

**NATURAL AREA INSTALLATION
THREE (3) YEAR MAINTENANCE AND MONITORING PLAN
LAKE COUNTY DIVISION OF TRANSPORTATION
LAKE COUNTY, ILLINOIS
JANUARY 20, 2011**

Project: Delany Road Reconstruction
County Section No. 00-00093-17-WR and 00-00093-18-WR

INTRODUCTION

As part of the above highway construction project, the Lake County Division of Transportation (LCDOT) will construct a natural area, consisting of a naturalized detention area, on Lake County Forest Preserve District (LCFPD) property. The LCFPD has agreed to allow LCDOT to perform this work on LCFPD property with the understanding that LCDOT will be responsible for installing and maintaining native vegetation until establishment in all areas disturbed by the associated earthwork.

To ensure the establishment of the plant materials, LCDOT will include a Three Year Maintenance and Monitoring Period (MMP) following the installation of the natural area as shown on plans. At the end of the MMP, the planted native vegetation areas shall meet specific acceptance criteria before the areas are turned over to LCFPD for long term maintenance. The details of the MMP and the acceptance criteria are provided below. They are also included in the LCDOT Natural Area Installation (NAI) special provisions included in the contract specifications.

At the completion of the MMP, LCDOT and LCFPD will jointly inspect the natural area to determine what areas have met the acceptance criteria and what areas have not. Following the inspection and issuance of the final monitoring report, areas meeting the acceptance criteria will be turned over to LCFPD. Unsuccessful areas will remain the responsibility of LCDOT. As part of the joint inspection corrective action(s), if any, will be determined. The corrective action(s) may require LCDOT to extend the MMP.

Additional maintenance and monitoring beyond the three year period shall only be required for those specific portions of the NAI which fail to meet the acceptance criteria. Exhibits shall be prepared by LCDOT to document the areas in compliance and the areas in non-compliance. Any areas turned over shall be clearly defined in the field. Staking will be used to delineate which areas fall under each agency's management.

QUALIFIED LANDSCAPING CONSULTANT

On behalf of LCDOT, a Consultant will be engaged to oversee the NAI from the initial delivery of seed, sod, wetland plants, trees and shrubs through the final acceptance by LCFPD. The Consultant will act as the LCDOT representative for all aspects concerning the preparation, planting, monitoring and maintaining of the NAI.

The Qualified Landscaping Consultant shall be defined as an individual or company with at least five years of demonstrated experience in natural area management. The Qualified Landscaping Consultant shall have at a minimum:

- Staff experienced in native plant identification
- Licensed herbicide applicators
- Training in the completion of prescribed burns.

MONITORING

The Consultant will visit the site during the MMP a minimum of three times a year during the growing season. The visits will occur on or about May 1, July 1, and September 1, in the planting year(s) and each of the three years of the MMP. The visits will be conducted to determine the progress and health of the vegetation within the native planting area. The consultant will evaluate the status of the plantings and the level of the acceptance criteria achieved. Additionally, the Consultant shall determine if remedial measures are required and recommend procedures to correct any deficiencies in the plantings.

The vegetative monitoring shall be based on meander surveys of the various disturbed areas. Large community types will have multiple meander surveys completed each year to provide a better representative evaluation of the overall area and to be able to clearly identify those areas which are deficient.

THREE YEAR MAINTENANCE AND MONITORING PERIOD

The Three Year Maintenance and Monitoring Period will begin the calendar year after planting, regardless of when planting occurs. In the event that the plantings are not completed in one calendar year, the MMP will begin the year after all the plantings have been completed.

MPP Example

Planting Occurs	1 st Year MMP	2nd Year MMP	3rd Year MMP
April 2012	Ends Sept 1, 2013	Ends Sept 1, 2014	Ends Sept 1, 2015
	1 st Annual Report Issued Sept 30, 2013	2 nd Annual Report Issued Sept 30, 2014	3 rd Annual* Report Issued Sept 30, 2015

At the end of each year of the MMP the Consultant shall evaluate the installed plant materials according to the acceptance criteria listed below and contained in the NAI special provisions. An annual report will be issued following the completion of each year of the MMP. The report will, at a minimum, address the level of acceptance criteria met and include any applicable remedial recommendations.

At the end of the 3rd year of the MMP, if all of the NAI passes the acceptance criteria, the MMP will be completed.

ACCEPTANCE CRITERIA

The acceptance criteria are predetermined goals for guiding and measuring success. Native plant communities of various types will be created throughout the NAI. This project is being established under adaptive management principals; therefore, the community type established is flexible. Regardless of the proposed community type(s), the areas will be assessed based on the community type present. Community type(s) shown on the engineering plans are for illustrative purposes and reflect the designer's best estimate as to the community type that will establish. Deviations in community type are acceptable, and management will proceed accordingly to achieve the acceptance criteria of the established community. Creation of specific acres/areas of the various community types is not important, only that each established community meets the following minimum performance standards.

The acceptance criteria listed are goals. Failure to meet the standard does not automatically require remedial action if the area in question is in substantial conformance.

1. **Seeding:** For acceptance, seeded areas shall meet the following conditions at the end of the Three Year Maintenance and Monitoring Period:
 - a. No seeded area shall have more than one square yard (areal coverage) devoid of vegetation.
 - b. No more than 25 percent of the total species present within the NAI, may be comprised of non-native or invasive species as measured by areal coverage. The non-native or invasive species include, but are not limited to, the species listed below. If this standard is not met, remedial activities shall be implemented, as soon as possible (i.e., as soon as weather conditions allow) in order to control the non-native or invasive species.

Non-Native & Invasive Species

Garlic Mustard	(<i>Alliaria petiolata</i>)
Common Buckthorn	(<i>Rhamnus cathartica</i> and <i>frangula</i>)
Reed Canarygrass	(<i>Phalaris arundinacea</i>)
Purple Loosestrife	(<i>Lythrum salicaria</i>)
White Sweetclover	(<i>Melilotus alba</i>)
Yellow Sweetclover	(<i>Melilotus officinalis</i>)
Multiflora Rose	(<i>Rosa multiflora</i>)
Canada Thistle	(<i>Cirsium arvense</i>)
Crownvetch	(<i>Coronilla varia</i>)
Cutleaf Teasel	(<i>Dipsacus laciniatus</i>)
Fuller's Teasel	(<i>Dipsacus sylvestris</i>)
Bush Honeysuckles	(<i>Lonicera</i> spp.)
Common Reed	(<i>Phragmites australis</i>)
Canada & Kentucky Bluegrass	(<i>Poa compressa</i> and <i>pratensis</i>)
Sandbar Willow	(<i>Salix interior</i>)
Sericea Lespedeza	(<i>Lespedeza cuneata</i>)
Leafy Spurge	(<i>Euphorbia esula</i>)
Spotted Knapweed	(<i>Centaurea biebersteinii</i>)
Japanese Knotweed	(<i>Polygonum cuspidatum</i>)

2. **Tree and Shrub Planting:** For acceptance, 100 percent of all trees and shrubs shall be alive and successfully rooted at the end of the Three Year Maintenance and Monitoring Period.

ANNUAL MONITORING REPORT

An annual monitoring report summarizing the sampling data will be prepared by the Consultant and submitted to LCFPD by September 30 for each of the three years of the MMP. The report will include a discussion of the progress made towards meeting the acceptance criteria and proposed actions to deal with any deficiencies. Representative photographs of the restoration areas taken at the time of sampling will be included in the report. Particular attention will be given to the progress of the vegetation at the end of the second full growing season, as the relative success of the plantings may be reasonably predicted at that time.

MAINTENANCE RESPONSIBILITY

It will be LCDOT's responsibility to correct any deficiencies in the native vegetation planting areas during the Three Year Maintenance and Monitoring Period or until such time as the final written approval for the restoration is received from LCFPD. This includes, but is not limited to, replanting and selective herbicide use. If an area fails to meet or exceed the acceptance criteria, additional remedial work may be required for that specific area until the performance standards are substantially met.