



The Shade Tree Department, LLC

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July 21, 2022

Nick Marucci  
Engineer and Director of Public Works  
Township of Montville  
195 Change Bridge Road  
Montville, New Jersey 07405-9498

Re: Impact of Road Reconstruction  
on existing street trees and  
recommended replacement trees

Dear Mr. Marucci,

I am writing in response to our June 29, 2022 inspection of proposed road reconstruction projects for Jean Drive, Stafford Place, Fowler Place, Dahl Drive, and the re-planting of Breton Drive.

Road Reconstruction projects typically come up every 15 years or so, and when they do, all of the errors of our predecessors come out to haunt us. The situation with street trees can simply be summarized as "Wrong Tree, Wrong Place." Here are the most common problems that we encountered:

- In many cases, mark outs were not called for. Consequently, we find conflict with underground utilities.
- The most common error is planting a tree species with a large growth habit in a restricted root area, such as between a sidewalk and curb, which results in infrastructure conflict.
- Another common issue is when large growth habit tree species are planted beneath overhead utilities, resulting in deformed aesthetically compromised trees.
- Still another issue is planting an entire street with the same species, making them all vulnerable to the same insect and disease problems, and a common average life-span (after a predictable expiration date). The consequences of planting a monoculture of Ash Trees on Breton was devastating.
- Inappropriate planting locations is also a common problem, such as planting too close to a driveway apron, storm sewer, or causing a visibility problem.
- The planting of shallow rooted tree species in clay soils, or where there is a high water table, is sure to cause conflicts with lawns and infrastructure.

On the one hand, we have developed techniques to preserve problematic trees in road reconstruction projects, such as leaving in old sections of curbing, replacing sections of concrete sidewalk with asphalt, planking sections of sidewalks up over existing roots, shaving roots half-way through and re-setting or re-pouring sidewalks using actual expansion joints for each new slab in the vicinity of an existing tree, swinging a radius around the base of a tree often ending up with a reduced sidewalk width, and off-setting replacement sidewalks to minimize conflict with trees.

But on the other hand, we have to realize that these are simply band-aids to help preserve an unsustainable situation.

In most cases, we can preserve healthy trees if only one infrastructure conflict exists. For example, a raised sidewalk, a pushed out or overgrown curb, lawn roots, or a raised driveway apron issue. If more than one conflict is present and root pruning or root removal is necessary, that is reason enough to remove (and hopefully replace) a tree. I call this a “two strikes and you are out” approach. I developed this approach after accidentally shaving roots on two sides of a tree over a period of a couple of years. The tree eventually uprooted and landed on a house. Basically, if we cannot make improvements without compromising public safety, the tree must be removed.

Fortunately, there were no overhead utilities on all of the streets we looked at. We did, however, notice that certain species were more problematic than others:

- The shallow rooted Honey Locusts on Jean Drive displaced more sidewalk slabs than on any other street.
- On Stafford Place, almost all of the Red Maples were plagued with girdling roots which will eventually bring about their premature end.
- The Fowler Place and Dahl Drive Pin Oaks, with their aggressive growth habit, caused more pushed out curbs and sidewalk issues combined than on the other streets. Nevertheless, most of the trees looked healthy and are able to be preserved.

What we might like to do on these road reconstruction projects is remove all of the most problematic trees and replace them with more compatible and less aggressive tree species. Unfortunately, public opinion comes into play here and each household needs to be approached to discuss their particular tree and infrastructure options:

- Old curbing may have to be left in place.
- Sidewalks may have to be curved around trees.
- A tree’s present health and presumed reaction to root shaving must be taken into account.

Replacing the Ash Trees on Breton Drive was the last thing on the agenda. Basically, we want to avoid planting conflicts with the underground utilities, and utilize several different tree species as a hedge against future insect and disease problems.

Not every tree that was removed needs to be replaced. To minimize future maintenance costs, a mixture of compact shade trees, flowering trees, and trees with a medium growth habit should be used. It is advisable to give the adjacent property owners a choice in the tree species.

These are some of my favorite species choices:

<b>Compact Shade Trees</b>	<b>Flowering Trees</b>	<b>Medium Growth Habit Trees</b>
Ruby Slippers Maple	Robin Hill Shadblow (native)	Yellowwood (native)
Pyramidal European Hornbeam	Japanese Tree Lilac	Parrotia
Hophornbeam (native)	Rutgers Dogwood (native cultivars)	Maackia
Hedge Maple	Merrill Magnolia	Hackberry (native)

Compact Shade Trees	Flowering Trees	Medium Growth Habit Trees
Rotundiloba Sweetgum	Ruby Red Horsechestnut Merlot Redbud (native cultivar) Carolina Silverbell (native) Golden Rain Tree Flowering Cherries (many varieties)	Black Gum (native) Lacebark Elm

One last thought: it is best to include tree replacement in your road reconstruction projects as it is often easier to finance tree replacement out of a Capital Budget than an Operational Budget.

Hopefully this information is helpful to you. Unfortunately, each tree and each planting location is best handled on a case by case basis, and this is very time consuming. Please feel free to contact me should you have any additional questions.

Sincerely,



John D. Linson  
NJ Licensed Tree Expert #198  
NJ Approved Forester  
ISA Certified Arborist #NJ-0806A

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For additional reading, I recommend:

- ✓ *Reducing Infrastructure Damage by Tree Roots: A Compendium of Strategies*  
by Laurence R. Costello and Katherine S. Jones  
Published by The International Society of Arboriculture
- ✓ *Trees for New Jersey Streets*  
Published by The New Jersey Shade Tree Federation

