IMPROVEMENTS TO
LINCOLN AVENUE, HAGEMOUNT AVENUE AND ROCKY BROOK COURT
BOROUGH OF HIGHTSTOWN, MERCER COUNTY, NEW JERSEY
THIS PROJECT IS FUNDED THROUGH THE NJDOT MUNICIPAL AID FY2018 GRANT

- **REQUESTED AMOUNT**: $749,032.00
- **GRANT AMOUNT**: $746,500.00

**SCOPE OF WORK:**
- CURB
- SIDEWALK
- ADA CURB RAMPS
- NEW SIGNAGE
- MILL AND PAVEMENT OVERLAY WITH PAVEMENT REPAIRS
- WATER AND SEWER IMPROVEMENTS
- STORMWATER IMPROVEMENTS
In support of ongoing development of a project to add sidewalks, repair curbs and in general, improve the streetscape of Lincoln Avenue, Rocky Brook Court and Hagemount Avenue in their entireties. Environmental Commission and Tree Committee member, Yan Trioizier and I reviewed conditions at the project area and are recommending the following:

Design Process Approach
We highly recommend that the Borough Engineer and its sub-consultants work closely with the Environmental Commission, the Project Sub-Committee and interested citizens to develop the design of the street improvements. Understanding that a design process is rarely linear and that unanticipated conditions are frequently revealed throughout, we believe that an iterative process with frequent and regular interactions with the EC and Project Sub-Committee and concerned citizens will: 1) Support an efficient and accurate process, 2) Develop consensus among constituencies, and 3) Ultimately create the best fit design.

To support this design process, we have identified a set of design guidelines aimed at guiding decision-making:

Design Guidelines
1. Support safe and enjoyable pedestrian, vehicular and bicycle circulation along each street.
   a. Narrow the street dramatically at street crossings to slow traffic and improve pedestrian visibility.
2. Reduce or mitigate impervious surface through:
   a. Reductions in overall impervious surface areas (Consider targeting an overall reduction in impervious surface even in consideration of the additional impervious introduced by new sidewalks).
   b. Creation of stormwater infiltration areas along streets.
   c. Introduction of plant materials, especially trees.
3. Improve the overall streetscape aesthetic.
   a. Support a rich human experience.
   b. Consider materiality, color, and organic forms in the development of the design.
4. Support the management of the critical tree resource by:
   a. Saving mature trees in good condition.
   b. Removing trees in poor condition.
   c. Planting new trees in locations where none currently exist (consider a target of one tree for each lot frontage).
   d. Selecting appropriate species for each specific locations.
5. Create a planting strip of not less than 4’ width by:
   a. Locating the sidewalk tight to the right-of-way (ROW).
   b. Narrowing the street in whole or in targeted areas to support wide planting strips and to avoid negatively impact existing trees.
   c. Considering a sidewalk design that is not always linear.

Tree Removal Recommendations
The following trees were observed to be in poor conditions. We recommend their removal as part of the scope of this project:

Lincoln 303  Remove (1) Large Oak
Lincoln 305  Note that both large oaks should be saved
Lincoln 325  Remove (2) Large Oaks
Lincoln 329  Remove (1) Large Oak, (1) Large Maple
Lincoln 330  Remove (2) Large Maples (one on the east and one on the west side of the lot edge)

End of Memo
LEGEND:

EXISTING

PROPOSED

PLAN A - 21' CARTWAY WITH PARKING ON NORTH AND SOUTH SIDES

PLAN B - 20' CARTWAY WITH NO PARKING, TREE REMOVAL

PLAN C - 20' CARTWAY WITH NO PARKING
Hightstown Borough  
Department of Public Works  
156 Bank Street  
Hightstown, New Jersey 08520  

April 3, 2019  

Att: Ken Lewis, Public Works Superintendent  

To Whom It May Concern:  

This letter is for Hightstown Borough concerning the trees on Lincoln Avenue. All of the seven Oak Trees, on the south side of Lincoln Avenue appear to be infected with Bacterial Leaf Scorch. Number five of the Oak trees is totally dead and #1, #4, #6, and #7 are in the worst shape of them all. Oak Trees #2 and #3 look the best out of the seven but they still appear to be infected. The work being performed around these trees will require cutting of roots and compacting the soil which will most likely speed up their demise. I would consider removing all these trees.

The London Plane trees on the north side of Lincoln Avenue have a good chance of surviving the road work. I am concerned that the water lines look like they would have to damage alot of the root system or trunk flare. Where this is true, consider removing the tree. If the sidewalk is to be put on this side of road, leave plenty of room for additional trunk growth.

If preservation is your goal, work should be performed as far away from trunk flare and root system as possible. Tree trunks should also be protected from being damaged by construction equipment.

Best regards,

John Stanley - LTE#685  
President
PLAN D - 21' CARTWAY WITH PARKING ON NORTH SIDE

PLAN E - 21' CARTWAY WITH PARKING ON SOUTH SIDE
April 20, 2019

Ms. Debra L. Sopronyi, RMC/QPA/CMR
Administrator/Borough Clerk
Hightstown Borough
156 Bank Street
Hightstown, NJ 08520

Dear Ms. Sopronyi,

On April 17, 2019, I inspected the trees on Lincoln Avenue in Hightstown between Hutchinson Street and Hagemount Avenue to ascertain their condition and recommend a course of action in anticipation of curb and sidewalk installation. On the same day, I inspected the trees on Sunset Avenue in preparation of a sidewalk installation.

Lincoln Avenue

The section of Lincoln Avenue under consideration has an existing curb on the north side of the street that borders mostly mature London plane trees (see attached list of trees). There is no curb on the south side of the street that has mostly mature pin oak planted in the right-of-way. Installation of a sidewalk along either side of the street will cause substantial damage to the root system of the existing trees. Most of the functional roots that a tree uses for absorption of water and nutrients are located within the top 12-18 inches of the soil. Digging down 4 inches to set forms for a concrete walk would disturb a significant portion of those roots on the existing trees. In addition, injury of woody roots can introduce root rot fungi that can compromise the stability of the trees.

I have noted the condition of each of the trees in this section of Lincoln Avenue (see attached list of trees) and can draw some basic conclusions concerning which side of the street might be best to disturb during the proposed construction. The curb along the north side of the street is in good shape. Any disturbance to this curb would be detrimental to the London plane trees that are mostly in good condition, despite
repeated pruning to provide clearance to electrical conductors that run along the north side of the street. One tree at 314 Lincoln Avenue has a major stem that has grown around and engulfed the low voltage conductor and the utility has installed a jumper wire around the stem. The stability of the stem does not appear compromised by the conductor and no action is necessary at this time.

Two trees on the north side of Lincoln Avenue should be removed. The first is a 20” Diameter at Breast Height (DBH) Norway maple at 330 Lincoln that has mushrooms at the base that indicate shoe string root rot. This tree is dying and possibly unstable depending on the extent of the root rot. The second is a 30” DBH silver maple also at 330 Lincoln that has an extensive hollow at about five feet and has signs of recent extensive branch breakage that is a notorious problem for this species.

Many of the pin oaks along the south side of Lincoln Avenue are exhibiting symptoms of bacterial leaf scorch. This bacterial disease clogs the water conducting elements of affected trees causing the trees to die back from the outside and top of the crown toward the trunk of the tree. Sprouting on the trunk and large interior branches is common. There is no “cure” for this disease with treatments only prolonging the decline of the trees. While many tree species are susceptible to bacterial leaf scorch, it has been my experience that pin oaks, and red oaks are affected most severely. Not all pin oaks will get the disease. Those that do succumb usually take several years to die completely but produce copious amounts of hazardous dead branches in the process. Generally, affected trees (described in the next paragraph) should be removed rather than pruned to prevent large deadwood from falling from the tree.

On the south side of Lincoln Avenue, there is a 34” DBH pin oak at 303 that is dead and should be removed. At 325, there is a 42” pin oak that is half dead. Also at this address is a 30” DBH pin oak that has lost about 30% of its crown and appears to be in low vigor. Both trees at this address should be removed. At 329, there is a 42” DBH pin oak that appears to be in low vigor with about 20% of its crown dead and deadwood larger than 4 inches in diameter. I believe this tree will continue to produce large dead branches over the next few years as it continues to decline. A case could be made to remove this tree at the same time as the other removals. Also at this address is a 32” DBH Norway maple that has weak fork at about 5 feet. This tree is likely to fail at this weak fork and should be removed.

There are also several trees on the south side of the street that appear to be in good condition. These include: a 42” DBH pin oak at 303, a 40” DBH pin oak at 305, a 3” DBH willow oak at 309, and a 32” DBH pin oak at 331.
I would discourage the placement of a sidewalk along the London plane trees on the north side of Lincoln Avenue. These trees, if left undisturbed, can provide decades more benefits to the community with almost no maintenance by the Borough of Hightstown. In contrast, there are several trees on the south side of the street that are doing poorly and should be removed or some may be pruned heavily. Installation of a curb along the south side of Lincoln Avenue would have minimal impact to the trees if the curb line were set at the minimal roadway width that would be within the existing pavement zone. However, this would narrow the street significantly. If a sidewalk is to be installed, and it is best to install it on the south side to avoid the London plane trees, one should consider, a wider street with on street parking because most of the trees on the south side already need major work in the form of extensive pruning or removal. If a sidewalk and curb are to be installed along the south side of the street, I recommend the removal of all the trees on the south side of the street in the work zone.

While the relatively small diameter willow oak is possible to transplant, it would probably cost more to move the willow oak than to purchase and plant a new tree. This is especially true if there are going to be a dozen or so replacement trees as part of the street improvement project. When replanting trees, I recommend planting on the house side of the sidewalk so tree roots are not constrained by the sidewalk to one side and a curb on the other. Routinely street tree plantings are planted in the lawn extension between the sidewalk and curb. If trees can be planted on the house side of the sidewalk, roots will have more unobstructed space to grow, hopefully reducing the occurrence of sidewalk heaving by tree roots. If the sidewalk can be installed near or next to the curb, the trees can be planted on the edge of the right-of-way allowing maximum distance between the tree roots and sidewalk.

Sunset Avenue

The question here is which side of the street to install the sidewalk. As far as the trees are concerned, the south side (odd numbered houses) is the logical choice. Only two trees would be impacted by a sidewalk on this side of the street. A multi-stem red cedar (approximately 6" DBH) at 237 Sunset would have to be removed. A sugar maple at 233 approximately 18" DBH would have its root system impacted somewhat by sidewalk installation. This impact could be lessened by minimizing the amount of excavation for the sidewalk forms in this area. It may be possible to form the sidewalk on the existing grade with some ¾ inch clean crushed stone as a base. The sides of the walk would then be backfilled with some topsoil gently tapered to the existing grade.

In contrast, the north side of the street has eight trees that would be impacted by the installation of a sidewalk. Because the grade is much higher than the curb on the north side, it would be necessary adjacent to some trees to cut more than a foot of soil to install a walk. This would require the removal of at least three trees and the substantial
impact to the roots of the five remaining trees. Root damage could introduce root rot causing these trees to become unstable in addition to the stress to the trees from the root loss.

An existing portion of sidewalk has recently been installed on the north side of Sunset Avenue between Maple Avenue and South Main Street. A sidewalk installation on the south side would necessitate pedestrians crossing Sunset Avenue at Maple Avenue to continue on the sidewalk to South Main Street. Given that both Sunset Avenue and Maple Avenue are dead end streets, a crossing at Maple Avenue, while possibly inconvenient, would reduce greatly the impact to the trees along Sunset Avenue.

It has been my pleasure to provide to you this report and assessment. Please let me know if you have further questions or if I can be of help in the future.

Thank you,

Kevin L. Scibilia
NJ Licensed Tree Expert #279
Master of Science – Forestry
### Attachment 1: Lincoln Avenue Trees, Hightstown, NJ

<table>
<thead>
<tr>
<th>Number</th>
<th>Street</th>
<th>Species</th>
<th>Diameter at 4.5 feet</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>303a*</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>34&quot;</td>
<td>Hypoxylon canker indicates tree is dead or soon to be REMOVE</td>
</tr>
<tr>
<td>303 b</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>42&quot;</td>
<td>10% deadwood, appears to be in good condition</td>
</tr>
<tr>
<td>305</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>40&quot;</td>
<td>10% deadwood, appears to be in good condition</td>
</tr>
<tr>
<td>309</td>
<td>Lincoln</td>
<td>willow oak</td>
<td>3&quot;</td>
<td>good condition; too costly to transplant?</td>
</tr>
<tr>
<td>325a*</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>30&quot;</td>
<td>30% crown lost appears to be of low vigor; REMOVE</td>
</tr>
<tr>
<td>325b*</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>42&quot;</td>
<td>50% of crown dead; REMOVE</td>
</tr>
<tr>
<td>329a*</td>
<td>Lincoln</td>
<td>Norway maple</td>
<td>32&quot;</td>
<td>weak fork at 4.5 feet; REMOVE</td>
</tr>
<tr>
<td>329b</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>42&quot;</td>
<td>20% of crown dead appears to be of low vigor; prune deadwood or REMOVE</td>
</tr>
<tr>
<td>331</td>
<td>Lincoln</td>
<td>pin oak</td>
<td>32&quot;</td>
<td>10% deadwood, appears to be in good condition</td>
</tr>
<tr>
<td>306?</td>
<td>Lincoln</td>
<td>London plane</td>
<td>32&quot;</td>
<td>no deadwood appears to be in good condition</td>
</tr>
<tr>
<td>314a</td>
<td>Lincoln</td>
<td>London plane</td>
<td>26&quot;</td>
<td>no deadwood appears to be in good condition</td>
</tr>
<tr>
<td>314b</td>
<td>Lincoln</td>
<td>London plane</td>
<td>26&quot;</td>
<td>10% deadwood stem engulfed low voltage conductor</td>
</tr>
<tr>
<td>326</td>
<td>Lincoln</td>
<td>London plane</td>
<td>26&quot;</td>
<td>10% deadwood appears to be in good condition</td>
</tr>
<tr>
<td>330a*</td>
<td>Lincoln</td>
<td>Norway maple</td>
<td>20&quot;</td>
<td>Shoe string root rot, 6&quot; hollow limb over road; REMOVE</td>
</tr>
<tr>
<td>330b*</td>
<td>Lincoln</td>
<td>Silver maple</td>
<td>30&quot;</td>
<td>recent branch breakage 3-4 inch diameter 20% of crown, trunk hollow at 5'; REMOVE</td>
</tr>
<tr>
<td>Code</td>
<td>Explanation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address number + a,b,c</td>
<td>Multiple trees at one address are designated with the number and a,b,c, where &quot;a&quot; is the tree farthest left when standing in the street looking at the building &quot;b&quot; is the next tree to the right, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>Designates tree that has one or more problems that requires removal.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>?</td>
<td>Address was not visible from the street and was estimated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td>London plane</td>
<td><em>Platanus x acerifolia</em></td>
</tr>
<tr>
<td>Norway maple</td>
<td><em>Acer platanoides</em></td>
</tr>
<tr>
<td>pin oak</td>
<td><em>Quercus palustris</em></td>
</tr>
<tr>
<td>silver maple</td>
<td><em>Acer saccharinum</em></td>
</tr>
<tr>
<td>willow oak</td>
<td><em>Quercus phellos</em></td>
</tr>
</tbody>
</table>
THANK YOU.
QUESTIONS?