Churchill Park Restoration Plans - 2010

Background History
Churchill Park is boarded on north by St. Charles Road, the south by Geneva Road, the west by Churchill School and the east by the Saddlewood neighborhood. The site is 23.3 acres and was purchased in three different parcels over the course of approximately 30 years.

The northern portion of the park includes three ponds, a cleansing basin, parking lot, shelter, open areas and a residential structure that will be removed. An intermittent stream borders the western edge near one of the ponds and continues off site to the west and northwest. Areas around the ponds have been re-vegetated with native wetland and sedge meadow species. Prairie plants have been reintroduced to the drier areas surrounding the ponds. Mowed turf and walking paths are also present.

The southern half of the site is currently wooded and serves as a drainage-way for areas south and east of the property. This area is highly overgrown with European buckthorn and non-native bush honeysuckle species. There are walking paths, including a boardwalk, and an entrance near the school. In recent years, storm water run-off has drastically increased. A portion of the trail is now flooded and the site has more standing water. In the fall of 2009, a new wetland delineation was performed and indeed, the wetland acreage has increased. Drier areas still exist along the western and southern edges.

Based on historical records and maps, this site was most likely prairie and wet prairie/marsh prior to settlement in the region. Earliest records state that the site was farmed prior to 1861 when it was owned by Mr. John Newton Nind. The site continued to be farmed through the mid-1900s. Based on soil maps, topographical maps, and the current site conditions, drainage tiles may have been installed in the southern half of the park to facilitate cultivation. The soil type identified in these flooded areas is Ashkum silty clay loam, a hydric soil. Historical analysis of soil properties indicates the native landscape may have been marsh dominated by grasses and sedges, which is much different than the current conditions.

Proposed Work
The intention of restoration activities is to remove the non-native, invasive species found primarily in the southern half of the property. The target species include:

European Buckthorn	Rhamnus cathartica
Bush honeysuckles	Lonicera maackii
	Lonicera X muendeniensis
	Lonicera tatarica
Reed Canary Grass	Phalaris arundinacea
Garlic Mustard	Alliaria petiolata
Common Burdock	Arctium minus
Dame's Rocket	Hesperis matronalis
Canada Thistle	Cirsium arvense

- The buckthorn and honeysuckle will be cut, stacked and chipped. To the maximum extent practical, stacking and chipping will not occur within a special management area. The District anticipates that most piles will be remain in place for two weeks to several months. Some piles will be burned in the winter pending an EPA burn permit. Herbicide will be applied to cut stumps. Smaller plants will be pulled or stems will be hand-wiped with herbicide. Mature, fruiting female trees existing in current "non-work" sections may be identified and removed.

- Reed canary grass will be controlled by removing seed heads and through the use of an aquatic herbicide.

- Garlic mustard will be hand pulled when in flower and herbicide will be used in early spring or late fall when other herbaceous plants are dormant.

- Burdock and Canada thistle will be controlled by herbicide.

- Dame's Rocket will be hand pulled and herbicide may be used in the fall, as it remains green, if populations become too large.

Once the invasive species have been removed, erosion control cover crop seed will be installed on bare soil areas within seven days in compliance with current NPDES requirements. Cover crop will consist of fast-germinating, non-persistent species such as seed oats (*Avena sativa*) applied at 32 lbs/acre (spring/summer) or 64 lbs/acre (fall). Wetland areas may use alternate or additional species, such as annual rye (Lolium multiflorum) and an appropriate wooded wetland seed mix for temporary soil stabilization.

The District will determine the need for supplemental seeding by conducting informal meander surveys over a two-month period to determine if a native seedbank develops. If there are not at least five desirable native seedlings per square foot within two months (during the growing season), appropriate native plant material will be introduced in the form of seeds, plugs, and bare-root shrubs and trees. Please see attached list of native plants that may be used in these restoration efforts.

Where buckthorn and honeysuckle exist in special management areas, wetland and wetland buffer zones, the roots will remain intact, serving to stabilize the soil. Other functions these non-native species provide is storm water infiltration, screening, perching/nesting habitat, and rainfall interception. Most research, however, shows that the presence of non-native aggressive plants *negatively* alters the functions of the ecosystem. Therefore, once invasive woody species are removed, the area will be carefully monitored to assess if any existing native plant populations rebound and function to stabilize the soil and help to filter storm water. In areas where native plants have less than five native seedlings per square foot, we will install an appropriate combination of native trees, shrubs, grasses, sedges and/or forbs that will replace the affected functions. Based on the historical evidence, this area most likely was marsh, and therefore the native vegetation installed will most likely consist of forbs, grasses and sedges.

Reed canary grass is also present in special management areas. Interspersed among this invasive grass are desirable native grasses, sedges and forbs. Once the reed canary grass is controlled, these areas will

be monitored to determine if the native plants recover. If these areas need further assistance, native grass and sedge seeds (from well established areas on site) will be harvested and spread into these areas. Additional native seeds and plugs may also be purchased.

Justification for the work
European Buckthorn is found throughout the southern portion of the park. This incredibly aggressive species can and has created dense thickets in which other tree, shrub and herbaceous species cannot survive. This species spreads by berries dropped on site as well as carried by birds. Mature female trees can produce over 600 viable seeds. Research also has shown that all parts of this plant may have allelopathic qualities that can leach into the soil and prevent other species from growing. Removal of buckthorn may allow herbaceous and native shrub plants to return to those sections.

Bush honeysuckles are the main competitor with the buckthorn. Once buckthorn is removed, these species may easily take over in those sections. However, if honeysuckle is found among the buckthorn stands and there are no other native shrubs or small trees present, isolated honeysuckle shrubs will not be cut. This will temporarily fill a niche for birds and animals until native shrubs can be planted.

There are sections of reed canary grass that are rapidly expanding. These populations are located upstream of the pond areas to the north. It is urgent to address this species now before it spreads into the higher quality areas. In some areas, native sedge and grasses exist among the reed canary grass. Great care will be taken to control the invasive while not disrupting the native species.

Garlic mustard is found in pockets throughout the park. A large expanding population is located near the bridge in the northeastern section. This is upstream of the entire site and needs to be controlled to prevent seed from spreading throughout the park.

Burdock and Canada thistle are found along trails. Due to their location, seeds may rapidly spread throughout the park as seeds adhere to traveling animals and people.

Dame's Rocket is a prolific seed producer and can become competitive with native herbaceous plants.

Schedule
Monthly restoration workdays are scheduled for public, scouts, and community group participation. Work will be adjusted to meet the abilities of the group, as well as correlate to appropriate seasonal work (i.e. garlic mustard removal in the spring before it sets seed). Work will also take place when staff is available and for special group restoration events.

The 2010 monthly work dates are: January 30; February 20; March 13; April 17; May 22; June 19; July 24; August 28; September 25; October 23; November 20; and December 18.

Map
Please see the Churchill Park map. This map includes future development plans. Many of the features do not currently exist. The sections highlighted indicate where buckthorn and honeysuckle removal will be concentrated in 2010. The larger section of garlic mustard is identified. Elsewhere, garlic mustard,

burdock, Canada thistle, and dame's rocket occur throughout the park and are not mapped. The main populations of reed canary grass are also highlighted.

Potential **Native Plants to be Installed**

Trees

Bitternut Hickory	*Carya cordiformis*
Kentucky Coffee Tree	*Gymnocladus dioica*
Swamp White Oak	*Quercus bicolor*
Basswood	*Tilia Americana*
Sycamore	*Plantus occidentalis*
Wild Plum	*Prunus americana*

Shrubs

Elderberry	*Sambucus Canadensis*
Black Current	*Ribes americanum*
Pagoda Dogwood	*Cornus alternaifolia*
Buttonbush	*Cephalanthus occidentalis*
Nannyberry	*Viburnum lentago*
Wild Plum	*Prunus Americana*

Grasses & Sedges

Fowl Manna Grass	*Glyceria striata*
Silky Wild Rye	*Elymus villosus*
Virginia Wild Rye	*Elymus virginicus*
Bottlebrush Grass	*Hystrix patula*
Sedge species	*Carex- tribuloides sparganoides*

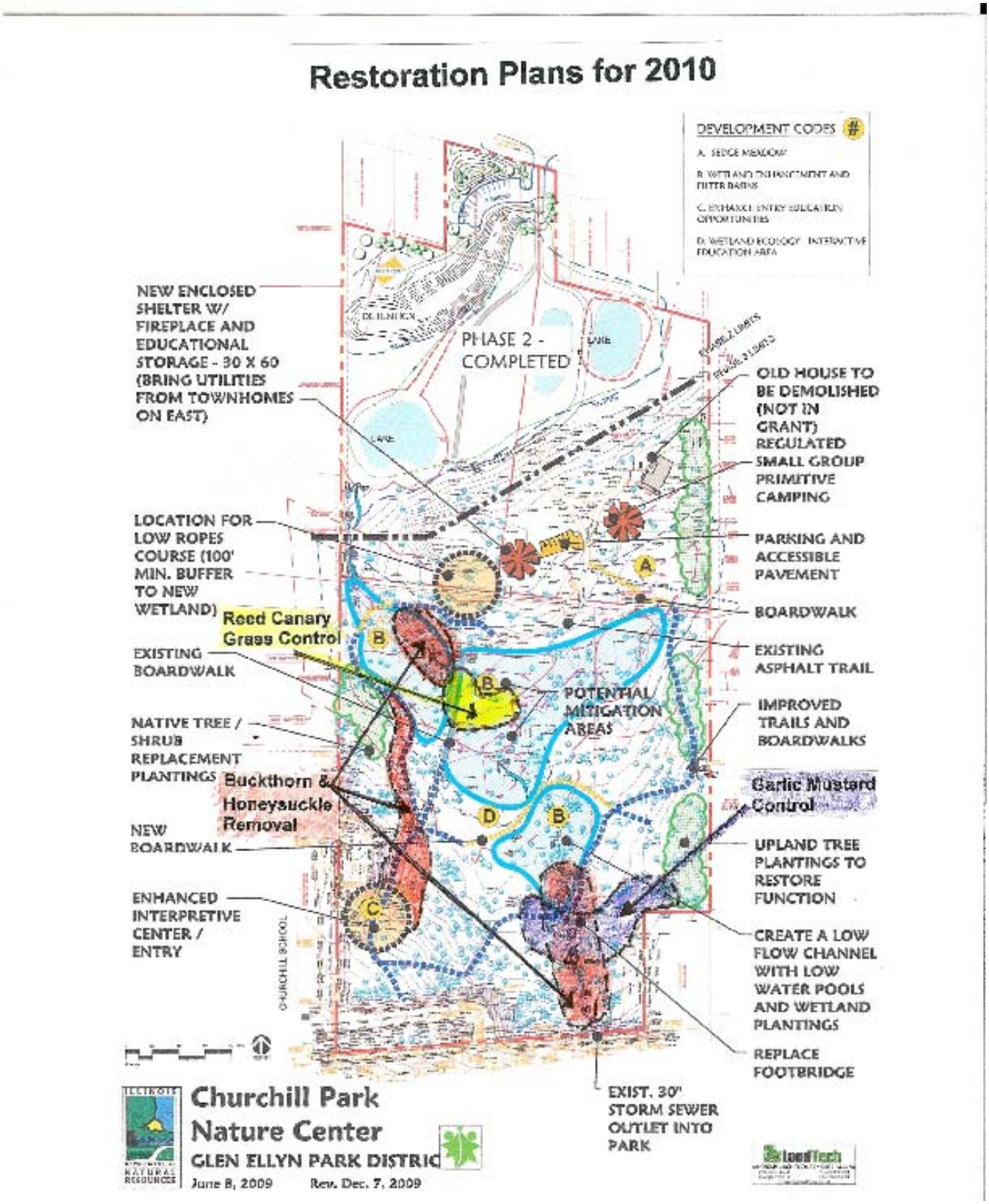
Aquatics

Common Bur Reed	Sparganium eurycarpum
Great Bulrush	*Scirpus validus*
River Bulrush	*Scirpus fluviatilis*
Dark Green Rush	*Scirpus atrovirens*
Common Water Plantain	*Alisma subcordatum*
Large-Flowered Water Plantain	*Alisma trivial*
Sweet Flag	*Acorus calamus`1*

Forbs

Smartweed	*Polygonum punctatum*
Toothwort	*Dentaria laciniata*
Cow Parsnip	*Heracleum maximum*
Hairy Wood Mint	*Blephilia hirsute*
Short's Aster	*Aster shortii*

Swamp Buttercup	*Rananculus septentrionalis*
Finged Loosestrif	*Lysimachia ciliate*
Golden Alexanders	*Zizia aurea*
Woodland Sunflower	*Helianthus divaricatus*
Brown-eyed Susan	*Rudbeckia triloba*
Wild Golden Glow	*Rudbeckia laciniata*
Wingstem	*Actinomeris alternifolia*
Ditch Stonecrop	*Penthorum sedoides*
Cardinal Flower	*Lobelia cardinalis*
Wild Ginger	*Asarum canadense*
Wild Geranium	*Geranium maculatum*
Purple Joe Pye Weed	*Eupatorium purpureum*
Blue Flag Iris	*Iris virginica*
Spiderwort	*Tradescantia ohiensis*
Virginia Bluebells	*Mertensia virginica*
Tall Bellflower	*Campanula Americana*


Restoration Plans for 2010
DEVELOPMENT CODES #
A. SEDGE MEADOW
B. WETLAND ENHANCEMENT AND FILTER BASINS
C. ENHANCE ENTRY EDUCATION OPPORTUNITIES
D. WETLAND ECOLOGY - INTERACTIVE EDUCATION AREA
NEW ENCLOSED SHELTER W/ FIREPLACE AND EDUCATIONAL STORAGE - 30 X 60 (BRING UTILITIES FROM TOWNHOMES ON EAST)
PHASE 2 - COMPLETED
OLD HOUSE TO BE DEMOLISHED (NOT IN GRANT) REGULATED SMALL GROUP PRIMITIVE CAMPING
LOCATION FOR LOW ROPES COURSE (100' MIN. BUFFER TO NEW WETLAND)
PARKING AND ACCESSIBLE PAVEMENT
Reed Canary Grass Control
BOARDWALK
EXISTING BOARDWALK
EXISTING ASPHALT TRAIL
POTENTIAL MITIGATION AREAS
IMPROVED TRAILS AND BOARDWALKS
NATIVE TREE / SHRUB REPLACEMENT PLANTINGS
Buckthorn & Honeysuckle Removal
Garlic Mustard Control
NEW BOARDWALK
UPLAND TREE PLANTINGS TO RESTORE FUNCTION
ENHANCED INTERPRETIVE CENTER / ENTRY
CREATE A LOW FLOW CHANNEL WITH LOW WATER POOLS AND WETLAND PLANTINGS
REPLACE FOOTBRIDGE
EXIST. 30" STORM SEWER OUTLET INTO PARK
Churchill Park Nature Center
GLEN ELLYN PARK DISTRICT
June 8, 2009
Rev. Dec. 7, 2009