

**Riparian Area Impact Assessment and  
Restoration Plan  
Atlantic Sunrise Project  
Lancaster County**

*July 2017*

**Prepared for:**

**TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC**

**Prepared by:**

**ECOLOGY AND ENVIRONMENT, INC.**

368 Pleasant View Drive  
Lancaster, New York 14086

# B

## Tree and Shrub Planting List

**APPENDIX B**  
**LIST OF APPROVED SPECIES FOR REPLANTING**

| TREES  |         |                          |             |                 |            |                    |  |
|--|---------|--------------------------|-------------|-----------------|------------|--------------------|--|
| Common/<br>Scientific Name   | Region  | <sup>1</sup> Wet<br>Code | Soil<br>pH  | Flood Tolerance | Height(ft) | Shade<br>Tolerance | Wildlife Value   |
| Red maple<br><i>Acer rubrum</i>                                    | P, R, A | FAC                      | 5.5-<br>7.0 | tolerant        | 75-100     | tolerant           | food source-fruits and<br>young shoots                               |
| *Silver maple<br><i>A. saccharinum</i>                             | P, R, A | FACW                     | 4.0-<br>6.5 | tolerant        | 75-100     | intermediate       | food source-seeds and<br>young twigs                                 |
| Sugar maple<br><i>A. saccharum</i>                                 | R, A    | FACU-                    | 4.0-<br>7.0 | intolerant      | 75-100     | very tolerant      | food source-seeds and<br>twigs                                       |
| Serviceberry <i>Amelanchier<br/>arborescens/laevis/ canadensis</i> | P, R, A | FAC-                     | 4.5-<br>7.0 | tolerant        | 20-40      | intermediate       | food source-fruit, twigs<br>and leaves                               |
| Pawpaw<br><i>Asimina triloba</i>                                   | P, R, A | FACU+                    | 5.0-<br>7.0 | intolerant      | 20-35      | tolerant           | food source-fruit and<br>leaves; host plant for<br>zebra swallowtail |
| **Yellow birch <i>Betula<br/>alleghaniensis</i>                    | P, R, A | FAC                      | 4.5-<br>7.0 | intolerant      | 60-100     | intermediate       | food source-seeds, young<br>twigs and shoots and<br>catkins          |
| Black (Sweet) birch<br><i>B. lenta</i>                             | R, A    | FACU                     | 5.0-<br>7.0 | intolerant      | 50-75      | intermediate       | food source-catkins,<br>buds, seeds, leaves and                      |
| River birch<br><i>B. nigra</i>                                     | P, R    | FACW                     | 4.5-<br>7.5 | tolerant        | 40-70      | intolerant         | food source-seeds, buds,<br>young twigs and foliage                  |
| *American hornbeam<br><i>Carpinus caroliniana</i>                  | P, R, A | FAC                      | 4.0-<br>7.5 | intolerant      | 35-50      | very tolerant      | food source-catkins,<br>buds, seeds, leaves and                      |
| **Bitternut hickory<br><i>Carya cordiformis</i>                    | P, R, A | FACU+                    | 6.5-<br>7.5 | intermediate    | 75-100     | intolerant         | bitter nuts not favored as<br>much as other hickories                |
| **Shagbark hickory<br><i>C. ovata</i>                              | P, R, A | FACU-                    | 4.0-<br>8.0 | intolerant      | 75-100     | intermediate       | food source-twigs and<br>nuts  |
| *Redbud<br><i>Cercis canadensis</i>                                | P, R    | FACU-                    | 4.5-<br>7.0 | intolerant      | 20-35      | tolerant           | food source-seeds,<br>foliage and flower pollen<br>for honeybees     |
| Hackberry<br><i>Celtis occidentalis</i>                            | P, R    | FACU                     | 6.0-<br>8.0 | intermediate    | 75-100     | intermediate       | food source-fruits and<br>twigs; shelter and nesting<br>sites        |
| **Persimmon<br><i>Diospyros virginiana</i>                         | P       | FAC-                     | 5.0-<br>7.0 | intermediate    | 50-75      | tolerant           | food source-fruits, twigs<br>and nectar                              |
| American beech,<br><i>Fagus grandifolia</i>                        | P, R, A | FACU                     | 4.0-<br>6.5 | very intolerant | 75-100     | very tolerant      | food source-nuts   |
| Honey-locust<br><i>Gleditsia triacanthos</i>                       | R, A    | FAC-                     | 6.0-<br>8.0 | intermediate    | 50-75      | intolerant         | food source-seeds and<br>pods  |
| **Kentucky coffee- tree<br><i>Gymnocladus dioica</i>               | A       | FACU-                    | 6.0-<br>8.0 | intermediate    | 75-100     | intolerant         | low appeal to wildlife   |

**APPENDIX B**  
**LIST OF APPROVED SPECIES FOR REPLANTING**

| <b>TREES</b>                                       |               |                                 |                    |                        |                   |                        |   |
|--|---------------|---------------------------------|--------------------|------------------------|-------------------|------------------------|---|
| <b>Common/<br/>Scientific Name</b>                 | <b>Region</b> | <b><sup>1</sup>Wet<br/>Code</b> | <b>Soil<br/>pH</b> | <b>Flood Tolerance</b> | <b>Height(ft)</b> | <b>Shade Tolerance</b> | <b>Wildlife Value</b>   |
| Black walnut<br><i>Juqlans nigra</i>               | P, R          | FACU                            | 5.5-<br>8.0        | intermediate           | 75-100            | intolerant             | food source-twigs and<br>nuts                                   |
| Tuliptree/poplar<br><i>Liriodendron tulipifera</i> | P, R, A       | FACU                            | 4.5-<br>6.5        | intermediate           | 75-100            | intermediate           | food source-nectar and<br>seeds                                 |
| Black-gum<br><i>Nyssa sylvatica</i>                | P, R, A       | FAC                             | 4.5-<br>6.0        | intermediate           | 50-75             | intolerant             | food source-fruits, twigs<br>and nectar                         |
| * **Hop-hornbeam<br><i>Ostrya virginiana</i>       | P, R          | FACU-                           | 4.0-<br>7.5        | very intolerant        | 35-50             | very tolerant          | food source-buds, catkins<br>and seeds                          |
| Eastern white pine<br><i>Pinus strobus</i>         | P, R, A       | FACU                            | 4.0-<br>6.5        | intolerant             | 75-100            | intermediate           | high value food source-<br>needles and seeds; used<br>for cover |
| Sycamore <i>Platanus<br/>occidentalis</i>          | P, R, A       | FACW-                           | 5.0-<br>6.5        | intermediate           | 75-100            | intermediate           | moderate value for cover<br>and nesting; food source-<br>fruits |
| Eastern cottonwood<br><i>Populus deltoides</i>     | P, A          | FAC                             | 6.5-<br>7.5        | tolerant               | 75-100            | intolerant             | food source-bark, twigs,<br>leaves and buds                     |
| Large-toothed aspen<br><i>P. grandidentata</i>     | P, R, A       | FAC-                            | 5.0-<br>6.5        | intolerant             | 50-75             | very intolerant        | food source- bark, twigs,<br>leaves, catkins and buds           |
| Wild black cherry<br><i>Prunus serotina</i>        | P, R, A       | FACU                            | 5.0-<br>7.5        | very intolerant        | 50-75             | intolerant             | high value food source-<br>fruits, twigs and nectar             |
| White oak<br><i>Quercus alba</i>                   | P, R, A       | FACU-                           | 4.5-<br>7.0        | intolerant             | 75-100            | intermediate           | high value food source-<br>acorns and twigs                     |
| Swamp white oak<br><i>Q. bicolor</i>               | P, R          | FACW+                           | 4.5-<br>6.5        | tolerant               | 75-100            | intermediate           | food source-acorns and<br>twigs                                 |
| **Chestnut oak<br><i>Q. montana</i>                | P, R          | UPL                             | 4.5-<br>7.0        | intolerant             | 50-75             | intermediate           | food source-acorns and<br>twigs                                 |
| Pin oak<br><i>Q. palustris</i>                     | P, R, A       | FACW                            | 4.5-<br>6.5        | tolerant               | 50-75             | intolerant             | food source-acorns and<br>twigs                                 |
| Northern red oak<br><i>Q. rubra</i>                | P, R, A       | FACU-                           | 4.5-<br>6.5        | intermediate           | 75-100            | intermediate           | medium value for nesting<br>and food source-acorns              |
| *Black willow<br><i>Salix nigra</i>                | P, R, A       | FACW+                           | 5.0-<br>8.0        | very tolerant          | 35-50             | very intolerant        | food source-buds, fruit,<br>and twigs                           |
| Sassafras<br><i>Sassafras albidum</i>              | P, R, A       | FACU-                           | 4.5-<br>7.0        | very intolerant        | 35-50             | intolerant             | food source-twigs and<br>fruits                                 |
| American basswood<br><i>Tilia americana</i>        | P, R, A       | FACU                            | 4.5-<br>7.5        | intolerant             | 75-100            | tolerant               | food source-twigs, seeds<br>and nectar                          |
| **Red (Slippery) elm<br><i>Ulmus rubra</i>         | P, R, A       | FAC                             | 5.5-<br>7.0        | tolerant               | 50-80             | intermediate           | food source-seeds and<br>twigs                                  |

**APPENDIX B**  
**LIST OF APPROVED SPECIES FOR REPLANTING**

| SMALL TREES/SHRUBS  |         |                          |             |                 |            |                    |  |
|---|---------|--------------------------|-------------|-----------------|------------|--------------------|--|
| Common/<br>Scientific Name  | Region  | <sup>1</sup> Wet<br>Code | Soil<br>pH  | Flood Tolerance | Height(ft) | Shade<br>Tolerance | Wildlife Value   |
| **Smooth alder<br><i>Alnus serrulata</i>                                  | P, R, A | OBL                      | 5.0-<br>7.0 | very tolerant   | 12-20      | very intolerant    | food source-fruit  |
| Red chokeberry <i>Photinia</i><br>( <i>Aronia</i> ) <i>arbutifolia</i>    | P, R, A | FACW                     | 5.5-<br>7.5 | very tolerant   | 6-12       | intermediate       | very low wildlife value  |
| Black chokeberry<br><i>P. melanocarpa</i>                                 | P, R, A | FAC                      | 6.5-<br>8.0 | very tolerant   | 3-6        | intermediate       | food source-seeds and<br>twigs   |
| Buttonbush <i>Cephalanthus</i><br><i>occidentalis</i>                     | P, R, A | OBL                      | 5.5-<br>8.5 | very tolerant   | 6-12       | very intolerant    | food source-fruit  |
| Summersweet<br><i>Clethra alnifolia</i>                                   | P       | FAC+                     | 4.5-<br>6.5 | very tolerant   | 6-12       | tolerant           | food source-fruits and<br>twigs  |
| Silky dogwood<br><i>Cornus amomum</i>                                     | P, R, A | FACW                     | 5.0-<br>7.0 | very tolerant   | 6-12       | intolerant         | food source-fruits   |
| Gray dogwood<br><i>C. racemosa</i>  | P, R, A | FAC-                     | 5.0-<br>7.0 | intermediate    | 6-12       | tolerant           | food source-fruits; cover  |
| Red-osier dogwood<br><i>C. sericea</i>                                    | P, R, A | FACW+                    | 6.0-<br>8.5 | very tolerant   | 6-12       | intermediate       | food source-fruits, buds,<br>and twigs   |
| **Amer. hazelnut<br><i>Corylus americana</i>                              | P, R, A | FACU-                    | 5.0-<br>7.0 | intolerant      | 6-12       | tolerant           | food source-nuts (higher<br>nutritional value than<br>acorns and beechnuts)                          |
| Witchhazel <i>Hamamelis</i><br><i>virginiana</i>                          | P, R, A | FAC-                     | 4.5-<br>6.0 | intolerant      | 20-35      | very tolerant      | leaves toxic to some<br>animals  |
| Winterberry<br><i>Ilex verticillata</i>                                   | P, R, A | FACW+                    | 4.5-<br>7.5 | very tolerant   | 6-15       | intermediate       | intermediate wildlife<br>value   |
| **Mountain laurel<br><i>Kalmia latifolia</i>                              | P, R, A | FACU                     | 4.5-<br>5.5 | intolerant      | 12-20      | very tolerant      | high value as food esp.<br>for winter browse for   |
| Common spicebush<br><i>Lindera benzoin</i>                                | P, R, A | FACW-                    | 4.5-<br>6.0 | intermediate    | 6-12       | very tolerant      | high value as food source<br>fruits and leaves; host<br>plant for spicebush<br>swallowtail butterfly |
| Northern bayberry <i>Morella</i><br>( <i>Myrica</i> ) <i>pensylvanica</i> | P, R    | FAC                      | 5.5-<br>8.0 | very tolerant   | 6-12       | intolerant         | food source-fruits   |
| **Ninebark <i>Physocarpus</i><br><i>opulifolius</i>                       | P, R, A | FACW-                    | 4.5-<br>6.5 | very tolerant   | 6-12       | intolerant         | food source-fruit  |
| **Rosebay rhododendron<br><i>Rhododendron maximum</i>                     | P, R, A | FAC                      | 4.0-<br>5.5 | tolerant        | 20-35      | intolerant         | food source-buds and<br>twigs (winter browse)  |
| **Swamp azalea<br><i>R. viscosum</i>                                      | P       | OBL                      | 4.0-<br>7.0 | very tolerant   | 6-12       | intermediate       | food source-nectar for<br>hummingbirds and<br>butterflies  |
| Staghorn sumac<br><i>Rhus typhina</i>                                     | P, R, A | None                     | 4.5-<br>7.0 | intolerant      | 35-50      | intermediate       | food source-fruit  |
| **Swamp rose<br><i>Rosa palustris</i>                                     | P, R, A | OBL                      | 4.0-<br>7.0 | very tolerant   | 4-10       | intolerant         | food source-fruit  |
| *Pussy willow<br><i>Salix discolor</i>                                    | P, R, A | FACW                     | 4.0-<br>7.0 | very tolerant   | 20-35      | very intolerant    | high value as food source  |
| Sandbar willow <i>Salix</i><br><i>exigua (interior)</i>                   | P, R, A | OBL                      | 6.0-<br>8.5 | very tolerant   | 15-20      | very intolerant    | food source-fruits and<br>twigs  |

**APPENDIX B**  
**LIST OF APPROVED SPECIES FOR REPLANTING**

| SMALL TREES/SHRUBS                                |         |                          |             |                 |            |                    |  |
|---|---------|--------------------------|-------------|-----------------|------------|--------------------|--|
| Common/<br>Scientific Name                        | Region  | <sup>1</sup> Wet<br>Code | Soil<br>pH  | Flood Tolerance | Height(ft) | Shade<br>Tolerance | Wildlife Value   |
| **Silky willow<br><i>Salix sericea</i>            | P, R, A | OBL                      | 5.0-<br>7.0 | very tolerant   | up to 12'  | intermediate       | food source – foliage and<br>nectar                          |
| American elder <i>Sambucus<br/>canadensis</i>     | P, R, A | FACW-                    | 5.0-<br>7.0 | very tolerant   | 6-12       | intermediate       | high value food source-<br>fruit, twigs and leaves           |
| Meadowsweet<br><i>Spiraea latifolia</i>           | P, A    | FACW+                    | 6.5-<br>7.5 | very tolerant   | 3-6        | intermediate       | food source-fruit and<br>twigs                               |
| Highbush blueberry<br><i>Vaccinium corymbosum</i> | P, R, A | FACW-                    | 4.5-<br>7.5 | very tolerant   | 6-12       | tolerant           | food source-fruit  |
| **Witherod <i>Viburnum<br/>cassinoides</i>        | P, R, A | FACW                     | 5.0-<br>7.0 | very tolerant   | 6-12       | tolerant           | food source-fruit  |
| Southern arrowwood<br><i>V. dentatum</i>          | P       | FAC                      | 5.0-<br>6.5 | tolerant        | 6-12       | tolerant           | food source-fruit  |
| Nannyberry<br><i>V. lentago</i>                   | P, A    | FAC                      | 5.0-<br>7.0 | intolerant      | 20-35      | intermediate       | food source – fruit and<br>twigs                             |
| Blackhaw<br><i>V. prunifolium</i>                 | P, R, A | FACU                     | 5.0-<br>7.5 | very intolerant | 20-35      | intolerant         | food source – fruit  |
| Northern arrowwood<br><i>V. recognitum</i>        | P, R, A | FACW-                    | 5.0-<br>7.0 | tolerant        | 6-12       | tolerant           | food source-fruit and<br>nectar and pollen of the<br>flowers |

Pennsylvania Department of Environmental, Bureau of Watershed Management. (2010). Riparian Forest Buffer Guidance, Document Number 394-5600-001. Online at: <http://www.elibrarv.deo.state.pa.us/dsweb/Get/Document-82308/394-5600-001.pdf> Accessed September 28, 2016.  
Key for Appendix B:

\* Short lived: Trees < 100 years Shrubs < 20 years

\*\* May be hard to find in a nursery

P = Piedmont Province

R = Ridge and Valley Province

A = Allegheny Plateau Province

OBL = Obligate Wetland

FACW = Facultative Wetland

FACU = Facultative Upland

UPL = Obligate Upland