

**Sheffield City Council, Amey & Sheffield Tree Action Groups
Steering Group – Joint Position Statement Action**

Review of Tree Investigations - Lessons Learned & Actions

30th August 2019

LEAD REPRESENTATIVES

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PURPOSE

- ◆ To review the joint investigations of trees as agreed in the Joint Position Statement (Dec 2018)
- ◆ To consider lessons learned from the investigations and how this would be applied to the decision making, maintenance works and contract requirements for street trees covered by the Streets Ahead contract

A summary of the lessons learned & actions is attached as appendix 1.

METHODOLOGY

The methodology used 14 trees (*listed below) including photographs and history of intended actions. The sample list of trees was agreed between STAG and Amey prior to the meeting.

*14 trees were used as examples for the review:

- ◆ (APR) Abbeydale Park Rise (o/s 3, o/s 6/8, o/s 22/24)
- ◆ (BRr) Briar Rd (o/s 2)
- ◆ (CHW) Chatsworth Rd (o/s 43)
- ◆ (CRF) Crawford Rd (o/s 83)
- ◆ (CHS) Chelsea Rd (o/s 2, Elm at junction of Union Rd)
- ◆ (KHT) Khartoum Rd (o/s 1)
- ◆ (EGD) Edgedale Rd (o/s 78, o/s 3-11)
- ◆ (HHr) Hunter House Rd (o/s 181, o/s 176)
- ◆ (ECS) Ecclesall Rd (o/s 565)

At the date of the review a total of 165 trees had been subject to investigation with another 87 already agreed for retention. The number of trees inspected to date was 165 of the 309 Core Investment Plan (CIP) trees as well as 15 other trees not previously identified for removal, as well as committing to look at whole road solutions e.g. Rundle Rd (52 trees).

The tree investigations report is attached as appendix 2.

1 Discussion topic 1 – A number of the review trees considered were of trees listed for removal due to surface cracks or pavement uplifting

- 1.1 Tree investigations involving the removal of pavement tarmac for some trees showed that pavement uplifting and humps/trip hazards were not due to roots near the surface but were due to multiple layers of tarmac repairs where roots had lifted the surface. Layers of old tarmac of up to 25cm in places due to previous repairs were found and assumptions made regarding surface roots.

Lesson Learned 1

Where pavement cracking due to roots is identified the preferred solution is to excavate by hand to identify the depth of roots prior to any patch repairs. Repeated overlaying repairs is not good practice and may result in future accessibility problems.

Actions 1a & 1b

(1a) Trees will not be recommended for replacement on the basis of causing damage to the network unless and until the roots have been exposed, examined and all reasonable repair methods tried.

(1b) Additionally inlay patch repair jobs should be issued rather than overlays when in proximity to trees, to avoid the build-up of bituminous material in future, evident in the inspections completed to date.

- 1.2 The group discussed how trees were originally identified for replacement and the fact that the Streets Ahead programme was not only about highway maintenance. Amey explained that when originally assessing trees for removal, factors such as tree age, condition, species and future maintenance (as set out in the original and subsequent 5 Year Tree Management Strategy) were considered along with condition of the highway network.
- 1.3 There was agreement that as the ‘dispute’ over trees grew and with the later introduction of the 6Ds (Dead, Diseased, Dying, Dangerous, Damaging and Discriminatory) as an attempt to simplify the explanation for the public, that in some cases the original reason for replacing a tree was obscured. When the proposals were published it was often the case that the reasons for replacement on the notice attached to the tree were for one of the 6Ds, for example ‘damaging’. This may not have fully reflected the original reason(s) the tree was identified for replacement. Consequently, when some trees were jointly inspected as part of this process, the reported damage was neither significant nor irreparable and the other reasons were less obvious. Amey explained that Abbeydale Park Road was an example of this as some trees there were considered to have a limited Safe Useful Life Expectancy (SULE) and replacement within the Core Investment Period was considered appropriate.

Lesson Learned 2

The focus on tree removals to fulfil the Authorities duties under the Highways Act may have obscured the strategic aims originally intended in the identification of some trees. This led to the Council simplifying messages to aid public understanding by referring to the 6Ds and therefore the original reasons for the removal of some trees were obscured.

Action 2

Amey will ensure that trees identified for replacement will have a clear description and evidence setting out the rationale for the recommendation, having followed action 1a above.

Action 3

The developing strategy for street trees and the contractual obligations on Amey to produce and implement an annually reviewed and revised five year strategy must be well aligned.

- 1.4 The joint inspections focussed on trying to identify a practical solution to the problem rather than trying to evidence the need for replacement. There was agreement that the approach has been positive.

Lesson Learned 3

The value of the right people, with the right skills and capabilities, doing the right things, working toward a clear outcome, should not be underestimated.

Action 4

Amey to ensure that the teams of people working on this type of work have the right skill and capabilities and are well supported in their activity.

2 Discussion topic 2 – A number of the review trees considered were trees where the kerb was displaced

- 2.1 Amey stonemasons used a variety of methods to reinstall displaced kerbs to a straight line. These included fitting thin kerbs, cutting off the back of kerbs to fit and casting kerbs on site. In some cases when kerbs were removed and the area cleared of debris/soil/concrete the original kerbs were fitted. In some cases, kerbs were installed to 'bridge' over roots.

Lesson Learned 4

A visual inspection without investigation for 'damaging' or 'discriminatory' trees is not sufficient for appropriate decision making.

Action 5

No tree would be proposed by Amey to SCC for replacement for 'damage/discriminatory' reasons without prior physical tarmac/kerb removal and investigation (with evidence). SCC will not approve a replacement unless it receives this evidence (see actions above).

- 2.2 Works done during the joint investigations involved standard techniques familiar to highway engineers. Of the 14 trees used as examples in the review none required variation of the existing contract or works outside the scope of the contract. The use of different types of kerb installations are allowed and fall within the remit of the maintenance contract, though not explicitly listed. It should be noted however that many of these will be temporary solutions as the tree will continue to grow and likely break the revised kerbing works.

Lesson Learned 5

Engineering solutions involving thin or modified kerbs have been used well to retain mature trees but these may prove to be of a temporary nature subject to future growth rates.

Action 6

These interventions will be regularly inspected as part of routine surveys.

- 2.3 The Engineering Solutions that were published by the Council were discussed. It was confirmed that these are not specified in the contract (and some would not be allowed or considered) and that these were suggestions that came from public consultations and are not part of the Streets Ahead programme.
- 2.4 Works done during the joint investigations focussed on attaining a continuous straight kerb even when this meant the kerb was in close proximity to the tree root system. Examples from Crawford Rd of kerb deviation on the repaired highway were considered.
- 2.5 There was concern over how long a repair may last given any growth or movement of the tree. Whilst this is site and tree species specific, the group considered the flexibility in the contract for kerb deviation. The contract performance requirements allow for a deviation of 50mm over a 2 metre section on the majority of the network and a 20mm deviation over a 2m section in the city centre prestige area. Where practical, this could be used to allow greater room for future growth or movement.

Lesson Learned 6

Using the contract flexibility that allows a 50mm deviation over 2m would provide greater growth space for street trees.

Action 7

Kerb deviation up to the limits of the performance requirements is something that will be used where appropriate and practicable.

- 2.6 The expansion forces as tree girth expands in existing trees and new plantings will need to be considered. Evidence suggests that in some cases there is space between the tree and a kerb or tree pit edging but the in-fill soil or substrate becomes compressed.

Lesson Learned 7

Expansion forces as tree girth expands may result in kerb displacement or pavement uplift.

Action 8

Future repairs/maintenance around trees should consider the removal of soil/substrate.

3 Discussion topic 3 – A number of review trees considered involved extending or creating new edged tree pits and the possibility of using flexible paving solutions

- 3.1 Enlarging a tree pit is one of the published Engineering Solutions however the basis of the contract is for maintenance and as a general rule works will be like for like. Works by Amey during tree investigations have included the creation of some new wooden edged tree pits. These provide more space for the tree and give an edge to the tarmac.

Lesson Learned 8

Enlarged and edged tree pits provide an attractive and appropriate edging around trees and may reduce future maintenance.

Action 9

Where appropriate, consideration will be given to enlarged and edged tree pits to retain mature trees subject to available footway width. It would not be appropriate to install edgings on existing tree pits where no excavation work is otherwise required as it would unnecessarily risk root damage or disturbance.

- 3.2 Laying tarmac to the trunk of the tree does not meet good practice requirements. There was discussion on the use of flexible materials to infill tree pits rather than just mulch, particularly on larger sections or where pavement width is minimal. This was considered important where trees are in flagged pavements as in the Khartoum Rd example.
- 3.3 The use of flexible paving material for the full width of the pavement may be needed in some cases where there are shallow roots, flags present or narrow pavements and is being considered in current plans. There was agreement on the need to trial this in the short term and to ensure the installations are evaluated over time.

Lesson Learned 9

In areas where there are shallow roots, pavement width is minimal or where flags are present, the use of flexible material may provide the best solution.

Action 10

Amey to identify sites where flexible materials will be used, carry out installation and ensure these will be evaluated over time.

4 Discussion Topic 4 – Considering options for trees that prevent any kerb being installed safely or that are partially in the highway

- 4.1 The group discussed examples from other Local Authorities where trees are retained without a kerb where they are partially in the highway. SCC explained that it is established practice to lay tarmac to a kerb wherever possible. It acts as support for the edge of the footway, gives a sealed edge to the carriageway and also acts as a clear delineation between vehicles and pedestrians.
- 4.2 The group discussed the need to carry out risk assessments when considering whether a tree that protrudes beyond the normal kerb line would present a hazard. Issues such as trip hazards, traffic volumes and parking would need to be considered.

Action 11

Where trees are identified for replacement due to adverse risk factors this will be as a result of a proportionate balanced risk assessment which will be made public.

- 4.3 It was noted that the published Engineering Solutions state that leaving a gap in the kerb is considered. This solution was one proposed by the public as mentioned in 2.3 and is not included in the Streets Ahead contract specification or performance requirements. The reasons it is not considered acceptable are detailed in 4.1. Amey confirmed that water running past or pooling around the base of a tree where a kerb was left out was not a concern arboriculturally. It was confirmed that relief from the relevant performance requirement will be considered to allow kerbs to be temporarily left out but this was not something the Council would seek to introduce at this stage without good practice guidance or advice on the approach of other Highway Authorities.

Action 12

The Council will consider and test for the appropriateness of any evident good practice which could be used to retain trees without kerbs when in the highway.

- 4.4 It was noted that during the Joint Investigations a number of trees have been identified that will require works beyond the scope of the contract. This may be because a build out, a kerb line deviation beyond that in 5.2 or a change to the existing highway layout is required. These trees will be subject to a design being submitted to the Council by Amey

Action 13

Where there is a proposal from Amey to undertake work which makes a material change to the configuration of the Highway to retain trees then an appropriate consultation or communication process will need to be put in place.

5 Discussion Topic 5 - The decision making process and approval for tree replacement

- 5.1 12 of the 14 Review Trees that were considered in this review have been subject to investigations and repairs that (as discussed above) have demonstrated that the problem identified was rectifiable within the terms of the contract specification following the intrusive investigations detailed earlier.
- 5.2 The Independent Tree Panel (ITP) had provided advice that some trees could be retained by using the published Engineering Solutions (including lifting tarmac to investigate and/or fit thinner kerbs). The Council had decided not to follow the ITP advice where it felt the recommended solutions were inappropriate or impracticable. Since the agreement of the joint position statement and adoption of new ways of working (including the joint inspections and additional Amey expenditure) has afforded the benefit of hindsight which shows that in some instances the advice offered by the ITP and not accepted would have been appropriate to follow.
- 5.3 During the investigations, discussions have been ongoing about how future decision making will be done and how this will be shared. A process of 'de-approving' trees that had previously been approved for replacement is underway and these will be published shortly using an agreed template.

Lesson Learned 10

To shift away from visual surveys and overdependence on theory and follow the good practice identified in Actions 1 to 9 above.

Action 14

All tree replacements will be made publicly available in an easy to read format with clear and transparent rationale.

6 Summary/Conclusion – What next?

- 6.1 The approach to learning lessons has been undertaken by all involved in an open and collaborative way, looking to the future and taking the opportunity to improve the activities involved to get the best outcomes for the city.
- 6.2 These lessons learned and the subsequent actions will be put into immediate practice, indeed many are already in practice, and used to inform the work being done between partners to develop an ambitious street tree strategy for the city.

Appendix 1
Summary of Lessons Learned & Actions

Lessons learned	Actions
Discussion topic 1 – A number of the review trees considered were of trees listed for removal due to surface cracks or pavement uplifting	
1 – <i>Where pavement cracking due to roots is identified the preferred solution is to excavate by hand to identify the depth of roots prior to any patch repairs. Repeated overlaying repairs is not good practice and may result in future accessibility problems.</i>	(1a) – Trees will not be recommended for replacement on the basis of causing damage to the network unless and until the roots have been exposed, examined and all reasonable repair methods tried. (1b) – Additionally inlay patch repair jobs should be issued rather than overlays when in proximity to trees, to avoid the build-up of bituminous material in future, evident in the inspections completed to date.
2 – <i>The focus on tree removals to fulfil the Authorities duties under the Highways Act may have obscured the strategic aims originally intended in the identification of some trees. This led to the Council simplifying messages to aid public understanding by referring to the 6Ds and therefore the original reasons for the removal of some trees were obscured.</i>	2 – Amey will ensure that trees identified for replacement will have a clear description and evidence setting out the rationale for the recommendation, having followed action 1a above. 3 – The developing strategy for street trees and the contractual obligations on Amey to produce and implement an annually reviewed and revised five year strategy must be well aligned.
3 – <i>The value of the right people, with the right skills and capabilities, doing the right things, working toward a clear outcome, should not be under estimated.</i>	4 – Amey to ensure that the teams of people working on this type of work have the right skill and capabilities and are well supported in their activity.
Discussion topic 2 – A number of the review trees considered were trees where the kerb was displaced	
4 – <i>A visual inspection without investigation for 'damaging' or 'discriminatory' trees is not sufficient for appropriate decision making.</i>	5 – No tree would be proposed by Amey to SCC for replacement for 'damage/discriminatory' reasons without prior physical tarmac/kerb removal and investigation (with evidence). SCC will not approve a replacement unless it receives this evidence (see actions above).
5 – <i>Engineering solutions involving thin or modified kerbs have been used well to retain mature trees but these may prove to be of a temporary nature subject to future growth rates.</i>	6 – These interventions will be regularly inspected as part of routine surveys.

Lessons learned	Actions
6 – <i>Using the contract flexibility that allows a 50mm deviation over 2m would provide greater growth space for street trees.</i>	7 – Kerb deviation up to the limits of the performance requirements is something that will be used where appropriate and practicable.
7 – <i>Expansion forces as tree girth expands may result in kerb displacement or pavement uplift.</i>	8 – Future repairs/maintenance around trees should consider the removal of soil/substrate.
Discussion topic 3 – A number of review trees considered involved extending or creating new edged tree pits and the possibility of using flexible paving solutions	
8 – <i>Enlarged and edged tree pits provide an attractive and appropriate edging around trees and may reduce future maintenance.</i>	9 – Where appropriate, consideration will be given to enlarged and edged tree pits to retain mature trees subject to available footway width. It would not be appropriate to install edgings on existing tree pits where no excavation work is otherwise required as it would unnecessarily risk root damage or disturbance.
9 – <i>In areas where there are shallow roots, pavement width is minimal or where flags are present, the use of flexible material may provide the best solution.</i>	10 – Amey to identify sites where flexible materials will be used, carry out installation and ensure these will be evaluated over time.
Discussion Topic 4 – Considering options for trees that prevent any kerb being installed safely or that are partially in the highway	
	<p>11 – Where trees are identified for replacement due to adverse risk factors this will be as a result of a proportionate balanced risk assessment which will be made public.</p> <p>12 – The Council will consider and test for the appropriateness of any evident good practice which could be used to retain trees without kerbs when in the highway.</p> <p>13 – Where there is a proposal from Amey to undertake work which makes a material change to the configuration of the Highway to retain trees then an appropriate consultation or communication process will need to be put in place.</p>
Discussion Topic 5 - The decision making process and approval for tree replacement	
10 – <i>To shift away from visual surveys and overdependence on theory and follow the good practice identified in Actions 1 to 9 above.</i>	14 – All tree replacements will be made publicly available in an easy to read format with clear and transparent rationale.