

*Atlantic Sunrise Project – PA DEP Chapter 105 Joint Permit Application
Transcontinental Gas Pipe Line Company, LLC
Schuylkill County*

APPENDIX L -2

**RIPARIAN AREA IMPACT ASSESSMENT AND RESTORATION
PLAN**

Revised July 2017

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

APPENDIX B
LIST OF APPROVED SPECIES FOR REPLANTING

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

APPENDIX B
LIST OF APPROVED SPECIES FOR REPLANTING

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

APPENDIX B
LIST OF APPROVED SPECIES FOR REPLANTING

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