage assessments that will need to be considered when deciding upon appropriate public realm treatments of the precinct area. This is for information gathering purposes only, and we have not sought to make any judgement or conclusions at this stage.

The study area lies within the Chichester Conservation Area, introduced within the Character Appraisal as *“the county town of West Sussex and one of the country's best-preserved historic cities.”*

Conservation areas;

Key points of reference and legislation;

- Set out in Civic Amenities Act 1967
- Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990 obliges the creation of conservation areas.
- Section 72 of the same Act also specifies that it is the general duty of local planning authorities, in the exercise of their planning functions, to pay special attention to the desirability of preserving or enhancing the character or appearance of these Conservation Areas. (The Character Appraisal and Historic Environment Strategy (as reviewed below) are the mechanisms to allow the authority to discharge their duty.

Planning Background;

Chichester's Local Plan sets the Vision for the sort of place that the District should be by 2029.

It will be a place where people can:

- *Enjoy a vibrant historic city, thriving towns and villages and areas of attractive, accessible and unspoilt harbours, coast and countryside;*
- *Have a quality of life that is enriched through opportunities to enjoy our local culture, arts and a conserved and enhanced heritage;*

The conservation and enhancement of the historic environment, the high quality landscapes and the agricultural and other rural activities that support it will remain paramount.

The Chichester Local Plan: Key Policies 2014-2029 was adopted by the Council on 14th July 2015 and sets out the Council's policies and is used extensively for development control purposes.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

Chapter 3 The Vision and Objectives sets out a Vision for the sort of place the plan area should be by 2029 and sets out a series of Objectives for realising this vision including conserving and enhancing the distinctive character, quality and importance of the historic environment.

The policies relating to the historic environment are set out in Chapter 19, with key points from Policy 47 – Heritage and Design below as useful reference;

The following relevant criteria must be met to satisfy planning policy;

- *conserves and enhances the special interest and settings of designated and non-designated heritage assets including:*
 - *Listed buildings including buildings or structures forming part of the curtilage of the listed building;*
 - *Historic buildings or structures/features of local distinctiveness and character;*
 - *Conservation Areas;*
- *respects distinctive local character and sensitively contributes to creating places of a high architectural and built quality;*

The supporting guidance goes on to say;

Proposals affecting designated and undesignated heritage assets and their settings should demonstrate that they meet the following guidance:

- *The use of traditional, local materials and adherence to local building techniques and details, where appropriate;*
- *The conservation of features and elements that contribute to the special interest of a heritage asset.....:*
- *Appropriate use of the heritage asset that is compatible with the conservation of its significance*
- *The landscaping... and external appearance ... within conservation areas should conserve and enhance the special historic and architectural interest of the conservation area;*
- *Proposals affecting a non-designated heritage assetshould not harm its special interest*

Character appraisal review

The headline information relating to the study (enforceable under Section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990) is as follows;

- *Various studies have been undertaken into Chichester's public realm with the aim of developing a consistent approach, including to signage, paving, street furniture and information for visitors. **One of the recommended actions in the Management Proposals includes the bringing together of***

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

these studies to create an overarching Public Realm Strategy for Chichester to inform future proposals.

- ***The Chichester Conservation Area contains a number of stone flagged streets, which must be protected.....and repaired as necessary, using traditional techniques and materials.***
- *Further areas of natural stone paving might be considered, as funds permit, for the City centre, particularly for The Pallants, Westgate, Northgate, Southgate and Eastgate Square.*
- **There is a requirement for a public realm strategy** which can then be used to attract Community Infrastructure Levy (CIL) finance to fund Implementation of improvements.

We have extracted some additional relevant or potentially useful or influential points as follows;

The Chichester Conservation Area encompasses the whole of the Roman town...and is notable for the following:

- *High concentration of listed buildings*
- *Continuous good quality townscape*
- *Chichester Cathedral and its Close*

Further functions / influences / observations from report pertinent to the study area;

- *Chichester is a busy market town*
- *The principal shopping streets are North Street, East Street and South Street. West Street is more mixed, with the Cathedral, County Hall, and the Prebendal School all influencing the character of this part of the City.*
- *A large number of small independent retailers contribute to the vibrancy and character of the city centre.*
- *Within the City, there are numerous views of the Cathedral spire which can be seen from all directions [and are] important to the character and appreciation of the Conservation Area.*
- *The Market Cross is the second most important focal point in the City, situated as it is on the crossing point of the four principal streets. Its stone construction and Gothic design contrasts with the red brick and render of much of the surrounding townscape which is largely of Georgian character.*
- *The City centre has developed as a significant shopping hub which needs to compete with larger centres in Portsmouth and Brighton.*
- *Purbeck stone paving was traditionally found in Chichester but most of it has been replaced with modern concrete, clay paviors or tarmacadam .*

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

- *The City centre was pedestrianised in the 1970s and York stone paving, clay paviors, and new street furniture (litter bins, signage, street trees, bus stops) installed. This has been damaged in places and a thorough overhaul of the street surfaces of the whole City centre is now due.*
- *Recently, a landscaping scheme in Friary Lane has been completed using sawn York stone and modern street furniture.*
- *Some very good quality Purbeck limestone and York stone paving remain. The limestone paving is largely a silvery grey colour, laid in courses of irregular depth. The sizes also vary from 300mm square to one metre long by about 600mm wide. The stone is riven faced (i.e. naturally uneven), with a wide joint. The best examples are:*
 - *St Martin's Square*
 - *Canon Lane, St Richard's Walk, and around the Cathedral*
 - *East Pallant, West Pallant, North Pallant and South Pallant*
- *Street lighting has recently been upgraded under a West Sussex County Council led Private Finance Initiative (PFI) project. A number of historic street lights have been retained and other modern ones replaced.*
- *The change of lighting type has had an effect on the Conservation Area at night as the LEDs produce a much whiter light and in the case of the lanterns reflects in the glass. This can appear rather harsh within such historic streets and should be addressed again as this emerging light technology changes.*

Chichester 'Historic Environment Strategy and Action Plan' review

The Strategy and Action Plan has been drafted to support the Local Plan to inform the positive strategy for the Historic Environment as recommended by the NPPF. It applies to the Chichester District Local Plan area.

The key objectives this strategy that may directly affect our study are to;

- *Promote the sustainable management of the historic environment;*
- *Identify the key issues and opportunities facing the historic environment ...;*
- *Identify the key priorities for action to improve the management of the historic environment;*
- *Promote a partnership approach to the management of the historic environment;*

Interesting observations;

The processes of historic land use and management and building craft traditions enshrined within the district's historic environment are what gives the area its local distinctiveness and special character;



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

There are many assets that are widely recognised for their heritage importance such as streetscape features .. and historic paving which... contribute significantly to the character or our city, towns, villages and the rural area.

BDP work

In 2005 West Sussex County Council, Chichester District Council, and Chichester City Council commissioned BDP to produce a Masterplan for the enhancement of the Public Realm within the pedestrianised parts of central Chichester. - September 2005 of the 'Chichester City Centre Public Realm and accessibility enhancement strategy' and the further publication in June 2008 of the following documents:

- i) Materials and Technical Specification.
- ii) Street Signage Specification.
- iii) Street Furniture Specification.

Whilst there remains some merit to these documents, the subsequent development of policies, strategies and appraisals combined with the challenges of cost, maintenance and heritage indicate a more holistic and collaborative response may be required.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

4. USAGE AND TRAFFICKING

The city centre pedestrian zone on North Street starts at the junction of St Peters Street. It is delimited by a gateway feature of natural stone paviers. The initial 30 m also permits access for disabled drivers and heavy goods vehicles (HGVs) for loading purposes. It appears that this area is well used by passenger cars under normal circumstances, but it is less clear whether HGVs also park in this area.

After the parking area there is a second gateway feature of natural stone paviers to denote the start of the main pedestrian zone.

It is understood that Chichester City Market normally occurs weekly and a Farmer's Market takes place twice a month, typically operating along North Street and East Street. The market traders' vehicles traffic the pedestrian areas (both the carriageway and footway) with rigid commercial vehicles, flatbed trucks and vans, all of which may be using tail lifts. Although these vehicles are not necessarily the most damaging types, their presence may be causing localised overloading, especially of the footways.

It is understood that a number of businesses have deliveries from HGVs on both North Street and East Street, notably:

- Boots – North Street
- West Cornwall Pasty Shop – North Street
- Greggs – North Street
- Next – using North Street as access to East Street (possibly due to narrow access to the store which is in the non-pedestrianised area of East Street)
- Most banks and building societies – North Street and East Street
- Refuse collection vehicles – North Street and East Street
- Various light vans and other vehicles for window cleaning, post collection etc.

For Next, it is unclear why the store is being accessed from the pedestrianised area and this would be worthy of further investigation.

It is also understood that a number of fully loaded scaffold lorries have trafficked the York stone footways (e.g. West Cornwall Pasty Shop) which have caused damage. It is likely that the former footway areas are only designed for very occasional heavy vehicle overrun and therefore these vehicles should be excluded from them wherever possible.

South Street from the junction with Chapel Street to West Street at the junction with Cooper Street forms a significant link in local bus routes with the following typical trafficking pattern:

- 30 buses per hour
- 23 of these are single decker and 7 are double decker
- Daytime frequencies (assumed to be from 8am to 6pm with significantly reduced frequency outside these times)



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

For South Street and West Street, a similar trafficking pattern of deliveries from HGVs is experienced, notably:

- Ecco – West Street
- Russel and Bromley – South Street
- Refuse collection vehicles – South Street and West Street
- Various light vans and other vehicles for window cleaning, post collection etc.

There have been reported incidents of coaches driving down North Street to East Street in peak times. However, it is assumed that these are isolated incidents and therefore could be considered as overloads in terms of pavements rather than a contribution to the standard traffic.

The South Street/West Street link therefore carries significantly higher commercial vehicle traffic when compared to North Street/East Street.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

5. WALKOVER SURVEY AND FINDINGS

LANDSCAPE & URBAN REALM KEY OBSERVATIONS;

There are many issues associated with the quality, finish, robustness, maintenances and repairs. Listed below are the most prevalent and significant in terms of impact on visual quality;



Lack of proper edgings or tree pit protection. Inappropriate street clutter / advertising

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Mortar joints / grouting beginning to fail. Yellow lines ineffective (and inappropriate, perhaps use zonal restrictions) Kerbs and channel failing.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



North Street from the junction of St Peters Street is the start of the pedestrian zone and is delimited by a gateway feature of natural stone paviors. The paviors appear well polished with some localised erosion of the jointing material. Flush granite kerbs are used to retain the paviors. The paviors are a rigid surface construction. The underlying construction is unknown.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



After the gateway there a car parking zone for disabled drivers that is approximately 30 m long and is currently surfaced with asphalt. The asphalt appears to be a very aged hot rolled asphalt containing gravel aggregate. The joints are quite open and there appear to be some failed asphalt patches. The gravel aggregate is well polished and is unlikely to be providing good skidding resistance (although the slow speed of vehicles in this area will mitigate this to a large degree).

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



The footways comprise York stone paving slabs of random size and laying pattern in a rigid surface¹, with varying width along the length of North Street. Many of the slabs are cracked and damaged, likely through vehicle overrun. The mortar joints have plucked out and numerous slabs are then beginning to rock and move due to the lack of restraint. Missing mortar also allows the ingress of moisture causing wash out of the structural layers below the slabs. In some instances, the cracked surface of the slab has spalled away leaving a depression.

¹ In this document, rigid surface refers to small element paviors and slabs laid on bedding mortar with mortared joints. Flexible surface refers to small element paviors laid on bedding sand with no mortar in the joints (sand brushed in).

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



The second gateway at the start of the main pedestrian zone has natural stone paviors in a rigid surface construction. Both of the gateway features have very wide mortar joints around the individual natural stone elements. The second gateway is followed by a strip of concrete paviors in a flexible surface construction (i.e. no mortar in the joints).

This is then followed by a red brick clay pavior in a rigid surface construction. The condition of the clay paviors is variable and there has been loss of mortar in many areas. This has allowed vegetation growth and led to cracking of individual paviors. There have been some localised mortar repairs an although they appear to be successful in retaining the paviors, some joints have been widened and the different coloured mortars look unsightly.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Slot drains blocking up, mortar failing, poor quality colour matching

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Clay / concrete paviors inappropriate in heart of conservation area. Mortar failing, poor quality matching in. It can be seen that temporary repairs have been undertaken using asphalt in some areas to backfill where the brick paviors have either been removed or have become dislodged.

Some individual paviors have become dislodged. It appears that in this example, a mortar repair has been carried out that has subsequently failed again. This type of piecemeal repair is very difficult to undertake successfully and is likely to lead to further future failures.

Some individual paviors have become dislodged. It appears that in this example, a mortar repair has been carried out that has subsequently failed again. This type of piecemeal repair is very difficult to undertake successfully and is likely to lead to further future failures.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Unacceptable patching in

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



'Test Area' . It would be good to understand the thought process behind the material choices - no obvious connection to context.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



This is a poor gateway feature, especially with the tarmac disabled parking area beyond. There is nothing especially noteworthy about the architecture here - Consider moving the gateway to the next pinch point and returning to more traditional carriageway to focus spend on the areas that will have most impact.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Crane Street leading off North Street is completely surfaced with York stone paving. It was evident in this area that reinstatement of the paving by Statutory Undertakers is not always completed to an acceptable standard. The mortar joints in this area are very wide and again there appears to be no colour matching of the mortar.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



There is a slot drain present along the former footway for much of North Street. It can be seen from the photograph that there is significant collection of detritus in the slot which will prevent the drain from functioning as intended. It is understood that this is a significant maintenance liability that would benefit from a longer-term solution to minimise whole-life costs.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Uninteresting and poor-quality street scene along Crane Street

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Poor material composition

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



The market cross, this is a key heritage asset. Radiating Octagonal paving causing issues with cuts and maintenance. Contractors clearly struggling to re-lay the stone correctly following repairs.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Where North Street meets East Street at the Cross, the paving type changes to a large element natural Purbeck limestone pavior laid in a radial pattern. Again, it is clear that reinstatement after street works have been undertaken is potentially causing issues (mortar width and colour matching). In general, the overall condition of the paving in this area is good.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Lots of small cuts, awkward angles and large joints to compensate workmanship issues. Likely to always be a problem unless high quality stone masons are used. It can be seen that asphalt has been used as a temporary reinstatement, whilst awaiting the full repair. It is also clear in the foreground that where the direction of paving changes or the type of paving element changes, the potential for defects increases.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



There have also been failures of the replacement mortar in this area. This has led to individual pavior units becoming loose with the risk of them being completely dislodged. The mortar was very friable. However, it is not possible to determine if the specification was inappropriate or if the material did not meet the specification.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



After the area around the cross, the pavement construction in East Street is similar to that is North street, with red clay paviors in the main carriageway area, flush granite kerbs and York stone paving in the footways. After the area around the cross, the pavement construction in East Street is similar to that is North street, with red clay paviors in the main carriageway area, flush granite kerbs and York stone paving in the footways.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



East Street street scene is lacking in interest and quality. It needs softening, greening and low quality materials should be replaced.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



It would be good to understand the rationale behind bench placements. This should be a real 'gateway' into the historic center but currently not delivering on any sense of arrival.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Strange emphasis given to the north south crossroads, when attention and importance should be given to the cross. Need to reconsider hierarchy of materials. Note the extensive tarmac patching.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Note use of channels. Cycle hoops installed so only 1 side is accessible. Interest created by art works alone - no sign of any vegetation in this scene or focal point, yet feels a higher quality the East Street.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Tree health likely to suffer, eclectic use of materials. Tree roots pulling up paving due to insufficient rooting volume and medium. Lot of clutter. It would be good to understand how these trees were planted and scope for improving the rooting medium.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



Given the proximity of these two fantastic heritage assets it is strange that they do not feel connected at all. The street scene, materials choice and mature planting visually separate the two. A real missed opportunity. When standing at the cross looking to the Cathedral, you can just see the top of the spire.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed



As noted in Section 4, the area of South Street and West Street covered by this study experience relatively high volumes of passenger service vehicle (PSV) traffic. The main carriageway area is surfaced a relatively modern clay pavior in a flexible type construction (i.e. no mortar). Although this construction type can be used for such higher trafficked areas, maintenance costs tend to be higher due to loss of jointing sand. There is no positive drainage below the paviers which allows the bedding sand to become saturated. This has resulted in the paviers moving in the past. That said, the paving is generally in reasonable condition apart from some isolated defects that are discussed in Section 6.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

The use of a standard block paviors in this, the most historic part of the city, is not appropriate and does not respect the curtilage of this heritage asset. It would be advisable to review bus routes / movements to ensure that the legal obligation to protect this asset is properly addressed



The heritage status and importance of the cathedral is not reflected at all in the street scene. A real placemaking opportunity is being missed here.

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

6. SITE SPECIFIC ISSUES FOR SOUTH AND WEST STREETS

There are there specific areas in South/West Street that have existing defects. The least serious defect is adjacent to the kerb outside Russel and Bromley. It can be seen that an alternative bond pattern has been used in this area. It was also observed that this was regularly over-run by buses. It is unclear whether the laying pattern is to accommodate the alignment or was changed as a result of a previous defect. However, what can be seen is that further depressions and pavior movement has occurred. Where paviers are cut to fit the radius of the curve, they are more likely crack and become dislodged.



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

The second defect is on West Street, running transversely across the road pavement outside the Dolphin and Anchor Public House. This appears to be either an historic utility trench or a collapsed pipe beneath the road surface. The defect is not visible in the May 2018 Google Image. It can be seen that the paviors have moved and that bedding sand and other fine material has pumped to the surface.



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

The third defect area is on South Street and is understood to be as a result of an opening made by Southern Gas Networks (SGN). The pavement has been reinstated but there has been subsequent settlement, movement and cracking of the paviers. This is likely to be caused by inadequate bearing capacity of the lower pavement layers. Trafficking by the buses is clearly exacerbating the issue.

From discussions with WSCC (Shaun Prior) it is understood that SGN installed a Type 4 carriageway construction over the shallow main with approximately 400mm cover. This reinstatement failed within the defect period, and WSCC requested that the next reinstatement included lean concrete in the structural layers to prevent future issues. However, this repair has now also failed.

Lean concrete requires time to gain strength and if the buses were allowed to continue trafficking the reinstated area before sufficient strength gain has occurred, it is likely that the lean concrete has now reverted to behaving as a granular material.



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

7. NOTES FROM CONVERSATIONS / EMAILS WITH KEY OFFICERS

To assist in informing the review of the Chichester City Centre Pavements a number of WSCC officers and stakeholders were contacted, by email or telephone calls are set out in the table below.

Name	Organisation	Key Comments and Concerns	Location of Feedback
Chris Dye	WSCC	Key Issues are listed in Section 2 and formed the basis for the Stage 1 review brief – Chris also provided Highway Inspectors Handbook and previous BDP study work	(Appendix A section 1)
Kevin Macknay	WSCC	Kevin had worked on the previous BDP Study and provided the WSCC historic outcome of the Pavement Review and Specification at the time	(Appendix A section 2)
Shaun Prior	WSCC Street Works Inspector	Shaun is Utilities Street works Inspector and was able to provide feedback on current issues and concerns	(Appendix A section 3)
Paul Ferroni	WSCC Highway Inspections	Paul is Area Manager for Highways and has oversight of the maintenance issues on Chichester City Centre	(Appendix A section 4)
Jeanette Hockley	ChichesterBID	(In lieu of Colin Hicks no longer involved) Provided helpful information on uses of the area and is part of	(Appendix A section 5)
Andy Howard	Chichester DC – Waste Ops Manager	Andy oversees the street cleansing team at CDC for across the District	(Appendix A section 6)

There were common themes to the responses received around:

- the safety of users of the space (trips and slips);
- continuing damage to the pavements from various sources (notably from trafficking, cleaning and Utility works), and;
- challenge of maintaining the aging pavements (which are now over 40 years old in places).



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

Appendix A – Feedback Notes

Name	Key Comments and Concerns
Chris Dye Section 1	<ul style="list-style-type: none"> • CD outlined that in the last few years WSCC has received an increasing number of complaints about the condition of the “Precinct” in terms of its maintenance condition and an increase in trips and slips reported. • There has been an increase in “multi-use activity” of the areas through the City Centre Markets leading to increased mechanical cleaning, OGV loading as well as the occasional HGV delivery loading - albeit these are small figures they are disproportional in their impact and also traffic over footway areas so they don’t block the “through route”. • The feeling from Public and Councillors is that WSCC is not doing enough to manage and maintain the spaces • The coverage of the area of investigation is shown on the attached mapping extract from County Mapping, main roads are “pedestrian areas” on East Street, North Street, South Street and West Street plus Crane Street • The existing Yorkstone dates from around the 1970’s so is not necessarily “historic” within the Conservation areas, the red paviers are not as old and the layout still identifies the “through” route between East Street and North Street with South Street to West Street still a bus route (Alex S prepared the original scheme so he has background knowledge) • The historic BDP works (including the test panel on North Street outside Paperchase) could be very expensive (estimated at £5m in 2010 so would be vastly more expensive now) and WSCC budgets cannot accommodate this level of change • A key factor is the “Fabric of the Highway” • CD outlined that WSCC has very little time to get the quality of the repairs as they would prefer, mostly because they get trafficked and swept almost immediately and that there are problems with Utility reinstatements (SGN on South Street was given as an example) • There are problems of the Yorkstone cracking in the footway areas (where it gets driven over) and WSCC undertake a lot of reactive safety “pointing and reseating” and they target a lot of areas but there are continual and increasing failures • CD questioned whether the currently materials are still “fit for purpose” given the level and type of use? • Some of the current thinking is around: <ul style="list-style-type: none"> ○ Replacing red paviers with red HRA ○ Does it need to be a natural stone ○ Could it be a screed surface ○ Keep current “running lanes”

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

	<ul style="list-style-type: none"> ○ Consider Conservation area but materials palette not driven by this (reduced maintenance led key approach) • Cost issues (initial change and long term maintenance) will need to be considered in the OA – AS was indicating a “Low / Medium / High” cost intervention approach • Greening and Urban Realm street furniture is a lower priority at this stage (although might be good to mention for controlling vehicles) • In terms of drainage – lots of historic slot drains, cleaning is a key issue (especially outside places on West Street by department store, along South Street by Tesco) • CD said nothing specific / fundamental comes to mind on drainage / ponding issues other than clearing the existing slots – within the budget there will be no monies for a detailed drainage survey • One consideration might be changing tops of slots / local overhauls where it might be necessary (check with WSCC officers on current cleaning arrangements and frequency – could this be enhanced / more regular?) • Utilities was discussed and these are seen as a big problem, even if new works are completed and protected (S58?), this only provides a limited number of years protection and does not protect against new connections and emergencies which can override this clause • CD’s first thoughts were about designing a scheme / use of materials palette which allow easier reinstatement by Utility – how could the pavement form make this easier? • Can “panels or sections” type layout be used such that a Utility would have to “replace” a whole “panel” rather than trenches? • Bus route is likely to stay as is – CD feeling that pavement needs to remain “flexible” in the bus areas (South Street and West Street) consideration of impact of buses needs to be included • SR had undertaken a quick review of Bus / Pedestrian accidents of which there have been none in the last 5 years and previous to this only 4 between 2007 and 2013 • However, CD did mention poor Stagecoach driver behaviours cutting the corner by Russell and Bromley (from South Street into West Street and mounting the footway which is a cause for concern
<p>Kevin Macknay Section 2</p>	<ul style="list-style-type: none"> • Review at the time with BDP and Halcrow over similar failures in the paving in Southampton City Centre • There is no positive drainage below the blocks on South and West streets so nothing drains the sand layer and over time water seeps in and the blocks start to move • HGV which go through the area are slow and also turning on the paving causing damage, some park on footway areas to allow other HGVs to pass and this damages Yorkstone



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

	<ul style="list-style-type: none"> • Narrow slot drains are an issue in terms of keeping clean, but replacement with more modern equivalents would be very expensive – would a permeable pavement be more suitable, with modern materials and equipment? • Some areas have already had new paving provided, generally inline with the BDP approach, these are: <ul style="list-style-type: none"> ○ Eastgate Square / Market Avenue (Developer) ○ M&S Car Park (CDC) ○ St Martin’s Square (CDC) • The above areas circa 10 years old and holding up well, not showing signs of wear / movement • At Modern Art Galley “Pallant House” CDC used “Indian Purbeck” stone which was thinner than proposed and this has cracked extensively • BDP were of the view that where vehicles could run the surface should be “Black” but this was not supported by CDC which preferred red • The BDP design allowed for more Uniform approach to laying out Yorkstone so that it would be easier to manage utilities and service access “banded” by stone size • The area around the Chichester Cross was “Purbeck” set out in “bays” but delineations are not “hard” edged • BDP approach and Specification was presented to Cllr but never fully agreed, hence still draft • The Option 3 of re-using the Yorkstone but sorting by size and thickness was the final suggestion <ul style="list-style-type: none"> • An opinion survey was completed and this informed the trial panel specification, the panel is made of a variety of materials to gather view. • The “liquid” joint material was specifically “piped” into the joints on the panel which is why it has not plucked out under mechanical cleaning. • Suggested FN Conway have laid vast areas of similar approach paving in London, Kingston and Richmond and that it is working well • If looking at phasing would be worried about consistency of workmanship and materials especially if big gaps between works and separate tenders • The test panel constructed as per detailed specification, including bedding and joint materials • Mechanical damage to joints is clear from review on site, key issue is plucking out of sand and water ingress, plus loosening of the stones (movement then allows further deterioration)
--	--

Shaun Prior Section 3	<ul style="list-style-type: none"> • Material matching (colour and form) is a big issue with some materials discontinued (re paviors) – usually Utility contacts Shaun to request WSCC input on replacement materials (which puts onus on WSCC) • Yorkstone (Slabs and Paviors) are able to source in UK and usually the Utility gets a pallet delivered
--------------------------	--

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

- Sometimes it is difficult to source imported materials (mentioned China)
- There is less emphasis on colour matching mortar (so difficult to do) and more on the actual structural integrity of the reinstatement
- Workmanship can be variable, experience of the reinstatement sub-contractor (and also how much fee they might have) can affect the quality of the reinstatement but WSCC do defect within the criteria of the SROH
- This was apparent on projects for “Cable” installations (particularly BT) whereas some SSE installations have had “Derkins” as reinstatements and they have been very good
- For trenches / openings less than 1.5m a 2-year warranty is required
- For trenches / openings greater than 1.5m a 3-year warranty is required
- In Shaun’s experience one of the mechanisms for failure is damage by vans and lorries displacing the stones / paviors and loosening the mortar for the road sweepers to then continue “plucking” at the loose joint causing it to fail – this then loosens the pavior / flags more and so the process continues
- There have been a number of fully loaded scaffold lorries on the York stone (around Cornish Pasty shop) which have damaged the flags
- On **East Street** there are square cut sandstone flags around the St Pancras / East Street area which are tight jointed and are difficult to excavate and relay

South Street SGN

- SGN installed a Type 4 C/Way Construction over a shallow main (approx. 400mm cover)
- When this had deflected, WSCC requested next reinstatement included some lean mix to stiffen the base, but this also failed
- Main issue is the frequency of double decker buses running over the failed area (the work was actually a launch / reception pit for a PE liner to an old Cast Iron main) and that time for repair to “bed in” was overshadowed by constant running over
- In Waterlooovile there was a similar issue and red HRA 30/14 plus red chippings was used to reduce the problem
- There have been two further visits by SGN to fix the problem, WSCC can keep defecting but it is not really in the “spirit” of the Act to keep this going – needs a more permanent solution
- If a reinstatement is defected (but not dangerous) there is a further inspection after 28 days (D3) for which an additional payment can be charged, but the process of finalising a defect can go on for years
- For “dangerous” reinstatements (those deemed by Inspector after completing a Risk Assessment) there is a 2 hour call out
- There is a difference between Streetworks defect and WSCC Safety Plus defects allowance (WSP to check these) and Area Managers issue Inspectors with a “Handbook” (WSP to get copy)



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

	<ul style="list-style-type: none"> • The Inspectors do have meetings with the Utilities, but these tend to be on direct site related issues during the works – if something is more of a “continuous” problem then it is usual that the Utility / Contractors are called to a meeting with WSCC Senior Managers • Shaun was of the opinion that seeking to use “Marshalls” products that are easily available at local stockists around Chichester would help Utilities contractors and save money and time • Shaun could not comment on the number of claims (for trips and falls) on North and East Streets but felt these must be high (and others “jumping on the band wagon”) but felt that there is little co-ordination between WSCC departments on these claims
<p>Paul Ferroni Section 4</p>	<ul style="list-style-type: none"> • Lots of claims for slips, trips and falls – although not all require compensation, they do tie-up lots of officer time and investigations • “Riven” surface (East Street and Cross Street) light colour, natural stone, blue granite setts and Yorkstone setts around cross get complaints that hard for elder to walk on (uneven and rough) • Slot drains very narrow, hard to keep clean and block easily, do sometimes have surface water ponding issues – had to partially re-build collapsed area Crane Street / North Street in last couple of years – problem is that they have to blast water down the slots and this causes all the muck to be sprayed everywhere so can only be done when areas are quite (which they never are) • Have to take care around the Chichester Cross – any works near the building need Historic England approval as there are sensitive and historic buried foundations/structures – also vibrations levels around the cross have to be controlled as it is a sensitive structure to vibration (and potential cracking) • Slabs were laid on “wet” concrete in the 1970’s and now experiencing this breaking up • Original “red” paviers are Imperial sized but can’t get these colour match and only in metric sizes so this affects jointing • An additive is added to the mortar to provide some flexibility to pavement, otherwise it would act as a large panel and distort from expansion and contraction • Mechanical sweeping on the pavements is a real problem for the joints (sometimes a repair is made and coned off and the cones moved to allow cleaning which damages the joints) • Inspections are done every 28 days and there are always repairs each month – Paul will provide details for the last twelve months – also some large “lump sums” of funding have been provided over the years for more extensive repairs – the construction is over 40 years old – worn out – PF thinks maintenance is increasing on the pavements

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

	<ul style="list-style-type: none"> • Because the main routes are “Fire Paths” they were supposed to be trafficked, but they get a lot of delivery and market trafficking over the old footway areas which can’t take the loading and crack • BB due safety repairs – WSCC have introduced an audit from 1st April 2020 (new contract) which is: <ul style="list-style-type: none"> ▪ Photo taken of area before repair ▪ Photo taken after repair ▪ Every repair is checked (desktop) against before / after and repair type requested ▪ Getting about 4% failure rate which can be tracked to each gang ▪ Failures can be challenged by BB but mostly they go and re-do the repair ▪ Mostly BB use their own teams, can assist in gang training or cross knowledge between teams ▪ WSCC / BB meet regularly to discuss – still early days and only been possible as other workloads have slacked off (due to impacts of COVID-19) • Mentioned previous investigation report prepared by Kevin Macknay at WSCC (SDR to follow up) • The panel that was put in is much smoother and seems to have lasted quite well • Also historically talked about “blacktop” materials but not everyone in favour, but would be a lot easier to maintain and manage • PF also provided some maintenance spend for 2019-2020 on reactive repairs and larger maintenance allocations for the year, totalling around £60k
<p>Jeanette Hockley Section 5</p>	<p>How often does the Market take place, typically, between what times and what types of vehicles (size / weight) do the traders use?</p> <ul style="list-style-type: none"> • Under normal circumstances pre Covid19 the Farmers Market would take place in the city centre every 1st and 3rd Friday of the month • The City Market is present once a week, every Wednesday • All markets are licenced by CDC – Laurence Foord, please speak to him re other types of markets that would take place, but not a regular basis • Rigid commercials, Flatbeds, Vans with or without tail lifts and light commercial vehicles are used by all market traders <p>For store / shop deliveries, do you have any information on which stores / cafés / food outlets bring vehicles onto the East Street, North Street (and Crane Street, although this is less likely given it is closed at the end by bollards) precinct areas, how often and what size (especially any articulated vehicles)?</p> <ul style="list-style-type: none"> • Boots – North Street • West Cornwall Pasty Shop – North Street • Greggs – North Street

TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

- Next – North Street – Articulated lorry – Using as a cut through to East Street
- Most Banks and building Societies – Security 4 – large vans – everyday
- Window cleaners – numerous shops – most week days
- Sanitising equipment/stores personal toilets etc – numerous stores – most days
- Post Office vans 5 days a week
- Bins Collections – Biffa, Aeolia once or twice a week
- CDC sweeper and refuse collection – few times a week
- Rigid commercials, Flatbeds, Vans with or without tail lifts and light commercial vehicles are used by all market traders

The BID do not have firm information on deliveries in the city centre, this is from what we personally witness over a period of time. Most stores are pretty good at using their back entrances for deliveries.

For store / shop deliveries, do you have any information on which stores / cafés / food outlets bring vehicles onto the South Street and West Street, how often and what size (especially any articulated vehicles)?

- Bins Collections – Biffa, Aeolia once or twice a week
- Window cleaners – numerous shops – most week days
- Sanitising equipment/stores personal toilets etc – numerous stores – most days
- Post Office van 5 days a week
- Deliveries for likes of Wagamama, Pizza Express, Wahaca, Ecco, Russell & Bromley and many more – these do vary and not every day. There are more stores/restaurants that have deliveries and pickups because it is quite easy to pull up and unload and collect.
- Rigid commercials, Flatbeds, Vans with or without tail lifts and light commercial vehicles are used by all market traders

From your perspective, what are the key areas where there are problems with the current surfaces? Do you see the vehicle trafficking (perhaps on to areas outside of the “old roadways”) and / or Utility reinstatements as a key issue (or both of course)?

- North & East Street pedestrian area in the city centre (Red bricks and York Stone)
- South Street - York Stone pavement and red bricks on road
- West Street - York Stone pavement and red bricks on road

Any general comments / observations would be most welcome.



TECHNICAL NOTE

DATE:	24 July 2020	CONFIDENTIALITY:	Internal
SUBJECT:	Stage 1 Review Note Rev A		
PROJECT:	Chichester Pavements Review	AUTHOR:	Donna James, Joe Harries and Stephen Reed
CHECKED:	Stephen Reed	APPROVED:	Stephen Reed

	<ul style="list-style-type: none"> Chichester BID have experienced coaches driving down North Street to East Street in peak times, this does not happen too often thank goodness. But mainly from a safety aspect we feel a barrier needs to be implemented at the top of the pedestrian sections of North Street and the bottom of East Street to stop cars, vans etc flouting highway laws to drive into the pedestrian centre as and when they like. This would also stop large heavy vehicles being driven onto heritage York paving and red brick, causing very expensive damage.
Andy Howard	<ul style="list-style-type: none"> Team cleans across the District For City Centre they clean on a daily basis using: <ul style="list-style-type: none"> Compact sweeper 2 Operatives with barrows litter pick and sweeping Operative with 3 ½ tonne caged vehicle 2-3 runs a day bin emptying Occasionally use a larger mechanic sweeper for heavy cleaning “Glutten” electric hoover for extracting cigarette butts from between the joints Problems with cracks in joints trapping waste and litter Do sometimes have danger of sucking up mortar and small lumps of stone from the slabs Problems with Sap from trees and Slime in shady areas Use steam lance for removing chewing gum (not pressure washer) as it is more targeted Surface colour of materials a big worry for Andy in terms of staining (and tyre marking) Light colours particularly a problem (Bognor High Street example) as staining is not a “street cleaning” requirement but they get complaints so end up having to do deep cleans, especially a problem with icecream and cappuccino spills this usually means pressure washing Eastergate end has been deep cleaned by compact sweeper leaves tyre marks Bognor exit from train station beige “tarmac” no grey and stained Red pavements are fine and have few problems with them Yorkstone bit more hit-and-miss especially in summer months when staining is the big issue, team know they have to have “light” touch because of potential for damage and joint issues

A large red geometric shape, resembling a stylized arrow or a large 'B' rotated 90 degrees, is positioned on the left side of the slide. It points towards the right, framing the text.

Appendix B
STAKEHOLDER PRESENTATION
21st January 2021

Chichester City Centre Public Realm Review

Stage 2 Presentation



PLANNING BACKGROUND

Local Plan, the 2029 vision Chichester will be a place where people can:

- *Enjoy a vibrant historic city, thriving towns and villages and areas of attractive, accessible and unspoilt harbours, coast and countryside;*
- *Have a quality of life that is enriched through opportunities to enjoy our local culture, arts and a conserved and enhanced heritage;*
- *The conservation and enhancement of the historic environment, the high quality landscapes and the agricultural and other rural activities that support it will remain paramount.*

Heritage & Character appraisal review The headline information relating to the legally enforceable study is;

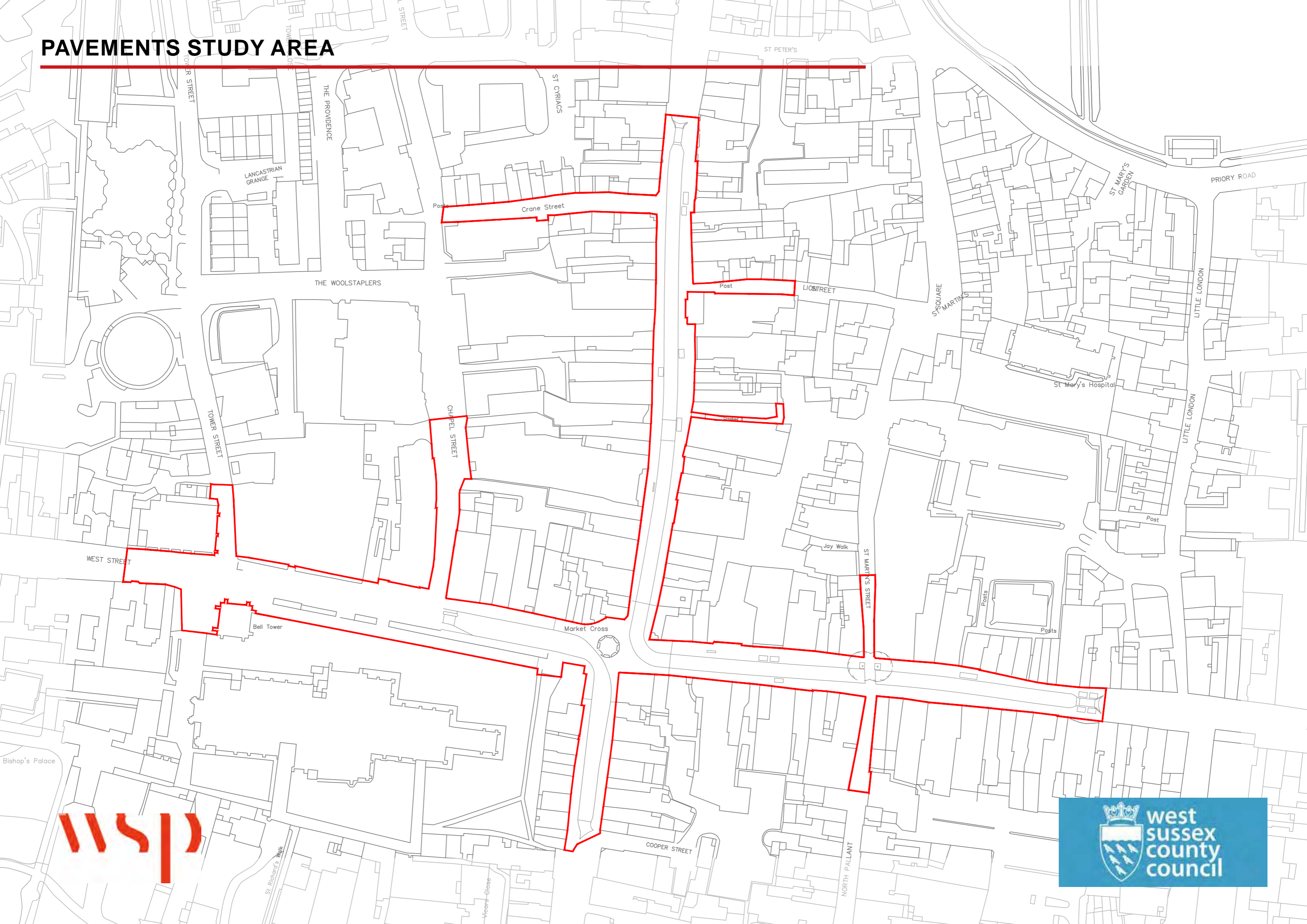
- The study area lies within the Chichester Conservation Area “the county town of West Sussex and one of the country’s best-preserved historic cities”
- There are numerous views of the Cathedral spire which can be seen from all directions [and are] important to the character and appreciation of the Conservation Area.
- The Market Cross is the second most important focal point in the City, situated as it is on the crossing point of the four principal streets
- Various studies have been undertaken into Chichester’s public realm...we need to..create an overarching Public Realm Strategy for Chichester
- a number of stone flagged streets, which must be protected.....and repaired as necessary, using traditional techniques and materials.
- Requirement for a public realm strategy which can then be used to attract CIL finance to fund Implementation of improvements.

Chichester ‘Historic Environment Strategy and Action Plan’ review Key objectives

- Promote the sustainable management of the historic environment;
- Identify the key issues and opportunities facing the historic environment
- Identify the key priorities for action to improve the management of the historic environment;
- Promote a partnership approach to the management of the historic environment;



PAVEMENTS STUDY AREA



KEY HERITAGE ASSETS

- The entire study area sits within the Chichester Conservation Area with the majority of buildings having attractive historic features & heritage value.
- Of utmost priority should be to improve & maximise the setting around the Cathedral & Market Cross
- Areas around other key heritage buildings such as The Bell Tower, St Olav's Church, The Council House & The Buttermarket should then follow



CHICHESTER CATHEDRAL



MARKET CROSS



THE COUNCIL HOUSE



THE BELL TOWER



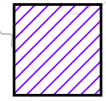
THE BUTTERMARKE



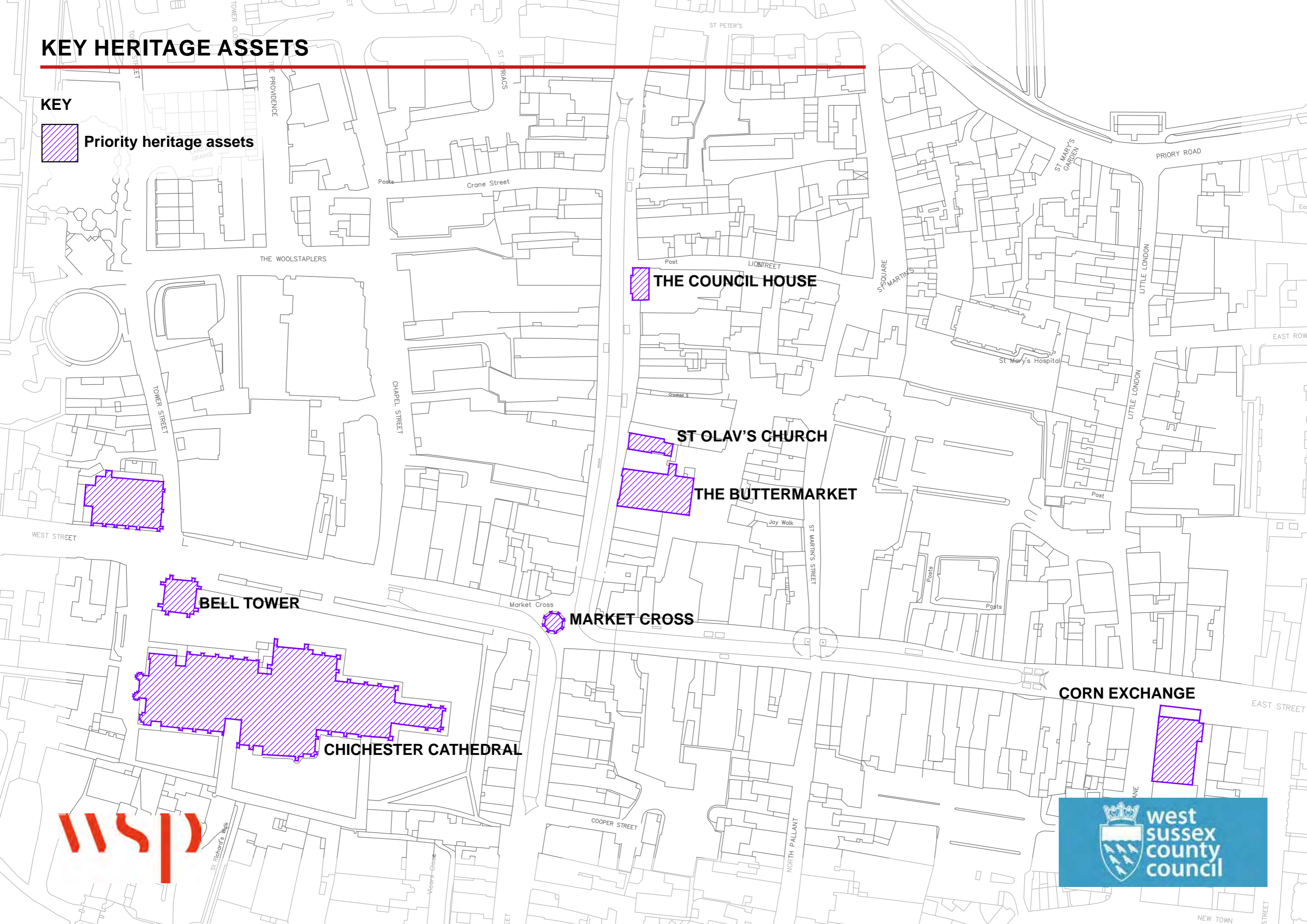
ST OLAV'S CHURCH

KEY HERITAGE ASSETS

KEY



Priority heritage assets



THE COUNCIL HOUSE

ST OLAV'S CHURCH

THE BUTTERMARKE

MARKET CROSS

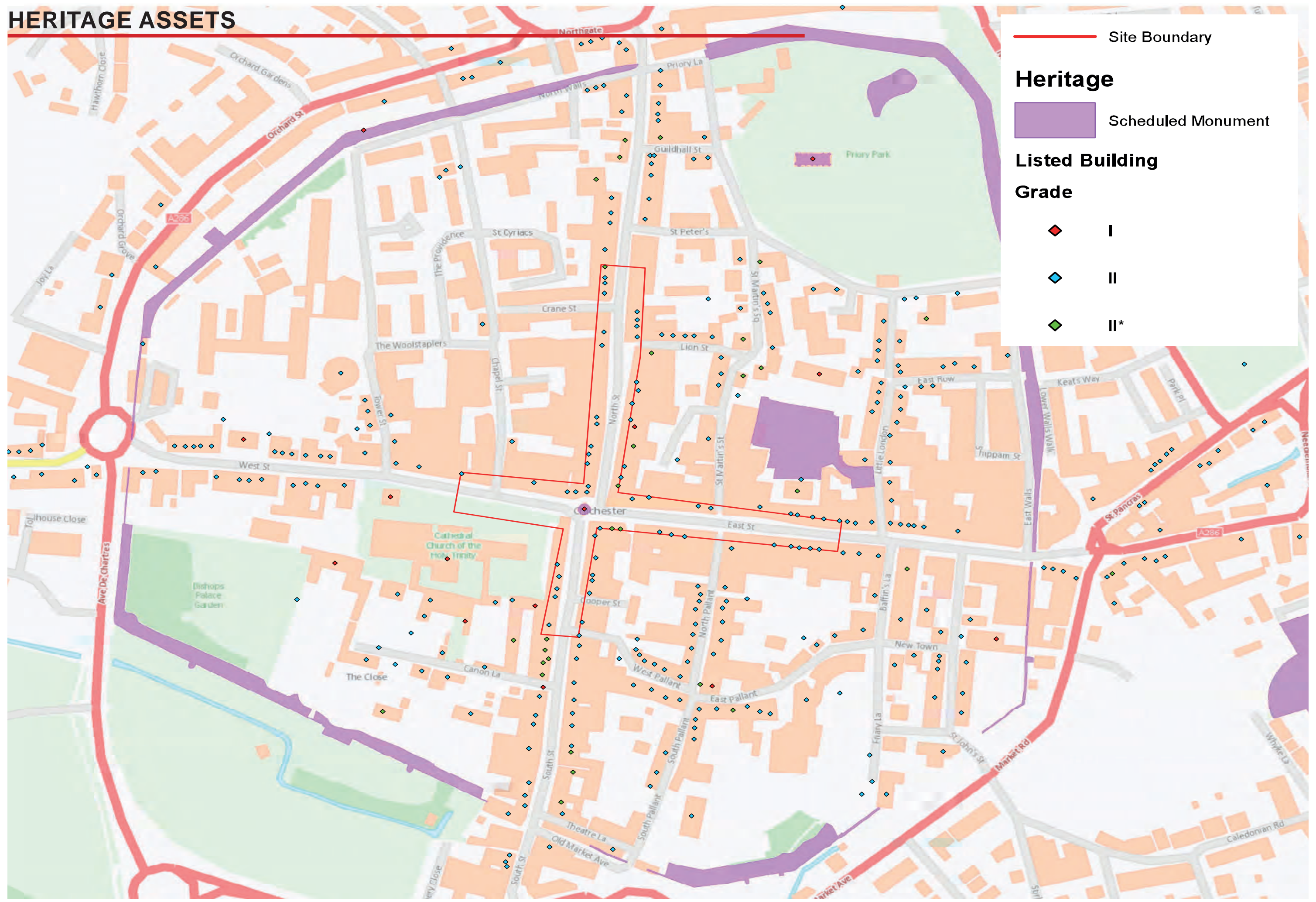
BELL TOWER

CHICHESTER CATHEDRAL

CORN EXCHANGE



HERITAGE ASSETS



— Site Boundary

Heritage

■ Scheduled Monument

Listed Building

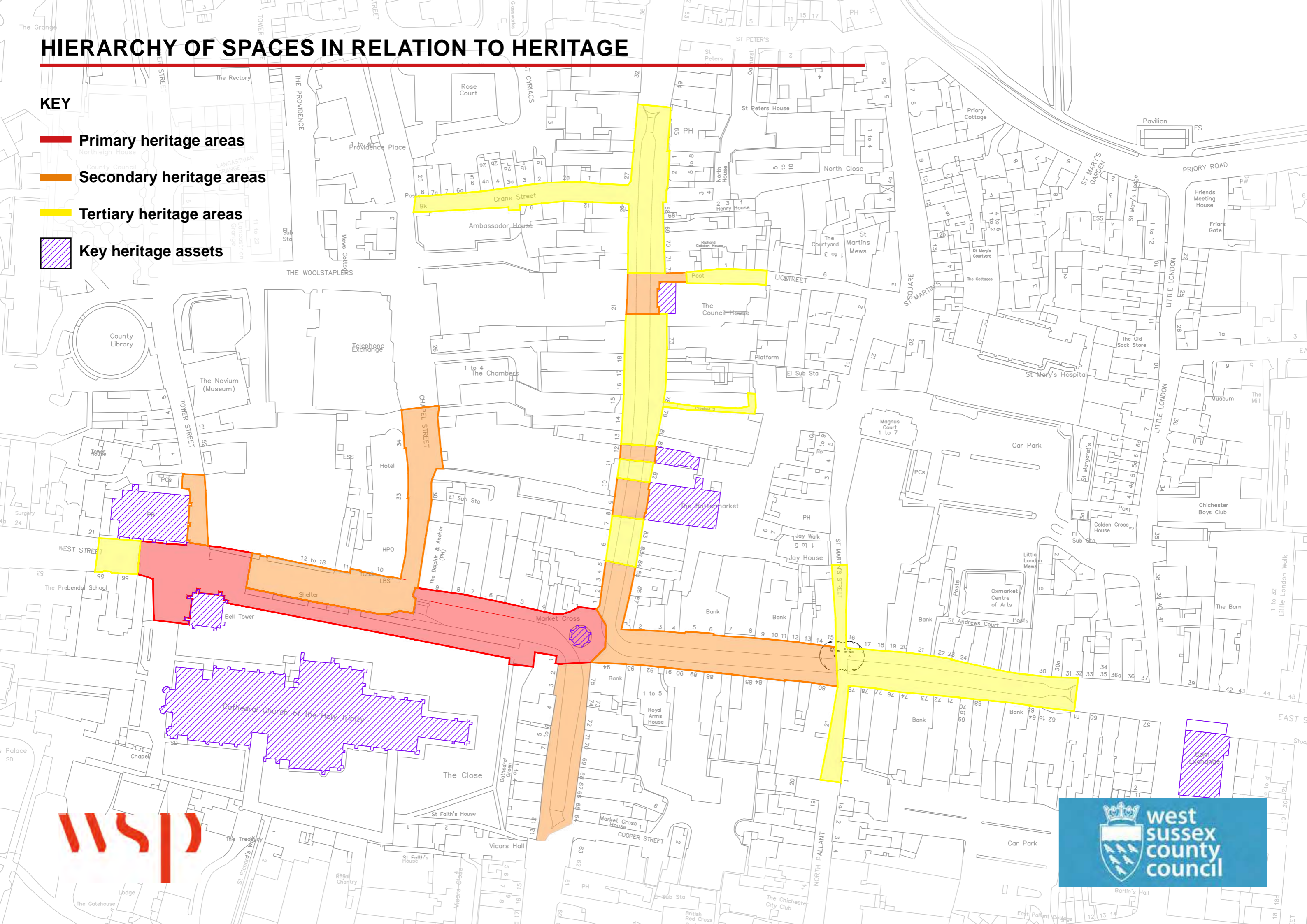
Grade

- ◆ I
- ◆ II
- ◆ II*

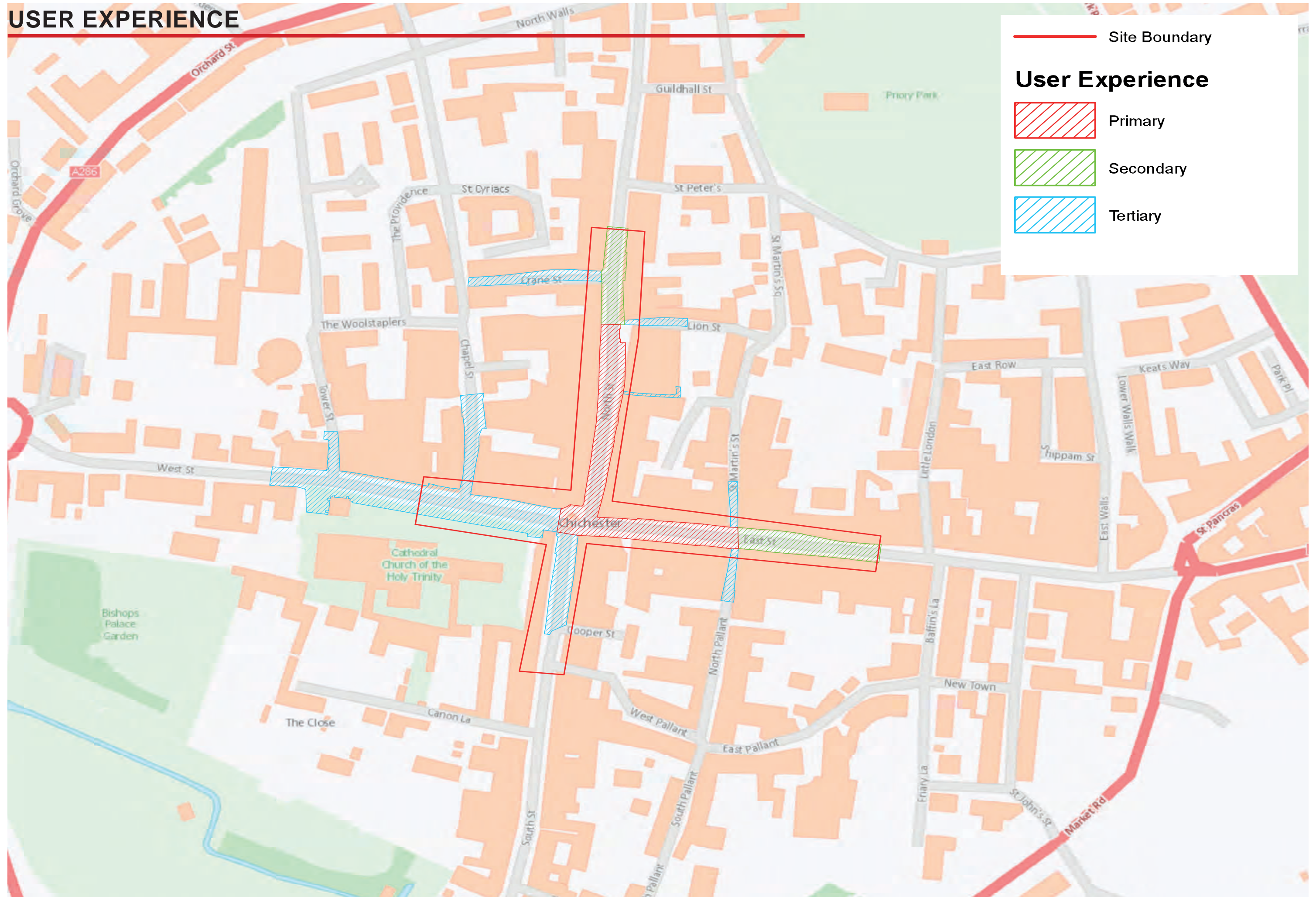
HIERARCHY OF SPACES IN RELATION TO HERITAGE

KEY

-  Primary heritage areas
-  Secondary heritage areas
-  Tertiary heritage areas
-  Key heritage assets



USER EXPERIENCE



— Site Boundary

User Experience

Primary

Secondary

Tertiary

EXISTING STREET FINISHES

- Very wide range of surfacing types
- Historic footway and carriageway construction
- Now largely pedestrianised
- Vehicular traffic for deliveries, market stallholders, scaffold lorries



EXISTING PAVEMENT MAINTENANCE ISSUES

Relatively high number of interventions under Safety Plus inspections



Reinstatements for utilities
- Functional but not necessarily maintaining the aesthetics
- Possibly leading to disturbance and future defects

Heavy loading along the bus route contributes to failings in the clay pavements which are hard to maintain without causing disruption to traffic



Areas used for the market are also exposed to heavier use / vehicle overrun which should be considered in the design of the paving



Bad patching & increasing joint widths have been caused by the numerous necessary repairs



Vehicle overrun to slab paving is causing cracked slabs, chipped edges, rocking slabs & trip hazards

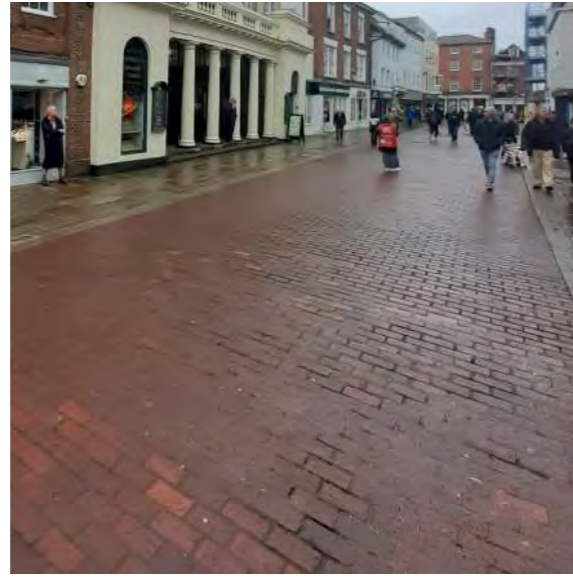
Cracking slabs are often evident in front of properties which require heavy deliveries eg in front of pubs



EXISTING HARD LANDSCAPE MATERIALS



York stone slabs to most footways



Red clay paviours to North St & East St carriageways



Red clay paviours laid herringbone to bus route



Purbeck setts around Market Cross



Blue granite setts to gateways to pedestrian zones



Buff paviours to gateways to pedestrian zones



Trial panel on North St



Tumbled light grey granite setts to furniture areas on North St & East St

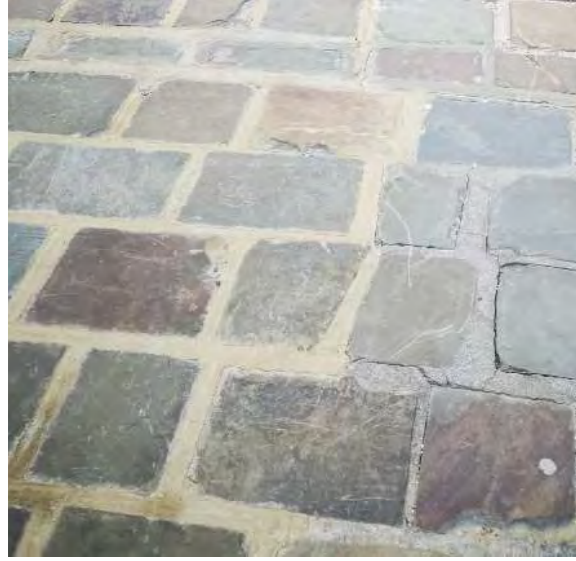


Concrete slabs & asphalt to West Street



Concrete slabs around Cathedral grounds

HARD LANDSCAPE MATERIALS - POTENTIAL MATERIALS FOR REUSE



Purbeck setts would be a prime material to be lifted & relaid, in the existing location or elsewhere, on it's own or combined with new paving materials. Colour palette would work well combined with new porphyry or yorkstone / sandstone units



A number of the existing yorkstone slabs could also be lifted and relaid.



Red clay paviours could potentially be reused in areas of lesser heritage value




NORTH STREET HISTORIC PAVEMENT CONFIGURATION

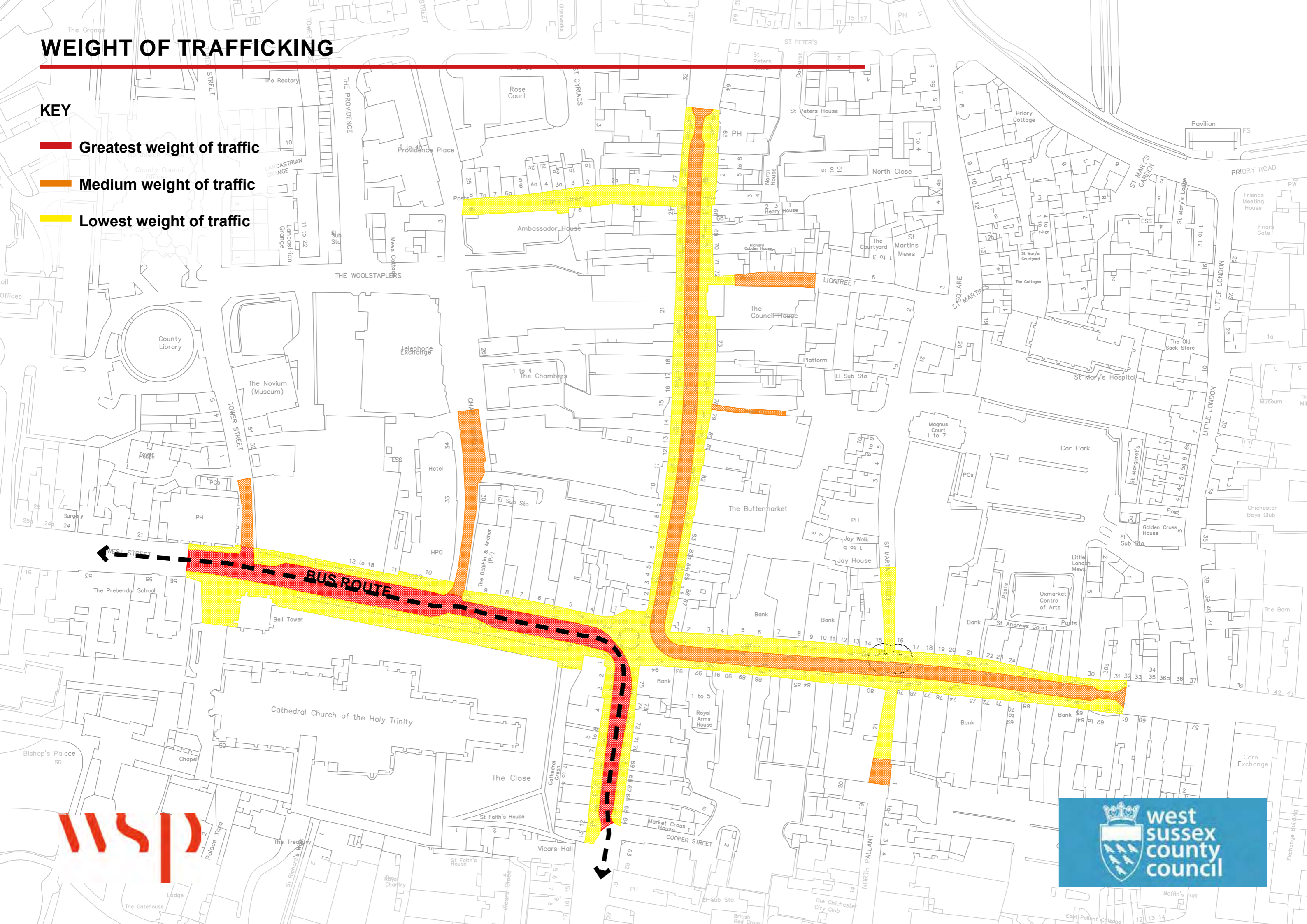
- Historic footway areas likely to be very thin construction
 - More susceptible to damage from vehicles
 - York stone slab elements also more susceptible to damage from vehicles
- Main carriageway area likely to be a thicker construction
 - Better suited to vehicular traffic
 - Small element pavers also better at distributing traffic loads
 - Trade off between “rigid” construction with mortar bedding and joints (North Street and East Street) and “flexible” construction with sand bedding and joints (South Street and West Street)



WEIGHT OF TRAFFICKING

KEY

-  Greatest weight of traffic
-  Medium weight of traffic
-  Lowest weight of traffic



OVERUN ISSUES

KEY



Existing bollards



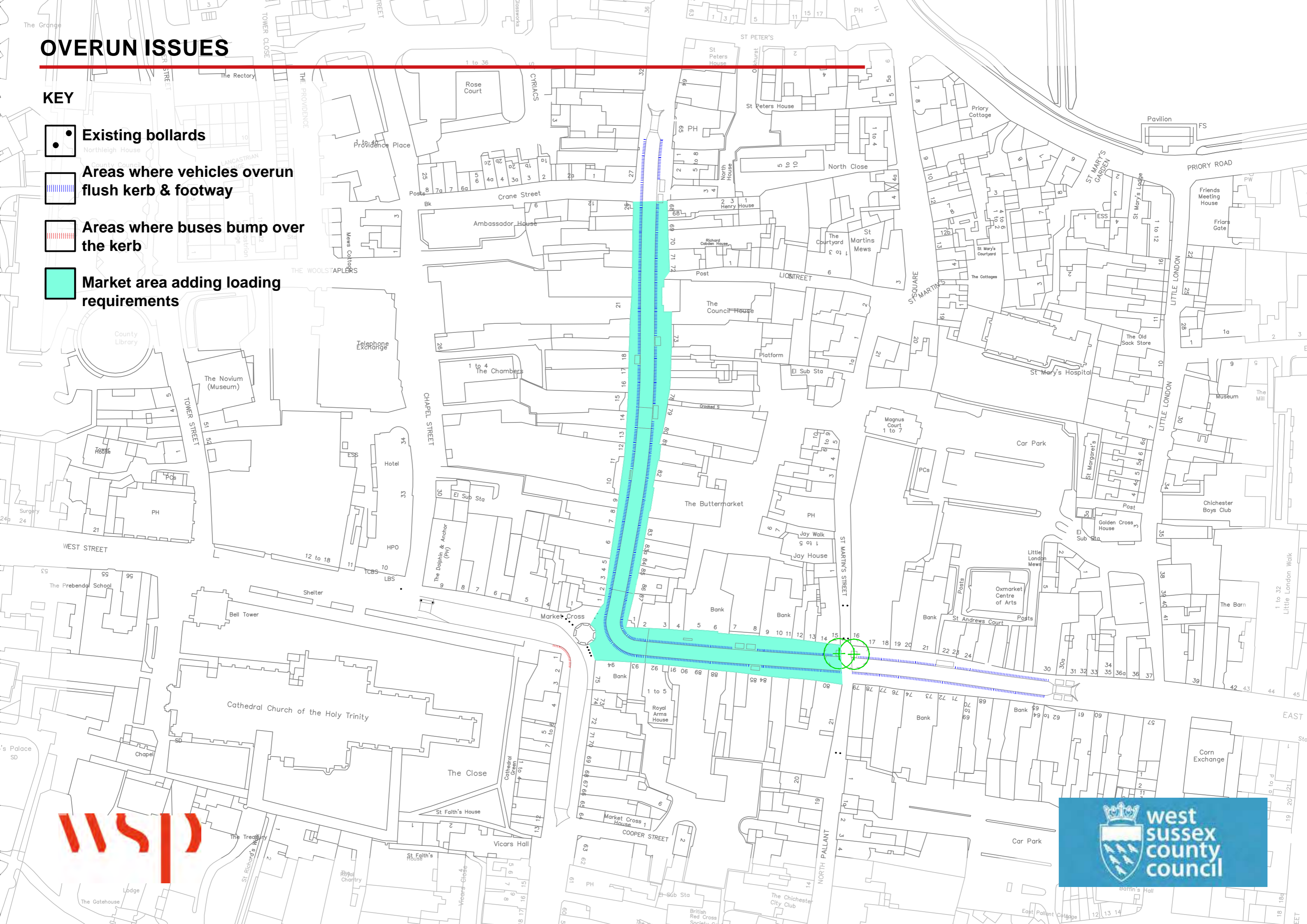
Areas where vehicles overrun flush kerb & footway



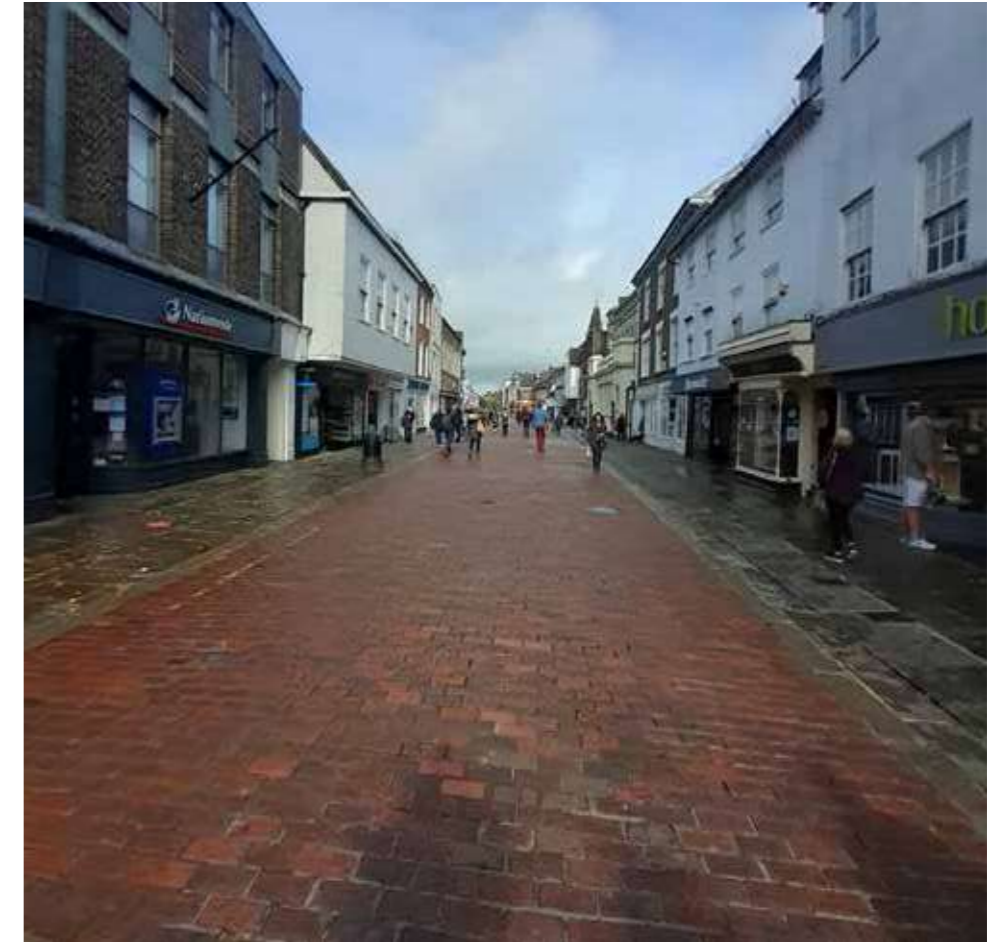
Areas where buses bump over the kerb



Market area adding loading requirements



DATA ANALYSIS



ANALYSIS OF SAFETY PLUS DATA

- Highest density around Market Cross and North Street
- Consistent pattern over time
- Location information probably not accurate enough to determine whether vehicular traffic is contributory factor at Market Cross



SAFETY PLUS DEFECTS - ALL YEARS

Key

Date Recorded

- 2015
- 2016
- 2017
- 2018
- 2019
- 2020



SAFETY PLUS DEFECTS 2015



SAFETY PLUS DEFECTS 2016



SAFETY PLUS DEFECTS 2017



SAFETY PLUS DEFECTS 2018



SAFETY PLUS DEFECTS 2019

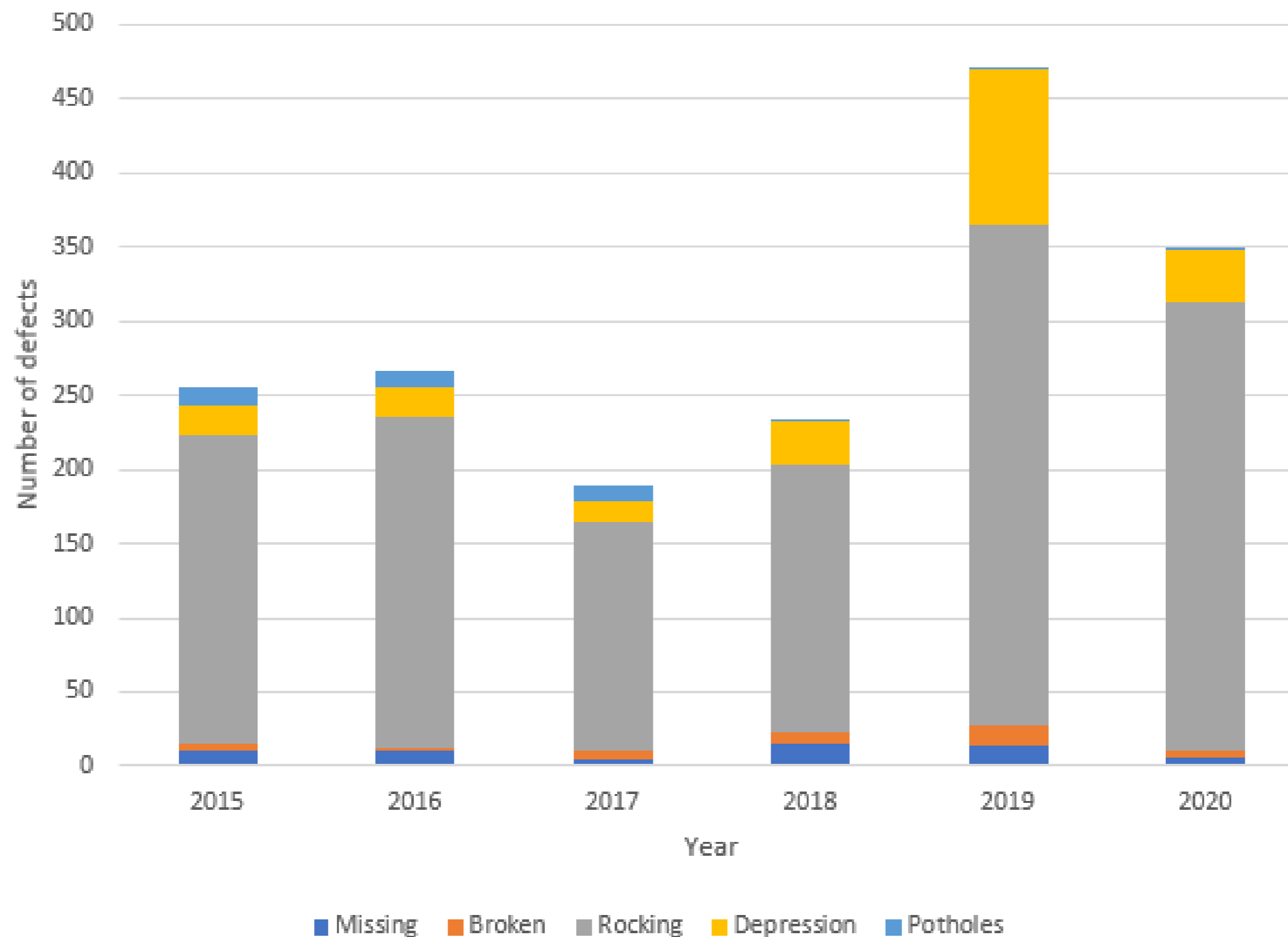


SAFETY PLUS DEFECTS 2020

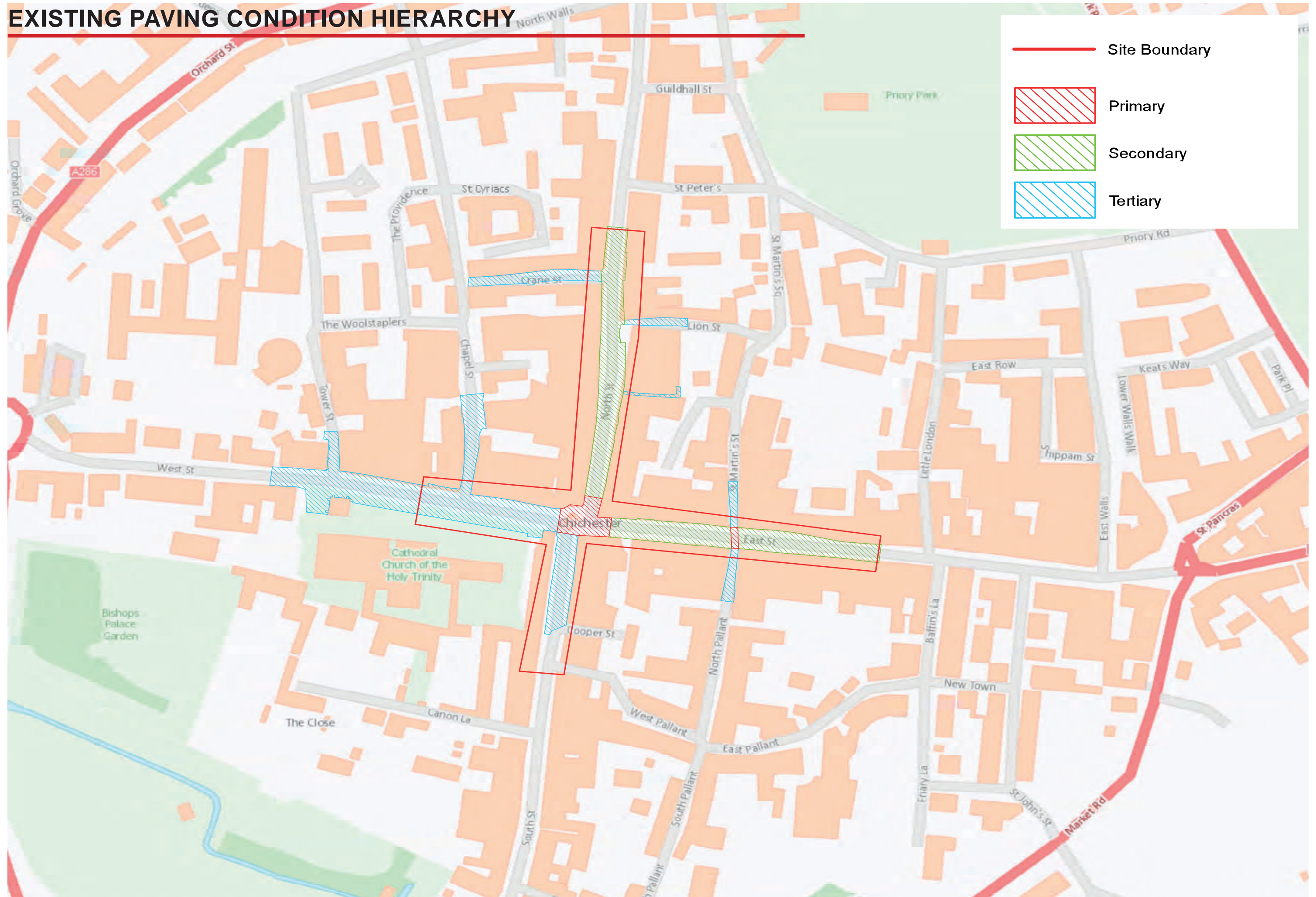


DEFECT TYPES FOR SAFETY PLUS REPAIRS

Defect tracker



EXISTING PAVING CONDITION HIERARCHY



— Site Boundary

▨ Primary

▨ Secondary

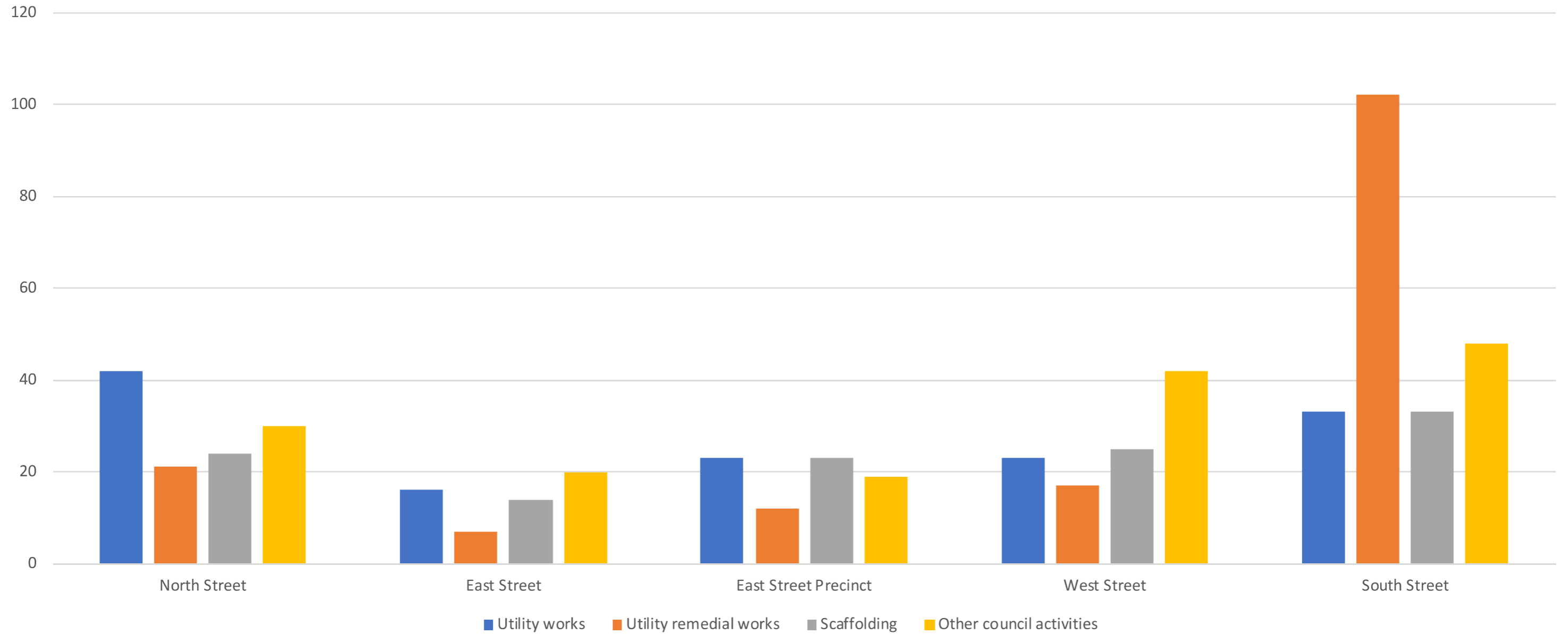
▨ Tertiary

ANALYSIS OF UTILITIES AND HIGHWAYS PERMITS

- No definitive location data like Safety Plus – so currently not mapped
- Data split into:
 - North Street
 - East Street
 - East Street precinct
 - West Street
 - South Street
- Some “Other Council Activities” should probably be excluded
- Utilities vs utilities remedial works requires further investigation



ACTIVITY TYPES FOR UTILITIES AND HIGHWAYS PERMITS (2015 - 2020)



DISCUSSION POINTS - PAVEMENTS



PAVEMENT TREATMENT CONSIDERATIONS

POSSIBLE QUICK WINS:

- Managing traffic – Footways not designed to take regular vehicle traffic (markets, scaffold lorries, deliveries)
- Are all these vehicle movements essential?
 - Could deliveries be made in a different way?
 - If market traders need to put vehicles in the footway zones, consider localised strengthening, to provide specific areas for vehicles. Likely to be quite expensive even for small areas, due to the lack of pavement foundation and number of utilities.
- Prevent non-essential vehicle access to footway areas – e.g. trees in planters
- Restrict other vehicles that are not essential – enforcement may be difficult (e.g. anecdotal evidence of Next delivery lorry)
- Wherever possible, restrict use of temporary reinstatement phase under SROH



KEY ISSUES TO ADDRESS:

- PUBLIC CONFIDENCE
- SAFETY PLUS INTERVENTIONS FOR SLIPS AND TRIPS
- VEHICLE OVERRUN ON FOOTWAYS CAUSING DAMAGE TO YORK STONE SLABS
- EFFECT OF NRSWA REINSTATEMENTS

Very High Cost Option – Market Cross, North and East Street (£15.5M-£18M)

- Large scale public realm scheme
 - Pros
 - Improves public confidence
 - Addresses all current pavement deterioration
 - Ensures pavement design is suitable for vehicles
 - Surfacing materials can be selected to provide best protection against future traffic
 - Cons
 - Cost
 - Causes major disruption during construction
 - Statutory undertakers may cause further damage in future
 - Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

High Cost Option – Market Cross (£2.5M-£3M)

- Full depth pavement reconstruction using new high quality natural stone
 - Pros
 - Addresses pavement deterioration in area with many defects
 - Ensures pavement structural design is suitable for vehicle overrun
 - Natural stone design can be selected to provide best protection against future traffic
 - Cons
 - Does not address issues in North Street/East Street
 - Relatively high cost
 - Statutory undertakers may cause further damage in future
 - Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

High Cost Option – North and East Street Footways (£8M-£12M)

- Full depth pavement reconstruction in footway areas using new high quality natural stone
 - Pros
 - Addresses pavement deterioration in areas with most defects (i.e. York stone) (need to consider issue of missing road pavers)
 - Ensures pavement structural design is suitable for vehicle overrun
 - Natural stone design can be selected to provide best protection against future traffic
 - Cons
 - Does not address issues in carriageway area and will be less visually appealing
 - Relatively high cost
 - Statutory undertakers may cause further damage in future
 - Likely to encounter construction issues due to presence of shallow utilities in the pavement layers

Medium Cost Option – Market Cross (£1.5M-£2.5M)

- Lift and relay all Purbeck setts, traffic exclusion
 - Pros
 - Reinstates good bond between units and addresses different types of mortar in use.
 - Repairs previous damage potentially caused by statutory undertakers' reinstatements.
 - Cons
 - Does not address any pavement structural issues
 - Without excluding vehicles, similar defects likely to reoccur
 - Statutory undertakers may cause further damage in future

Medium Cost Option – North and East Street (£6M-£9M)

- Localised strengthening for known areas of vehicle overrun
 - Pros
 - Lower cost than full scheme
 - Could make use of York stone from Crane Street as a “buffer” resource
 - Cons
 - Does not address all pavement structural issues
 - Reliant on vehicles only using strengthened areas, otherwise defects likely to reoccur
 - York stone not really suited to vehicular traffic
 - Using alternative materials more suited to trafficking may not be visually appealing
 - Statutory undertakers may cause further damage in future

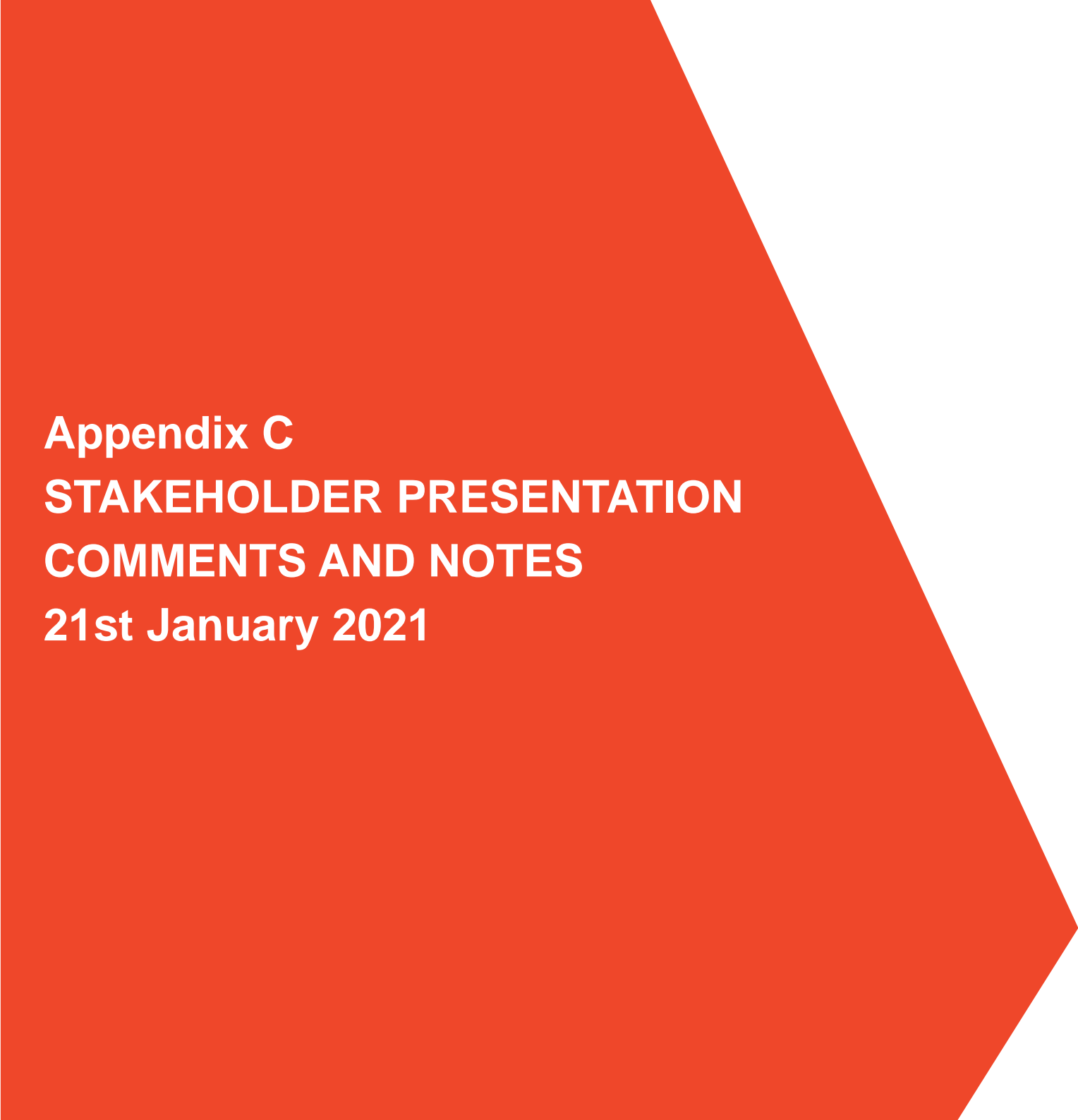
Low Cost Options – all areas

- Reinstate minimum areas rather than single elements when undertaking repairs
 - Pros
 - May reduce repeat visits to hotspots
 - Improves overall bond between units
 - Cons
 - Does not address any pavement structural issues
 - “Patchwork” appearance
- Exclude vehicles from footway areas (e.g. planters, wardens, market marshals, ANPR, permit requirements for scaffold lorries)
 - Pros
 - Prevents further damage to cracked slabs
 - Cons
 - Does not address existing damage
 - May pose access issues for less able and visually impaired

**Thank you for your
time!**

**If you have any comments or
feedback, please contact:**

stephen.reed@westsussex.gov.uk

A large red geometric shape, resembling a stylized arrow or a large triangle pointing right, occupies the left and bottom portions of the page. The rest of the page is white.

Appendix C
STAKEHOLDER PRESENTATION
COMMENTS AND NOTES
21st January 2021

Chichester City Centre Pavements – Stakeholder Presentation 21/01/2021 Comments and Notes from Discussions – Prepared S D Reed 22/01/2021

Below are a series of points and comments recorded during and after the presentation, they have been summarised where points were repeated or reiterated by individuals, I have tried to take them in the order in which they were made. Actions for WSP marked in italic text

- Is there a reason for wear and tear of the pavements outside COOP on Eastgate Square, is this a recent issue?
- Market not there for a year and yet still seeing deterioration?
 - DJ responded by says that it is likely that the cumulative damage caused in earlier years would have unsettled the various parts of the pavement and so it is likely that even lower trafficking could have made matters worse
- There is a real “mish-mash” of surface types is this unique to Chichester?
 - JH respond that that, in his experience, this is not unique to Chichester
- Blue granite setts at gateways deteriorated with large gaps in joints concern for cyclists
- York Stone not local or really part of conservation, not “classically” historic in relation to Chichester
- Need for more fundamental change and looking for options to solve problem long term
- Macadam in roadways with traffic since mid 19th Century, would it be more practicable to use Tarmac? It can be pleasing with colours and/or textured, could this replace York Stone but keep Purbeck – safety of people high priority
- DJ outlined that these materials are available, Romsey High Street was mentioned by group as an example, but still leaves issues of reinstatements not matching over time and ending up with a patchwork quilt, also the resin surfaces can deteriorate quickly especially under constant cleaning regimes after markets
- It was mentioned whether “bays” of asphalt with strips could be used so that utility companies would have to reinstate the whole patch between the “lines” – a higher level of SROH reinstatement can be made and *WSP team will investigate if this has been done elsewhere using the regulations and a “higher standard” reinstatement*
- The surface needs to be suitable for disabled movement, could a cycle lane be looked at on North and East Street – *WSP to feedback comment back to Andy Moulard WSCC Cycle Officer*
- There seemed to be a big jump in interventions from 2018 onwards what is the significant change?
- Discussion on when the Wednesday market activity started to take place and it appears (to be confirmed) that the Wednesday market started in 2018, every week and a smaller Farmers market on a Friday but not as often (*WSP to confirm dates with Mayor and TM*)
- The Market in the city is popular (currently moved to Cattle Market CP during COVID) and traders would prefer it right in the centre of the city, adds to vibrancy of the city
- CDC is reviewing it CP strategy which might mean more markets / events in the car parks, it was commented that this could accord with sustainability (Climate Emergency) of reducing car access to the City
- CDC undertaking mapping exercise at the moment (*WSP to contact CDC to discuss access to data*)
- The potential use of asphalt would have heritage impacts and it should be recognised that the retail centre is under pressure and heritage helps to support this although there is a trend towards more “cafes” and a “service” rather than shopping there is a strong sense of pedestrianisation that the current pavement surface provides

- East and North Street there was concern that something that looks more “road like” might impact on that feel of pedestrianisation
- The use of street furniture, trees and public realm layout could be made to retain that feel and better define the pedestrian areas to make it safe and practicable
- The WSP team were asked to provide more examples and illustrations of small element and nice asphalt centres and other historic centres which have used asphalt to an extent, *WSP have examples which were excluded from the presentation to fit in the time allowed, these will be added to the report*
- Comment was made that it would need to remain a step free, level surface, kerbs would not be welcomed especially by disabled groups, pedestrian safety is paramount, need to maintain restricted access hours
- It was comments about Fire Service access needing to be maintained
- WSP will finalise their report in the coming weeks and CD outlined that it will be circulated to the stakeholders.
- CD wants to ensure that this moves forward but WSCC will need support from CCC and CDC as funding issues will not go away (the very high intervention cost circa £18m is WSCC entire capital budget for one year as an example) Long term maintenance and reducing liabilities is a key issue
- CD expects there to be a need for a phased approach and there now needs to be co-ordinated approach on palette of materials and funding needs to be discussed and moved forward

MAIN CONTACT

Stephen Reed, Technical Director
+44(0) 7900 152645
Stephen.Reed@wsp.com

WSP are now one of the world's leading engineering professional services consulting firms. Together we provide services to transform the built environment and restore the natural environment, and our expertise ranges from environmental remediation to urban planning, from engineering iconic buildings to designing sustainable transport networks, and from developing the energy sources of the future to enabling new ways of extracting essential resources.

We have approximately 34,500 employees, including engineers, technicians, scientists, architects, planners, surveyors, programme and construction management professionals, and various environmental experts. We are based in more than 500 offices across 40 countries worldwide.