EXTRA INFORMATION

10-5-09

12

Board Meeting Agenda
Re. Spruce street sidewalk/Tulip Tree:

Included is a signed petition from the neighbors and concerned citizens.

Also included is a complete proposal presented to the Town Engineer in April of this year. The cost involved is anywhere from 3.5-5K. No further action was taken on this by the town as of yet.

-Mike Klinger

We, the undersigned, urge the Board of Selectmen to consider alternatives to cutting down the Tulip Tree. We support the proposal by landscape architect Tom Doolittle. We ask the Selectmen to join with Tara Frederichs and Mike Gowing to consider alternatives to cutting the tree down.

NAME	**ADDRESS**	EMAIL(Optional)
David Sibley	Concord-Tree Expert/Author	
Colleen White	7 Prospect Street	
Kathy Acerbo-Bachmann	50 River Street	
Dennis Bettez	46 Spruce Street	
Katherine St. Hilaire	31 Arlington Street	
Kristi Twichell	20 Agawam Road	
Maria Albarran	132 Arlington Street	
Hugo Rivero	132 Arlington Street	
Patricia Harpell	31 Arlington Street	
Todd Bachmann	50 River Street	
Mark R. Graney	33 Spruce Street	
Sandra Harris-Graney	33 Spruce Street	
Wayne Friedrichs	24 Windsor Avenue	
Jane M. Kelly	223 Arlington Street	
Carol Kraemer	221 Arlington Street	
Russell Kelly	223 Arlington Street	
Julie Kennedy	37 Spruce Street	
Kevin Geerey	37 Spruce Street	
Rachel Klinger	239 Arlington Street	
Eleanor Chenevert	37 Windsor Avenue	
Mary Hunter Utt	Elm Street	
Elaine C. C. Doyle	7 Guswood Road	
Jane Harman	235 Arlington Street	
Timothy Doyle	7 Guswood Road	
Terra Friedrichs	Acton	
Paul M White	8 Revolutionary Road	
Mary White	8 Revolutionary Road	
Louise Bettez	46 Spruce Street	
Mike Klinger	239 Arlington Street	
Stephanie Parker	276 Arlington Street	
Christiana Andersen	250 Arlington Street	
Judith Holmes	6 Nash Road	
Lisa Palaia	6 Kinsely Road	
Gabrielle White	36 Spruce Street	
Carole Drago	239 Arlington Street	
Adam Smith	250 Arlington Street	
Tristan Morse	217 Arlington street	
Tricia Comjean	217 Arlington street	
(Five Gates students--Robert, Gomno, Isabelle, Carol, Rose)		
Terry Brodsky	399 Great Road	
Annette Lochrie	57 Windsor Avenue	
Bill King	17 Davis Road	
Sarah Murray	Acton	
Helena Peterson	23 Homestead Street	
Karen Morse	219 Arlington Road	

Adriano Sabateli	194 Central Street
Scott Blaufuss	313 Central Street
Malin Goodwin	460 Littlefield Road, Boxboro
Jim Tabner	9 Perkins Lane
Nichola Comjean	29 Elm Street
Betsy Baldwin	17 Captain Brown's Lane
David Caplan	13 Olde Lantren Road
Jody Kick	7 Hillside Terrace
Ellie Hertzberg	5 Mead Terrace
Michelle Samour	161 Arlington Street
Steve Lenox	161 Arlington Street
Anna Holmes	6 Nash Road
Abigail Kingsbury	30 Willow Street
Cataldo Holmes	6 Nash Road
John Prendwills	27 Elm street
Lori Anne	2326 Nowland Ave, IN
Jim Snyder-Grant	18 Half Moon Hill
Dough Sherman	5 Old Village Road
Mathew Liebman	Acton
Pam Minichiella	5 Old Village Road
Laura Jean Hickey	66 Spruce Street
Emily Palmer	460 Main Street
Lee Lesser	218 Cleveland crt, CA
Jim Benn	21 Deacon Hunt drive
Pam Lyman	21 Deacon Hunt drive

Both the ADA and MAAB standards require a maximum cross-pitch of 2% for sidewalks/walkways, and a maximum slope of 1:20 along the running length of the path.

Site Investigations:
My goal in looking at the site was to determine what the potential was for reducing the cross-slope of the sidewalk through the lowering of the pavement or raising of the curbline; and to assess the means for achieving the MAAB regulations relative to walkways.

In looking at the existing conditions of the cross-slope, the existing curb height is roughly 4-1/2" (confirmed on the town-provided survey). This height is below normal curb height (typically 6"), but not atypical for a bituminous concrete curb that has been in place for several years. Raising the curb to a full height of 6" will not by itself solve the problem.

I also did some digging at the edge of the sidewalk pavement adjacent to the tree, and found that, while there are roots present on the street side of the tree, they appear to not extend very far towards the street, or at least dive fairly quickly around the immediate area of the trunk. Using my fingers, I was able to excavate down about 4-1/2" below the edge of the adjacent pavement; I believe that there is more depth available, but removal of more of the sidewalk pavement would be required to determine the actual depth that could be safely excavated without further damaging the roots.

Using a level, I measured the elevation from the road surface to the top edge of the existing pavement, and found it to be approximately 15-1/2". If I am correct in my assumption, the differential between the road surface and the top of any root is about 11".

The width from the face of the existing curb to the edge of the pavement at the narrowest point adjacent to the tree is approximately 39".

Recommendations:
I believe that, with careful excavation around the perimeter of the tree, additional depth can be found above the tree toot system, allowing the pavement to be lowered more than the 4-1/2" I observed. If this is true, I believe that by building a curb that is approximately 10" tall, a walking surface that complies with the cross-pitch and running slope requirements of MAAB can be constructed. To do this, a curb that is taller than normal (probably about 10" at the face) would have to be installed, and a section of the sidewalk about 50' long would have to be reconstructed. The curb height is necessary to create an acceptable cross-pitch; the length of the sidewalk reconstruction is required to meet the running slope maximums on either side of the tree.

Construction of the curb would be a monolithic curb, such as granite or precast or cast-in-place concrete. The curb would have to have sufficient depth to resist overturning: if granite or precast were to be used, a bridge curb section, which is 24" deep instead of a typical roadway curb of 18", could be specified. While a 10" high curb is a very high in comparison to the existing condition or many curbs, it is not unusual. As noted above,

bridge curbing is usually installed with an 8" or 10" face; in the City of Boston, curb heights are exaggerated at catch basins resulting in a 9" reveal. Also, many communities now install curbs with a 7" reveal initially, so that when the street is resurfaced, the reveal will still be approximately 6". The biggest impact of such a high curb would be the ability (or lack thereof) to open a car door against it; in this particular instance, cars are very seldom parked along this curb due to the head-in parking spaces across the street at the post office.

To meet the width requirement of MAAB, the new curb would have to be installed with its back face approximately at the front face of the existing curb; this would narrow the pavement width along Spruce Street by roughly 6". The existing width of the street is roughly 22 feet in this area; a width of 21'-6" should not be problematic, especially given that the post office parking area is across the street, and there is therefore no hard curb line on that side of the street. If the widening was done as a gradual taper through the length of the sidewalk reconstruction, it is unlikely that it would be noticed, particularly as the existing on-site. curb line is not perfectly straight, with the street narrowing to just over 20' to the north of the site.

To meet the running slope requirements of MAAB, approximately 30' of sidewalk would have to be reconstructed to the south of the tree, and 10' to 20' feet to the north (this is approximate; I did not have sufficient grade information to establish an accurate length).

Several people have asked me if rubber sidewalk material would be appropriate for the reconstructed sidewalk. In general, I think this is fine, but I would limit the rubber section to immediately around the tree. The advantage to a rubber sidewalk is that it would have some give and flex if the tree roots continued to grow, resulting in less deterioration of the sidewalk surface and maintaining a better surface for walking. The disadvantage to the rubber sidewalk material is that it comes in a standard thickness of 1.875", whereas bituminous concrete can installed in variable thicknesses. While 2" of bituminous concrete would be the preferred thickness, a thinner course could be used to reduce overall curb height; bituminous concrete also provides the ability to mold the material around the constraints of the root system.

Next Steps:
I recommend that the town do some further investigation around the tree by demolishing the sidewalk and hand excavating to determine the exact location and depth of the tree roots and to develop a final critical cross-section at the tree to determine curb height, which will set many parameters for the work. I assume that the town would install this sidewalk repair with its own forces, which would allow greater flexibility in developing a design that could easily be implemented on site.