

Hi Mark,

First and foremost I would like to point out that there is no science book that gives the exact answer you are looking for. And there are so many variables to consider for each and every tree on this project that giving definite answers is completely impossible. But based on what has been presented I am very concerned. Based on my experience any time work is done below ground within the dripline of a tree I am concerned. I am even more concerned when that work occurs within 5' of the base of a tree and would like to review every root cut larger than 2" in diameter when that occurs. I am even more concerned when work is occurring below ground, within 5' of the base of the tree and on more than one side of the tree. It appears to me that many of these trees have been greatly compromised and out of an abundance of caution should be removed and replaced. Also, with the threat of Emerald Ash Borer to ash trees and the age of these trees removal is the best option.

Thank you,

Fred Bicha

**Parks Superintendent
Kalispell Parks and Recreation**



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Hi Mark,

Thanks for sending over such thorough information on this issue. I'll keep my response general and based on some key Best Management Practices for trees and construction impacts.

It's usually best to avoid any construction impacts within a tree's dripline (everything underneath the canopy spread). If this can't be avoided, a professional arborist can help set criteria for retaining trees. Examples may include a tolerable number of structural roots cut (greater than 2" in diameter), distance of excavation from the base of tree, and extent of grade changes (the top 8-12" contain critical fine roots for tree health).

Based on the attached images you sent me, it seems that all these trees were excavated clear up to their trunks, removing the critical fine roots near the surface and severing far too many structural roots for stability. I would certainly recommend removing any remaining trees.

While I can understand the public push back, I would emphasize the public safety concern. The damage has been done, and there's an opportunity to reset the entire boulevard for new plantings. Green Ash trees should be phased out when possible in favor of more species diversity, and there's a chance for new trees to be planted to minimize utility conflicts.

I hope you find this information helpful. Feel free to contact me with any further questions/concerns.

Thanks,
Alex Nordquest
Forestry Division Manager
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Good morning all,

After reviewing the information and photos you have provided, I would agree wholeheartedly with Chis' assertion that all of the mature ash associated with this project should be removed. In an 8-10 foot wide boulevard, the excavation that took place to allow for concrete forms and new pour of sidewalk, curb, and gutter would have occurred within the critical root zone of all trees, and within the zone of rapid taper for any tree over 10-12" dbh. The zone of rapid taper is the area where structural roots originate adjacent to the tree's trunk. This area is generally considered to be 3-5 times the DBH of the tree. For example a 16" DBH tree would have a zone of rapid taper area that is 16x4 (Middle of the example range) = 64" or 5ft 4". This is the distance from the center of the trunk that, under no circumstances, should be excavated within. The fact that this damage occurred on both sides of the trees dramatically increases potential for failure.

These trees should not have been retained and should have been removed and replaced at the expense of the project. They are currently posing what I would consider to be an unacceptable level of risk to person's and property, and they should be removed ASAP.

Please let me know if you have follow up questions.

Best,

Ben Carson
Urban Forest Program Manager
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