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Save Barnegat Bay
725B Mantoloking Road
Brick, NJ 08723

Re: NJDOT Route 35 Reconstruction Plans – Landscape Review

To Whom It May Concern:

I have reviewed the rather voluminous plans of the Route 35 Reconstruction project with respect to the Landscape Plans portions of the Construction Plans and wish to report on its content.

It would seem that the primary opportunity of creation of an important vegetative corridor through the middle of the barrier island has been missed. Route 35 is the central vehicular spine but could also have been designed as a more continuously vegetated parkway or true boulevard. The larger missed opportunity appears to be the failure to envision Route 35 as a potential, significant ecological feature in transect from ocean beach, through its “upland” middle, to the bayshore.

This barrier island has been transformed by Hurricane Sandy. Collectively, we are creating a new continuous dunescape of sorts up and down the oceanfront. While it will not look like the natural fore and back dunes of Island Beach State Park, time, and nature’s dynamic influence will likely help to diversify and make this feature an ecologically significant change in the environment.

The bayfront varies with some undeveloped stretches, but is largely composed of residential development and lagoons. It is a disturbed environment and one where the heretofore, relative constants of scenery are now changing through elevation of dwellings and businesses. The shoreline itself is, however, unlikely to revert to a natural state.

As privately owned land, within regulatory constraints, rebuilds and remolds itself, given the new realities, Route 35 reconstruction offers an enormous opportunity to provide an upland, contiguous, linear zone of ecological significance. Bird and butterfly migrations should have been fostered by adequate or superior design.

In reality, the construction plans fall far short of the mark in several important respects.

A spread sheet evaluation of the content of the proposed plantings is attached, and gives a clear picture of the lack of focus in providing a complete design. Such a design at its heart would employ native species, from the small perennials, ornamental grasses, on through shrubs and trees of varied dimensions. Non-native plants might be an afterthought in that plan, but not its vegetative mainstay.

The types of plants selected apparently have a singular focus, summer floral display, without much regard to provide plants which give complete benefits of cover, food, nesting sites and all the attributes which native plants provide for our native and migratory fauna. Other general areas where the design appears to founder, is a diminished salt tolerance (airborne and in the soil) of some species compared to the best, an overall lack of species and cultivar diversity, use of locally invasive species, and the lack of caution in the use of species already deemed invasive elsewhere.

The following is a critique of the plantings proposed in the various species category types. Background information and suggestions for species to augment or substitute in place of the harmful are provided to improve the ecologically underperforming species now proposed on the NJDOT Route 35 Reconstruction plans.

Large and Medium Scale Deciduous Trees Subjective Evaluation Grade = Zero

One of the ways which increase the ecological viability and continuity is the creation of continuous areas of tree canopy. Critically, there is a total lack of large- and medium-scale trees in the entirety of the project. Developing areas of continuous tree canopy in design is a goal that was not achieved, and could not be achieved in any location, given that no large trees are used. This most basic feature of roadside landscape design has been neglected

Anecdotally, large-scale trees tend to stay smaller in this environment, developing a salt-spray horizon profile altering the typical habits of any given species. Nevertheless, I have personally observed trees in the many remote places of the northern natural area of Island Beach State Park, which, directly adjacent to the project site, serves as our best guide for optimal speciation in the project. In that area, there are many large-trunked, Southern Red (Quercus falcata), Black Oak (Quercus velutina), Willow Oak (Q. phellos), other Oak species and their natural hybrids. We also see medium sized shade trees such as Black Gum (Nyssa sylvatica) and Persimmon (Diospyros virginiana) here. Hawthorns (Crataegus spp.) could also have been included in places. All would be good design choices in locations where appropriate.

Other species not native to Ocean County, but native to slightly more southern localities, such as Bald Cypress (Taxodium distichum) and Southern Magnolia (Magnolia grandiflora) would also have been worthy of inclusion on the plans.

Small Deciduous Trees

Subjective Evaluation Grade = F

In the species type which will have the largest biomass of the plantings provided, the species chosen have little value ecologically. No true native of the barrier island was chosen; all are native to elsewhere. The vast majority are native to other continents.

Wise choices would have included the Shadblow Serviceberry (*Amelanchier canadensis*) and some Persimmon (*Diospyros virginiana*) as well. As suggested above, the Hawthorns (*Crataegus* spp.) are a diverse native group, some having good salt tolerance, some cultivars being thornless as well. These species are all useful in providing multi-season appeal.

The plan displays a gross over-reliance on a few cultivars of the Crape-Myrtle (*Lagerstroemia* spp.), which is native to Asia, While the Saltcedar (*Tamarix ramosissima*) is known to be a highly invasive non-native tree in the western part of the United States, it is not yet a serious pest tree here. The Amur Maple is a known invasive in the east and its use is seriously questioned.

Use of Kwanzan Cherry (*Prunus serrulata* 'Kwanzan') along Route 35 is a bit myth and a bit of tradition. In some areas where they were planted decades ago, residents held to a belief that the existence of the trees would stave off rumored plans of highway widening. Of those trees, some died; the rest languished and remained small, stressed by the harshness of the local microclimate, and were never an ideal tree for local use. To continue to hold to an idea that was originally an error is folly.

The two species that are US natives on the plans' planting lists are used in numbers that are comparatively insignificant. Neither is native to the vicinity, and neither is considered to be highly salt tolerant.

Evergreen Trees

Subjective Evaluation Grade = C

The plans are considerably better in this category, as two of the three species proposed for use in the project are native to Ocean County. The Japanese Black Pine (*Pinus thunbergiana*) obviously is not.

Though Virginia Pine (*Pinus virginiana*) is proposed, one of our other Pine Barrens natives, Pitch Pine (*Pinus rigida*) is seen more frequently at Island Beach State Park's northern natural area. Sweetbay Magnolia (*Magnolia virginiana*) seen in the plans, is a highly ornamental and useful native and its use is commended and should be used in profusion.

Missing completely from the plan are the two evergreen tree species most frequently seen throughout the barrier island: American Holly (*Ilex opaca*) and Eastern Redcedar (*Juniperus virginiana*). Their absence from the design is significant. Atlantic Whitecedar (*Chamaecyparis thyoides*) is also a useful barrier area native, when available.

Southern Magnolia (*Magnolia grandiflora*) noted earlier, is a very ornamental flowering broadleaf evergreen native to extreme southern New Jersey, in wide-growing straight-species form, or narrower cultivars such as 'Kay Parris.'

Deciduous Shrubs

Subjective Evaluation Grade = D-

The factors contributing to the dismal evaluation of this category of species type is a repeat of the same problems in the above categories: overuse of the non-native species, use of Rose-of-Sharon a locally weedy invasive shrub, underutilization good natives such as Bayberry (one individual shrub at one location was proposed in the 12.5 miles of the project,) and an overall lack of diversity.

An additional, a less than optimal choice was made in the Sparkleberry Winterberry Holly (*Ilex verticillata* [sic].) As footnoted in the accompanying spreadsheet, this variety is a hybrid between the barrier island's native, and an Asiatic variety. There are many fully native, vigorous, beautiful cultivars commercially available, ranging from large to compact dense varieties like *I. verticillata* 'Red Sprite.' It is wise to plant a few male plants along with the berried, showier female. The plans erroneously called for only the female 'Sparkleberry' cultivar.

Shrubby varieties of Serviceberry (*Amelanchier* spp.) Black and Red Chokeberry (*Aronia arbutifolia* and *A. melanocarpa*) were neglected in the plans as well as Highbush Blueberry (*Vaccinium corymbosum*.) All grow vigorously in water regimes ranging from dry to moist in various locations on the barrier island. Each would be a very beneficial choice in the appropriate location. Unfortunately they were bypassed in the design for more "commodity" type plants.

Perennials

Subjective Evaluation Grade = D

Only the relatively heavy use of Pennsylvania Sedge (*Carex pennsylvanica*) kept the grade from outright failure. The reasons for the unacceptability of the choices in this category follow the general reasons in categories discussed earlier.

The use of Phlox is generally commendable; though the use of single cultivars of these species in vast number is not recommended. Should a plant disease befall even one individual plant, the likelihood of a mass die-off is much greater, as opposed to use of several varieties. Each different variety may serve as a "firebreak" to the movement of pathogens infection and insect infestation.

Another reason for the poor grade is the failure to utilize a plant such as Coastal Panicgrass (*Panicum amarum*) in the design, despite the fact that it appears as an “if and where” species. A highly ornamental cultivar ‘Dewey Blue’ is widely available. Little Bluestem Grass (*Schizachryium scoparium*) is also grossly underutilized in the design. Commonly found improved varieties such as “The Blues” and “Standing Ovation” would be an environmental and aesthetic asset.

Marsh Mallow (*Hibiscus moscheutos*) is another perennial plant with great benefits and is exceptionally ornamental. Only three plants, improperly categorized as shrubs on the plans, were used in the 12.5 mile project.

Many great native perennials support the butterfly migrations, in particular, the Milkweeds (*Asclepias* spp.) These are highly showy and typically flower in summer in shades ranging from reds, pinks, orange and white. *A. incarnata*, *A. rubra*, *A. tuberosa* are all commercially available and are locally native. For reasons unknown, none of these truly important plants are in the design plans.

There are other native perennials not listed here, which would have been worthy of consideration. Also, a woody plant which is a native evergreen groundcover, Bearberry (*Arctostaphylos uva-ursi*) is one which might have been considered in place of the 12,000+ potentially invasive Lilyturf (*Liriope muscari*) plants found in the design. Another evergreen woody groundcover, Maryland Dwarf Holly (*Ilex opaca* ‘Maryland Dwarf’) is also a fitting substitute to some of the plants used in the design.

Evergreen Shrubs

Subjective Evaluation Grade = A-

The design, commendably, has 100% local native species content in this category. The only criticism is the lack of diversity in choice. Though limited, there are a few other local species and cultivars which might have added depth or sustainability to the design. Some Sweetbay Magnolia (*Magnolia virginiana*) cultivars and selections of Atlantic Whitecedar (*Chamaecyparis thyoides*) grow in predictable shrubby forms, as well.

Summary

Native trees and other native plants are significant in the creation of habitat. They are the basis of the life cycles of the migratory birds. Bird and butterfly migrations are significant events in the natural pulse of the barrier island, and are easily seen by even the casual observer. They are events fueling the growing movement towards eco-tourism locally.

While there are many reasons why design choices evolve – visual appeal, horticultural suitability, availability of plant material, and others, it would seem that local ecological

significance was not seriously considered as a factor in deciduous trees, and to a somewhat lesser degree, plantings in general. It seems that the splash of summer color that would be provided by most of the species was the overarching force behind this design.

What is the point in the state drafting and enforcing a CAFRA law, and providing regulations regarding species use for private development in this locality, if the Department of Transportation isn't following that same NJDEP guidance for the primary use of ecologically significant native plant species? And in its truly significant scale, the size of this particular project makes this an even greater loss compared to smaller sites which fail in some way, to live up to the code and goals promulgated by CAFRA.

Though not every non-native plant has direct, dire environmental consequences, the use of large numbers of plants not native to this barrier island diminishes nature's ability to heal itself with its own local tools, native plant species.

One need only look a mile south of milepost 0.0 of the project site to invading areas of Asiatic Sand Sedge (*Carex kobomugi*.) It was planted in the 1970's by the state at the governor's residence in Island Beach State Park. At the time there were high hopes for "dune stabilization" using this vigorously spreading perennial because of its salt-resistance and ability to stabilize dunes. Today the species is a very serious local invader, displacing American Beachgrass (*Ammophila breviligulata*) and is overtaking formerly pristine natural areas miles from the site, where a design plan once haphazardly introduced this plant species. Control of it has proved impossible to date. The degradation of the environment is staggering. The eventual extent of the environmental damage caused by this foolish planting is, as yet, unknown.

As a local resident and professional for well over a quarter century, I believe that before the planting begins, that reconsideration of the species and varieties of plants chose for the Route 35 Restoration Project be made. Some of the proposed plantings are so flawed that they may become the next environmental boondoggle, like the Asiatic Sand Sedge.

I welcome input and dialogue from Save Barnegat Bay and the NJDOT in regard to this matter, in hopes that we can improve the design, and benefit both the human and natural community.

Very truly yours,



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