



November 9, 2020

Mr. Jason Pezzulo, Planning Director
 Cranston City Hall
 869 Park Avenue
 Cranston RI, 02910

jpezullo@cranstonri.org

**RE: NATICK AVENUE SOLAR
 PEER REVIEW OF LANDSCAPE PLANS FOR NATICK AVENUE SOLAR, REVITY ENERGY, LLC**

Dear Mr. Pezzulo,

This review is for the landscape plans dated 10.23.20, submitted as 'Landscape Plans' for the proposed Natick Avenue Solar installation. The review is a City Plan Commission condition for a peer review of buffer plans of the Master Plan for the project. The plans were prepared by the applicant's landscape architect but in collaboration with the Natick Avenue Solar Advisory Committee. This review is independent, but I, as the peer reviewer received input during the planning from the applicant's landscape architect and from the Advisory Committee and participated in several Advisory Committee meetings.

The buffer is intended as a visual screen for view from abutters to the proposed panel arrays. The intent of the visual buffer is generally acknowledged as obscuring the view to panels and not necessarily complete screening. It is assumed that there should be initial visual impact, but screening (opacity) would increase over time.

SITE CONTEXT

The site: The solar installation site is currently a managed, relatively open wooded lot primarily with deciduous trees and little understory of younger trees or shrubs. This includes the outer edges that could be important to a visual buffer. Residential areas to the north, east and south of the site are reasonably large properties, most with substantial areas of deciduous woods between houses and the proposed solar farm.

View Locations: The views were measured and illustrated on the submitted plans with transects drawn from the first floor of the abutter house to the panel field. There were inherent limitations to the transect method. The transects were diagrammatic and approximate, from a single location on the

property, 1-3 transect lines and, generalized existing summertime vegetation, but they were none the less useful in identifying the more critical view locations and generally pointed out the heights of screen material needed, the importance of evergreen planting, and the possible review if there were significant revisions to in the final grading of the solar array field. While it is the applicant's responsibility to provide a meaningful visual buffer it was interesting to note both how much of the visual buffer is vegetation on the abutter's property and also to question viewing locations other than the house.

Site Edge Conditions: Visual buffer needs and locations: Conditions are not uniform.

- The north boundary includes two conditions. 1) abutters with houses, terraces and yards near and at similar elevation as the north property line and 2) houses (on Ridgewood Road) further away from the property line, on higher elevation and with 100 feet or more of deciduous woods between the house and clearing for the solar field.

The boundary line is a stonewall and the on-site vegetation in the boundary area is open, managed woods (primarily deciduous) with continuous foliage canopy, but relatively little understory of younger trees or shrubs.

- East abutters are at a lower elevation with 100' or more of deciduous woods between the between house and proposed clearing.
- The south property line is also the edge of a 50' wide open field of a gas line easement. One abutter in particular has a house and yard close to the property line with views across the gas-line easement and up toward the proposed panel field. Another is much further away with houses with seasonal views through several hundred feet of deciduous woods.
- The west edge is woods and agricultural land.

PLANTING PLAN

Buffer Planting Areas

Buffer areas are indicated on the Buffer Plan as 'A' through 'D'. 'A' and 'B' as shown on the plan, are off-site on abutter property and not considered within the purview of the Advisory Committee. The entrance road will not be changed substantially from the existing condition and has little impact on visibility to the panels. Transmission poles are also not considered with this plan. Areas 'C' and 'D' are the major buffer considerations.

Visual Buffer Strategy (North and East)

The buffer for the north and east has 2 components: a "no cut" wooded area to remain and a "cleared area" for selected planting.

The "no cut buffer area" is a strip of existing woods along the property line. It includes presently managed woodland with loosely spaced trees and minimal understory providing some distance to separate the land uses but is not considered an effective screen and generally not suitable for planting. Over time however, with additional light from the clear cut for the project it would gradually become denser with infill growth from naturally occurring shrubs and trees.

At the north boundary the buffer is a 50 feet wide wooded strip. At the east boundary the no cut buffer is a 25' wide wooded area.

The “cleared area” is the strip outside the service road where grading as required by the current grading plan would disturb existing vegetation. There have been questions about the extent or limits of this area and it is assumed that within the cleared area, if the indicated extensive grading is not needed, isolated larger trees might be allowed to remain and that every effort would be made for as little disturbance as possible to the roots of trees in the adjacent no cut buffer area.

The cleared area north of the service road is 10 feet wide. East of the service road the cleared area is a variable width of 20-40 feet.

Planting

The stated intent of planting is for a “natural” look, guiding both planting material selections and the supplemental planting layout. For both flexibility and accountability, a system of planting in repeated groups of plants in 10'x 50' patterns was developed for planting in the cleared area and the few more open locations of the no cut buffer.

Typical Group and Pattern Materials: All the specified plant species are native to the area although not necessarily found in the immediate vicinity. There is diversity with several types of trees and shrubs. The most conspicuous plants are the larger evergreens trees (white pine and red cedar) needed for year round screening and a more immediate impact. Deciduous small trees (clump shadblow and birch) are also included for more immediate screening impact. Several different shrubs options are included to initiate a natural layering of the vegetation. In each pattern or group there are 19 plants to be laid out in an informal arrangement.

(See attached plant material list)

Planting Sizes of the larger evergreen trees (pine and red cedar) are specified as 7-8' tall at planting. Larger sizes could be specified but the sizes specified are commonly available, more manageable and would catch up to a larger size in a couple of years. Smaller white pines are also included for planting in available spaces in the no cut buffer. Shadblow or gray birch are specified as 2 different size clumps, 8-10' and 5-6' tall at planting. The various shrubs specified are commonly available, moderate though not showy in size at planting, but should grow in quickly contributing to the density of the planting group.

Planting Group and Pattern Locations are specified for places where the screening impact is most needed. Locations were determined from the transect views, aerial photos and on-site visits. Where needed most, they are located close together but with a 10' or 15' gap between them for a more natural appearance and possibility of adjustment in response to boulders, ledge or existing trees in the clear area or nearby trees in the no cut buffer. There is more space between planting patterns where screening needs are less specific.

Opacity or Screening Impact will increase over time. It has been said that the supplemental planting is “an investment in the future”. That is true, but there will be some initial impact. In the first couple years the evergreen white pines and red cedars will show several feet above the boundary stone wall. The

larger clump shadblow or birches are slightly taller and will also show but as deciduous material will be more effective in the summer. The ten feet wide planting pattern is not a dense screen but will get noticeably taller and denser in the five to ten years after planting. As the no cut buffer begins to fill in as it gets more light from the adjacent clearing and the new planting becomes established, relatively effective screening will be created.

Gaps in between the planting groups and areas with exposed soil in the larger cleared areas, will have 6" minimum topsoil (as described in planting detail) and be seeded (a grass and perennial mix to be determined). Any mowing would be limited to the edge of the service road. Gradually these areas would grow in with naturally seeded shrubs and trees.

Specified Planting Locations

- **C:** North in the twelve hundred feet long clear area north of the north service road. 13 typical groups/patterns variously located but particularly for screening AP 22-2 lot 218, AP 22-4 lot 324, AP 22-4 lot 122 and AP 22-4 lot 118.
- **C:** North east in the clear area above AP 22-3 lot 166 and AP-22-3 lot 116. The slope and the abutters' woods made screening less critical but 2 typical groups/patterns are to be located where they will be most effective.
- **C:** North west above the solar field west end clearing area (AP 22-2 lot 216 and AP 22-2 lot 217). Screening in this area depends in large part on maintaining the adjacent deciduous woods. The owner of AP 22-3 lot 119 has agreed to keep that as undisturbed woods. There had been discussion about planting pines in the woods for wintertime screening. That seems unlikely to be successful, due to limited sunlight, but consideration could be given to planting pines on the edge of the clearing.
- **D:** Because planting is not permitted in the gas line easement a planted buffer near the property line was not possible. However, planting north of the gas line could screen at least the closer panels from lot AP 22-3 lot 50.

The general planting area indicated on the plan could be the appropriate location however the low height shrubs of the current plan submittal would have little visual buffering effect. A plant group strategy such as that proposed for section 'C' could be a far better solution. In this situation, there could be five groups: (two NE along the service road, two in the broader area parallel to the easement and a fifth extending west). Plant materials could be much the same as those in 'C' with the exception of substitutions for white pine, which would reach heights far too great for this location. Additional red cedars and American holly would be included in place of the pines. The general height of this group would be approximately 15'. Shrubs would reach their natural height of 6-10 feet and any tree growth above 15' would be allowed to be trimmed to a minimum of 12' every two or three years.

- **D:** South east properties were not considered seriously impacted and they were not addressed in the planning process. The houses are a long distance from the solar field and the wetland woods allows little opportunity for intervention. However, though the views to the panels will

be obscured by the extensive deciduous woods there will be wintertime views and plans should relook at possibilities for evergreen planting along the edge of woodland clearing south east of the service road.

PLANTING NOTES

The planting notes provide specifications for the landscaping. There were some questions and suggestions brought up in the review process and in individual Committee member comments.

Substitutions

There needs to be some allowance for plant material substitutions. They should be comparable native species of the size specified or larger. Options provided in the plant lists will help in assessing any necessary substitutions and it is assumed that each group or pattern would have either birch or shadblow as the deciduous small tree and one of the species of shrubs. Half the total deciduous trees might then be birch and half shadblow, and each quarter of the total shrubs one of the species specified. With the intended informal naturalistic layout however, the proportion of one species to another certainly can be adjusted as needed.

Once installed, the final planting locations and materials should be documented in “as built” drawings and notes.

Warranty/Maintenance

The one year period referenced in notes is conventional for replacement of plants that do not thrive, but the critical nature of the screen planting and the Development Plan Review requirements suggest that there should be a longer warranty period, particularly to assure that there is adequate watering during the plant establishment period. That period will be determined by City regulations but it is suggested that it be at least 3 years.

Seeding for disturbed areas in the buffer zone has not been specifically addressed by the plan or the Advisory Committee. Thus, a seed mix and rate is yet to be determined but these are logical locations for seeding to encourage and support native pollinators and other wildlife.

On-going City Monitoring and Approvals

With approval of a landscape plan, the City will continue to have certain responsibilities for monitoring and approvals of the buffer landscape. These can include but not be limited to the following:

- Approval of the area staked out or otherwise marked for clearing.
- Approval of marked locations of planting groups/patterns and possibly approval of a layout of a planting group as a standard for the remaining group plantings.
- Approval of locations for any other screen planting.
- Approval of planting at substantial completion of planting.
- Occasional maintenance inspections and approval of planting at end of the warranty/maintenance period.

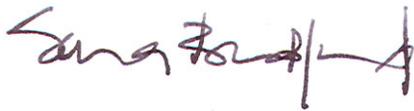
CONCLUSIONS

The report evaluates the submitted Buffer Plan but also responds to the valuable input from Committee meetings and input from neighbors and Advisory Committee members received after the final meeting. The neighborhood did not think that the plan, as submitted, satisfied the Committee's charge to develop plans for an effective visual buffer. However, this report's explanation of the buffer, supplementary planting strategies and suggested amendments (particularly to the screening for south abutters) addresses and perhaps satisfies some of their concerns.

The views from abutters to the solar arrays were considered as three layers of screening including: 1) The existing planting and woodland on abutter properties, 2) A no cut buffer zone and, 3) Supplementary screen planting. Thus, the plan response depended on viewer location and other conditions both on and off-site. Views will not be completely blocked. Abutters will be aware of the solar development but the plan with proposed amendments does provide reasonable visual relief through buffers and strategic planting effective for the initial development and particularly as a longer term visual screening investment.

The landscape plan was prepared in collaboration with the Advisory Committee and the plan and this report are intended to convey and interpret the thoughts of the Committee. It is an independent peer review however, and prepared with hope that it can be of use to the Planning Board in its future reviews.

Sincerely,

A handwritten signature in dark ink, appearing to read "Sara Bradford". The signature is fluid and cursive, with a vertical line extending downwards from the end of the name.

Sara Bradford, RLA

APPENDIX: PLANT LISTS

'C' TYPICAL PLANT GROUP MATERIALS

Key	Quant	Botanical Name	Common Name	Size	Notes
AC1	2	Amelanchier canadensis (smaller size)	Shadblow or Serviceberry	5-6' clump	option: Betula populifolia clump (gray birch)
AC2	2	Amelanchier canadensis (larger size)	Shadblow Serviceberry	8-10' clump	Option: Betula populifolia clump (gray birch)
JV	3	Juniperus virginiana	Red cedar	7-8'	
PS1	2	Pinus strobus (smaller size)	White pine	4-5'	
PS2	2	Pinus strobus (larger size)	White pine	7-8'	
VC1	8	Vaccinium corymbosum	High bush blueberry	2 ½-3'	options: Cornus racemosa (Gray dogwood) Morella pensylvanica (Bayberry) Viburnum dentatum (Arrowwood)

Options are provided for additional diversity and for determining substitutions. It is assumed that each group/pattern would have either shadblow or birch and one of the species of shrubs.

'C' TOTAL NUMBER OF PLANTS FOR THE AREA OF SUPPLEMENTAL PLANTING

Key	Quant	Botanical Name	Common Name	Size	Notes
AC1	30	Amelanchier canadensis (smaller size)	Shadblow or Serviceberry	5-6' clump	option: Betula populifolia clump (gray birch)
AC2	30	Amelanchier canadensis (larger size)	Shadblow Serviceberry	8-10' clump	option: Betula populifolia clump (gray birch)
JV	45	Juniperus virginiana	Red cedar	7-8'	
PS1	30	Pinus strobus (smaller size)	White pine	4-5'	
PS2	30	Pinus strobus (larger size)	White pine	7-8'	
VC1	120	Vaccinium corymbosum	High bush blueberry	2 ½-3'	options: Cornus racemosa (Gray dogwood) Morella pensylvanica (Bayberry) Viburnum dentatum (Arrowwood)

Total of 19 plants each group/pattern. 15 groups/patterns in area 'C'. Total 285 plants for area 'C' planting

'D' AMENDED TYPICAL GROUP/PATTERN

Key	Quant	Botanical Name	Common Name	Size	Notes
AC1	2	Amelanchier canadensis (smaller size)	Shadblow or Serviceberry	5-6' clump	option: Betula populifolia clump (gray birch)
AC2	2	Amelanchier canadensis (larger size)	Shadblow Serviceberry	8-10' clump	option: Betula populifolia clump (gray birch)
IO	2	Ilex opaca	American holly	4-5'	
JV	5	Juniperus virginiana	Red cedar	7-8'	
VC1	8	Vaccinium corymbosum	High bush blueberry	2 ½-3'	options: Cornus racemosa (Gray dogwood) Morella pensylvanica (Bayberry) Viburnum dentatum (Arrowwood)

Options are provided for additional diversity and for determining substitutions. It is assumed that each group/pattern would have either shadblow or birch and one of the species of shrubs.

'D' AMENDED TOTAL PLANTS FOR AREA OF PLANTING

Key	Quant	Botanical Name	Common Name	Size	Notes
AC1	12	Amelanchier canadensis (smaller size)	Shadblow or Serviceberry	5-6' clump	option: Betula populifolia clump (gray birch)
AC2	12	Amelanchier 8canadensis (larger size)	Shadblow Serviceberry	8-10' clump	option: Betula populifolia clump (gray birch)
IO	12	Ilex opaca	American holly	4-5'	
JV	30	Juniperus virginiana	Red cedar	7-8'	
VC1	48	Vaccinium corymbosum	High bush blueberry	2 ½-3'	options: Cornus racemosa (Gray dogwood) Morella pensylvanica (Bayberry) Viburnum dentatum (Arrowwood)

Total of 19 plants each group/pattern. 6 groups/patterns in amended area 'D'. Total 114 plants for area 'D'.

ADDITIONAL SCREEN PLANTING OUTSIDE THE CLEARED AREA PLANTINGS- BY AMENDMENT**West end of 'C' edge of clearing (A.P. 22-3 lot 119)**

Key	Quant	Botanical Name	Common Name	Size	Notes
PS2	26	Pinus strobus	White pine	7-8'	10' on center

East of 'D' service road edge of clearing

Key	Quant	Botanical Name	Common Name	Size	Notes
JV	20	Juniperus virginiana	Red cedar	7-8'	In groups
PS2	20	Pinus strobus	White pine	7-8'	In groups



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