INFORMATIONAL PACKET

ON

CONSERVATION EASEMENTS

For the
Community Development and Viability Committee

Presented by

Roger H. Rousse
Director of DPS

September 22, 2005

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CHESTER HILLS 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309-3033

September 22, 2005

CDV Committee Members

RE: Oakland Land Conservancy
Management Approaches to Conservation Easements

Dear Committee Members.

On September 20th, I met with two members of the Oakland Land Conservancy, Dona Folland, Executive Director and Erin Lavender, Stewardship Coordinator. The Conservancy has a history of conservation easement management with Oakland Township, and we discussed the various methods of acquiring and maintaining conservation easements. This land management issue has come to our attention due to multiple encroachments on our existing easements that the Michigan Department of Environmental Quality has failed to maintain for financial reasons.

The methodology for maintaining existing easements begins with a records search and monitoring program set up. This may require up to 12 hours per parcel, with an estimated cost of $500 per easement. It includes a detailed analysis of the legal descriptions associated with separate conveyances, deed restrictions, plat maps and subdivision records. Many types of easements exist, including natural features, tree conservation, wetland, steep slope and vegetative buffers.

Although not mandatory, a suggested second step is the creation of a Baseline Documentation Report. This includes an inventory of natural and man-made features, plat, soil, aerial and topographic maps, as well as an animal and plant species list. The estimated cost for the baseline report is $500 per easement.

The suggested third step is the creation of a management plan that would detail work and communication plans, a timeline for implementation, and a species-monitoring checklist. The estimated cost for the management plan is $500 per easement.

And finally, the program should be followed up with public education, easement monitoring and implementation of the management plan. The total initial cost includes:

- $500 per easement for set up of the monitoring program.
- $500 per easement for the baseline documentation report.
- $500 per easement for the management plan.

The ongoing costs per year are proposed at:

- $300 per easement for monitoring.
- $500 per year per easement for implementation of the management plan.

Although an entire inventory of the number of easements has not been completed, a rough estimate puts the number at approximately 200. At 200, the first year cost would be:

(200 x 500 + 200 x 500 + 200 x 500) = $300,000

Annual monitoring and management plan implementation costs would be:
(200 x 300 + 200 x 500) = $160,000 per year.

The Conservancy has not exercised enforcement action for easements, and will rely on the City of Rochester Hills to exercise enforcement rights associated with the description of the properties. The Conservancy has developed a non-confrontational approach to easement management, and prefers education through face-to-face contact with property owners.

The figures above are intended for the management of existing easements. The Planning Commission can incorporate the financial burden for new easements into development approvals. Provisions can be placed on development for the baseline documentation report, the management plan, and a source of funding for the ongoing maintenance of the easements. Included with this report is suggested language that could be used for the establishment of provisions for the continued management and maintenance of conservation easements.

Recommendation

It is recommended by the Department of Public Services that the Community Development and Viability Committee propose to the Planning Commission the creation of a Strategic Conservation Easement Program that includes creation of guidelines for adoption, maintenance and management of new conservation easements. It is also recommended that a Capital Improvement Project (CIP) be created for the maintenance and management of existing conservation easements funded through the Facilities Fund and enforced through the Building Department.

Sincerely,

Roger A. Rousse

Roger H. Rousse
Director, Department of Public Service

RHR/jfd

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EXHIBIT B: BASELINE DOCUMENTATION REPORT

Joseph Property Conservation Easement

Prepared for: Great Lakes Bioregional Land Conservancy
P.O. Box 303, Lapeer, Michigan, 48446

August 2, 2005

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Oakland Land Conservancy
PO Box 80902
Rochester, Michigan 48308-0902
248.601.2816

Section I. Executive Summary

Susanne Greenlee, Land Protection Specialist, Oakland Land Conservancy

This report has been prepared in conjunction with a Conservation Easement granted to the Great Lakes Bioregional Land Conservancy (GLBLC) with assistance from the Oakland Land Conservancy (OLC) by Mr. Ronald Joseph, and is attached to the Conservation Easement as Exhibit B. The Conservation Easement covers 30 acres of land in Grand Blanc Township, Michigan, as legally described in attached Exhibit A. This Baseline Documentation Report consists of maps, a depiction of all existing human-made modifications, prominent vegetation, identification of flora and fauna, land use history, distinct natural features, and photographs. By signing the Conservation Easement, the parties acknowledge that this Baseline Documentation Report is an accurate representation of the subject property at the time of this donation. All referenced documents are permanently filed in the Geographic Files of OLC and in the files of GLBLC.

Location

The protected property comprises 30 acres of land located in the N 1/2 of the NE 1/4 of the SE 1/4 of Section 29, Township 6 North, Range 7 East, Grand Blanc, Grand Blanc Township, Genesee County, Michigan. McWain Road (See Section V. **Map 1** – Grand Blanc Plat T-6-N R-7-E). Residential property borders the property on the north and east. Agricultural and wooded areas that are proposed for residential development border the property on the south and west.

Physical Description

The United States Department of Agriculture (USDA), Soil Conservation Service (SCS), Soil Survey of Genesee County, Michigan (1993) was used to determine the historic soil types found on the Property (See Section V. **Map 2** - USDA-SCS Soils Map). The majority of the property consists of Conover loam, which is a gently sloping or undulating soil on till plains and foot slopes. Many random drainageways and closed depressions are found in this soil type. A small area in the northwest part of the property has Celina-Conover loams found on till plains and uplands. This soil is found on well-drained hilltops and on side slopes of ridges. Random wet spots and depressions are found in this soil type. The surface watershed is a medium textured glacial till.

The property is nearly level with a topographic rise of approximately 16 feet. According to the U.S. Geological Survey (USGS) 7.5 minute quadrangle map for Flint South, MI the natural site elevation appears to be approximately 864 feet National Geodetic Vertical Datum (NGVD) at the northwest corner with a rise to 880 feet NGVD near the middle of the south line. Natural surface and ground water flow appears to be in a westerly-northwesterly direction. (See Section V. **Map 3** – USGS Topographic).

Land Use

The property was historically farmed and grazed. The current owner has owned the property since the early 1960's. Dogs were raised on the property and there are dog kennels and a dog run, but have not been in operation for the last 25 years. The northern bean field was allowed to grow up for the last 45 years and it is now thick with saplings.

Habitats and Ecosystems

The presettlement habitat (circa 1800) was oak hickory forest. A mixed oak savanna was documented in a recent evaluation. The property currently consists of dry-mesic southern forest (75%), old field (20%) and southern swamp (5%). Vernal ponds are found scattered throughout the woodland (<1%). Cames Drain, a

small tributary of Swartz Creek runs in and out along the west boundary. An intermittent stream runs from the wetland in the southeast corner to the creek along the west boundary. Michigan Natural Features Inventory documents that there is no indication that one is likely to find an element occurrence in this Section 29.

The dry-mesic southern forest (also known as oak-hardwood forest) is dominated by oak (*Quercus* spp.), hickory (*Carya* spp.), maple (*Acer* spp.), cherry (*Prunus* spp.) and ash (*Fraxinus* spp.). Unfortunately, the introduced emerald ash borer is a recent threat to the ash trees in the woodland and many trees are dead or dying. Spring flowers include wild geranium (*Geranium maculatum*), jack-in-the-pulpit (*Arisaema triphyllum*), trillium (*Trillium* spp.), mayapple (*Podophyllum peltatum*) and trout lily (*Erythronium americanum*).

The old field has succeeded to a thicket of dogwood (*Cornus* spp.), maple (*Acer* spp.), cherry (*Prunus* spp.), hawthorn (*Crataegus* spp.), and apple (*Malus* spp.) trees. The eastern end of the northern field and south along the eastern border is mowed.

The southern swamp is dominated by maples (*Acer* spp.), and ashes (*Fraxinus* spp.). Although the ground layer is sparse due to being inundated in the spring and sometimes into the summer, species like the wild blue flag (*Iris versicolor*), sedges (*Carex* spp.) and rushes (*Juncus* spp.) are found. In some areas poison ivy (*Toxicodendron radicans*) and blackberry/raspberry brambles (*Rubus* spp.) are abundant. There are some scattered large old oak and maple trees found throughout the property. A large wind row is found south of the old field/woodland border.

Invasive Species: There are a few invasive species found at the site. Some of the species with highest management priority include: common buckthorn (*Rhamnus cathartica*) in the woodlands, and honeysuckle (*Lonicera* spp.) and autumn olive (*Elaeagnus umbellata*) in the old field near the north boundary.

Species of Concern: One species of special concern – Cooper's hawk (*Accipiter cooperii*) (G5, S3S4), was documented on the site. The forested habitat on the property is important for the number of neotropical migrant bird species that use the area, such as the American redstart, rose-breasted grosbeak and different vireos and warblers.

Structures and Disturbances

There are some existing structures located on the property. Refer to Section II.C. of the Baseline Data for a list of structures and Section V. **Map 4** – Site Map for locations.

A residential house, dog kennel and temporary garage are found along the eastern end of the property. The dog kennel is now used for storage. A mowed field is north and south of the house. The current landowner stated that he has not logged the property in the past 45 years. Some non-native trees and shrubs, for example Austrian pine (*Pinus nigra*), arborvitae (*Thuja occidentalis*) and lilac (*Syringa* spp.) are found around the house and mowed fields.

An old fence surrounds the property—sections of it are almost 100 years old and it is in disrepair in some places. A newer fence (last 10 years) has been erected along the north line and 40' south from the northwest corner. A fenced-in yard for the dog run is behind the house. An old downed fence runs east-west in the middle of the property.

Two old farm dumps are found near the stream along the western boundary. Both contain old cans, glass and metal pieces of equipment. Rolls of wire fencing are found along the interior fence, just west of the house. There are a few scattered pieces of debris around the property, including a tire, bedspring and plastic pool. Just west of the first dump (outside of the boundary) there is a pile of cobbles and the stream is dammed with field stones. Piles of woody debris are found along the north boundary just inside the fenceline. At the May 13, 2005 site visit (during a rain event), we noted sand and gravel from McWain Road washing onto the property just south of the driveway entrance.

There is a powerline easement along McWain Road. The previous landowner had a 5 year oil and gas lease which is now expired.

Interviews

Information for this Baseline Documentation Report was gathered through interviews, discussions, and email correspondence with the following individuals. The information from these interviews has been incorporated into the body of this report.

- April 22, 2005 Ronald Joseph, landowner, interviewed by Lisa Leger Frazier. Completed Landowner Questionnaire.
- May 13, 2005 Ronald Joseph, landowner, interviewed by Lisa Leger Frazier, Susanne Greenlee, OLC; and Mary Brown, Amy Elwert, and Fred Townsend, GLBLC.
- May 13, 2005 Robbie Beller, GIS Coordinator, Grand Blanc Township GIS Department, by Lisa Leger Frazier and Susanne Greenlee.

Site Visits

Information for this Baseline Documentation Report was gathered during site visits conducted by Oakland Land Conservancy staff members and Great Lakes Bioregional Land Conservancy Board members on:

- May 13, 2005 by Lisa Leger Frazier and Susanne Greenlee. Species lists and photographs on file.
- May 14, 2005 by Fred and Alyce Townsend. Genesee County Spring Migration Count Tally Sheet on file.
- May 18, 2005 by Susanne Greenlee and Fred Townsend. Species lists and photographs on file.

Conclusions

The property is located in Grand Blanc Township that is experiencing recent rapid development. The surrounding area will be highly developed in the next few years and the property is one of only a few undeveloped green spaces in the general vicinity.

The property provides important natural habitat within the Swartz Creek headwaters of the Flint River Watershed. The preservation of the property through this conservation easement project is an important step toward maintaining and enhancing the overall water quality of the Flint River, providing habitat for plants and wildlife. This conservation easement will help create a conservation corridor that links property along Swartz Creek. Protection of the natural and open space condition of this property will help to limit the amount of impervious surface in the watershed and ensure the quality and quantity of water resources for the downstream area.

Section II. Environmental Assessment

Lisa Leger Frazier, Director of Land Protection, Oakland Land Conservancy

An Environmental Assessment was performed on the subject property in conformance with Oakland Land Conservancy Environmental Assessment procedures to determine the probability of the presence of substances that are considered potentially harmful to the environment. The assessment consisted of research and evaluation of data that identified environmental conditions of the site that were of an obvious nature. Observance of their presence would indicate the need for further, more in-depth and sophisticated procedures of investigation.

The Active Use Area delineated within the Conservation Easement contains a single family residential structure and related outbuildings that were not reviewed for potential contamination or hazardous materials. In an interview with the Property Owner on May 13, 2005, the Owner stated that there were no known dumps, tanks or hazardous material usage on the property. Due to the date of the main house and outbuildings (prior to 1970), there is suspect of Asbestos use in the building materials. If the structures are razed, this will be addressed at that time.

The Property has been used as single-family residents since 1960 when the home was built. The Property was used to also kennel and raise dogs. A portion of the property was historically cropped but has not been planted since early 1960's.

Analysis of Historical Aerial Photographs

Historical aerial photographs of the site and adjacent property were obtained from Genesee County. Aerial photographs reviewed represented the following dates: 1998 and 2003. Section V. **Map 3** – Aerial Photograph / Topographic Map contains an aerial photograph of the subject site. The aerials were reviewed to ascertain noticeable physical conditions on the subject property and surrounding areas. Site does not appear to have changed in three years. Only the Active Use Area appears to be utilized. The area adjacent to McWain Road is mowed which includes the house and related structures. The remainder of the property appears to remain in a natural state.

Review of Government Site Lists

A review was made of Federal, State and Local environmental records that were reasonably ascertainable. The subject property was not listed in any of the databases searched. No sites appear to be within ¼ mile from subject site. The following lists were reviewed on June 17, 2005.

Michigan Department of Environmental Quality, UST/Brownfield List
Hazardous Waste Treatment, Storage & Disposal Facilities (TSD)
Leaking Underground Storage Tanks (LUST)
Part 201 Release Notifications
EPA Federal sites list
Superfund and National Priorities List
CERCLIS ID

A survey of the adjacent and surrounding area was performed to identify any potential offsite hazardous activities that may have an effect on the subject property. Land uses consisted of single family residential homes, agricultural fields and major roadways.

Conclusions

The investigation did not reveal any recognized environmental conditions within the Conservation Easement. "Recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate there is a chance of an existing release, past release, or potential future release of those substances onto the property.

In summary, based upon our visual observations and upon the data we have obtained, further investigation of the property pertaining to environmental contamination is not recommended.

Section III. Baseline Data

Susanne Greenlee, Land Protection Specialist, Oakland Land Conservancy

A. PHYSICAL DESCRIPTION & HISTORY

Feature	*Details*
Landowner	Ronald Joseph
Contact Person	Ronald Joseph
Landowner Address	9302 McWain Road, Grand Blanc, MI 48439
Landowner Phone	810-694-2851 work) 810-767-4250
Landowner Email	
Property Address	9302 McWain Road, Grand Blanc, MI 48439
Location relative to nearest major crossroads	South of Pollock Road, west of McWain Road.
Distance from OLC	38 miles
Size	30 acres
Sidwell(s)	12-29-400-014 and 12-29-400-015
Topography	Elevation varies from 864 to 880 feet.
Major Watershed	Flint
Subwatershed	Swartz Creek
Hydrology	In general, flows westerly, northwesterly direction
Soils	CvB = Conover loam, 2 to 6 percent slopes, CIB = Celina-Conover loams, 2 to 6 percent slopes
Geology	Medium textured glacial till
Current Use of Property	Residential
Adjacent Properties and current uses:	Bordered on the north by residential property, on the east by McWain Road, and on the south and west by agricultural fields and woodlands which are slated to be developed.
Access	Access road (driveway) near the northeast corner along McWain Road.

B. NATURAL FEATURES & ECOSYSTEMS

Feature	*Details*	*Site Map #*	*Photo #*
WATER COURSES			
Name	Cames Drain, tributary of Swartz Creek	N1	P1,2,18,20
Condition	good		
LAND COVER: Ecosystems and percent coverage			
1.	dry-mesic southern forest (75%),	N2	P3
2.	old field, including mowed field (20%)	N3	P4, 5
3.	southern swamp (5%).	N4	P6
4.	Vernal ponds (<1%)	N5	P7, 8
GENERAL PLANT LIST: Dominant species and relevant			
COMMUNITY TYPE: Woodlands- Dry-Mesic Southern Forest			
FQI	Not Available	N2	
1.	*Quercus alba*		
2.	*Carya ovata*		
3.	*Acer rubrum*		
4.	*Fraxinus americana (most dead or dying)*		
5.	*Prunus serotina*		
COMMUNITY TYPE: Old Field			
FQI	Not Available	N3	
1.	*Acer rubrum*		
2.	*Cornus foemina*, C. *stolonifera*		
3.	*Malus coronaria*		
4.	*Crataegus spp.*		
5.	*Rhamnus cathartica*		
6.	*Prunus serotina, P. virginiana*		
COMMUNITY TYPE: Southern Swamp			
FQI	Not Available (Note: A full inventory of species is needed.)	N4	
1.	*Acer rubrum*		
2.	*Fraxinus pensylvanica*		
3.	*Quercus bicolor*		
COMMUNITY TYPE: Vernal Ponds			
FQI	Not Available (Note: A full inventory of species is needed.)	N5	
1.	*Acer rubrum*		
INVASIVE SPECIES: Species and relevant notes			
1.	*Rhamnus cathartica*		
2.	*Elaeagnus umbellata*		
3.	*Loricera tatarica*		
4.	*Rosa multiflora*		
5.	*Berberis spp.*		
6.	*Prunella vulgaris*		

WILDLIFE: Distinguish sitings from anecdotal evidence			
1.	42 species of birds		
2.	White-tailed deer		
3.	Per Mr. Joseph: woodchuck, eastern chipmunk, opossum, skunk, eastern red fox, common cottontail		

C. Man-Made Features & Disturbances

Feature	*Details*	*Site Map #*	*Photo#*
STRUCTURE #1 Residential House			
Description	Ranch style home	X1, N2	P9, 10
Condition	good		
Dimensions			
STRUCTURE #2 Dog Kennel/Storage area			
Description	Previous dog kennel (25 years ago), now used for storage	X1, N2	P11
Condition	Good		
Dimensions			
STRUCTURE #3 Temporary garage			
Description	White plastic non-permanent garage	X1, N2	
Condition	Fairly new		
Dimensions			
STRUCTURE #4 Fence around property (except north boundary and NW corner)			
Description	Old (up to 100 years old) metal wire boundary fence		
Condition	Disrepair, down in some places (some areas newer with metal t-posts)		
Dimensions	Under 1 mile		
STRUCTURE #5 North boundary and west line near NW corner fence			
Description	Newer metal/wood fencing put up when development began	N2	P12
Condition	Fairly new		
Dimensions	¼ mile		
STRUCTURE #6 Fence around back of house (for dog run)			
Description	Metal fence with three gates	X1, N2	P13, 19
Condition	Fair, not straight, down in some places		
Dimensions	8' x unknown		
STRUCTURE #7 internal east/west fence			
Description	Old metal fence	N2	
Condition	Disrepair		
Dimensions	Unknown		
STRUCTURE #8 Northwest corner			
Description	Wooden corner	N2	P14
Condition	Fairly new		
Dimensions	6' x 15' estimate		

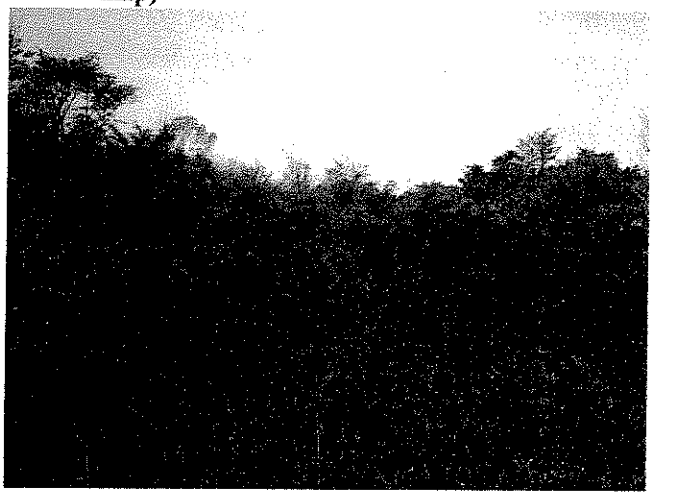
EXISTING TRAILS			
Type	Dirt trail from southwest corner of northern mowed field into woodland	N2	
Condition	fair		
Total Length	Less than 1/8 mile estimate		
UTILITY CORRIDORS			
Type	East right-of-way just west of McWain Road.	N3	P15
Condition	Fair to good		
Total Length			
DUMPS AND DISPOSAL SITES			
Type	Woody debris from north development boundary clearing	N3	P16
Size	Piles, all small, under 10'		
Description	Includes trunks, saplings and branches		
DUMPS AND DISPOSAL SITES Dump 1			
Type	Old farm dump along west line	X2, N2, near N1	P17
Size	12' x 12' estimate		
Description	Includes metal cans, glass, rusted small drum		
DUMPS AND DISPOSAL SITES Dump 2			
Type	Old farm dump along west line	X3, N2, near N1	P18
Size	15' x 12' estimate		
Description	Includes scattered glass, metal cans, lawn mower engine, sinks, pottery		
DUMPS AND DISPOSAL SITES			
Type	Fencing, wire rolls west of Structure #6	N2	P19
Size	3'- 4' diameter estimate		
Description	4 rolls of wire fencing		
DUMPS AND DISPOSAL SITES			
Type	Field rock dump west of Dump #1	N2, near N1	P20
Size	3' x 3' estimate		
Description	Cobbles (probably from agr. field), plus dam of rocks across creek		
DUMPS AND DISPOSAL SITES			
Type	Scattered debris	N2	
Size	Individual, less than 3'		
Description	Tire, plastic kid's pool, bed springs		
OTHER DISTURBANCES and ACTIVITIES			
Encroachment	None noted		
Tree-cutting	None noted		
Vegetation disturbance	None noted		
Erosion	Washout from McWain Road, south of driveway entrance	X1	P21, 22
Agricultural activity	None		
Industrial activity	None		

Section IV. Photographs and Photomonitoring Points

P1. Cames Drain, northwest corner (N1 on site map)

P2. Cames Drain, southwest corner (N1 on site map)

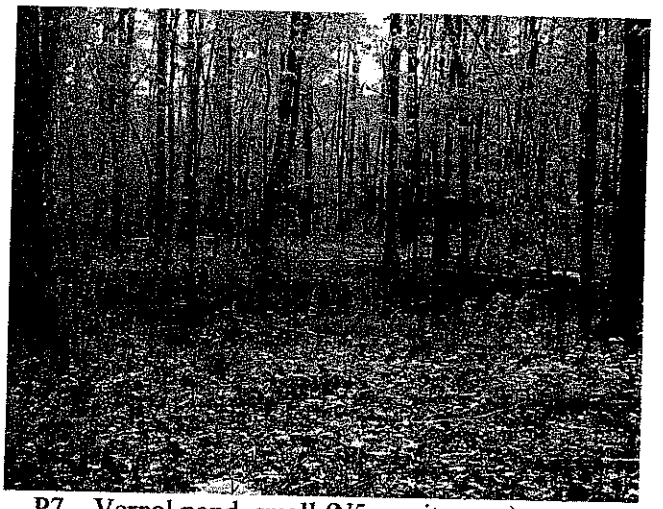
P3. Dry-mesic southern forest (N2 on site map)



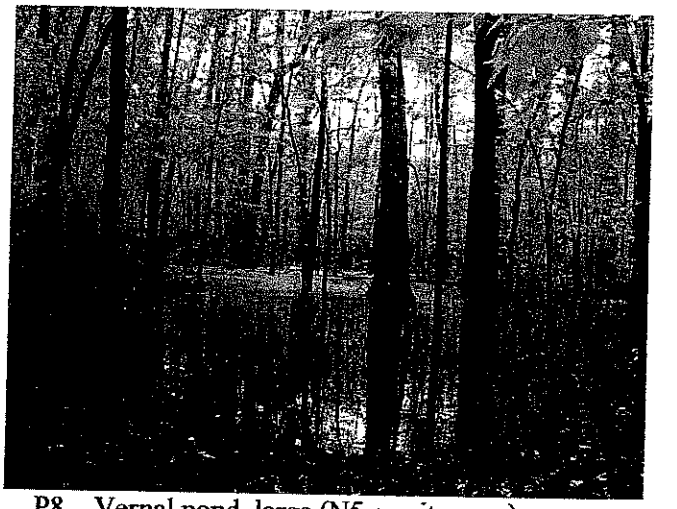
P4. Old Field (unmowed) (N3 on site map)

P5. Old Field (mowed) (N3 on site map)

P6. Southern swamp, southeast corner (N4 on site map)

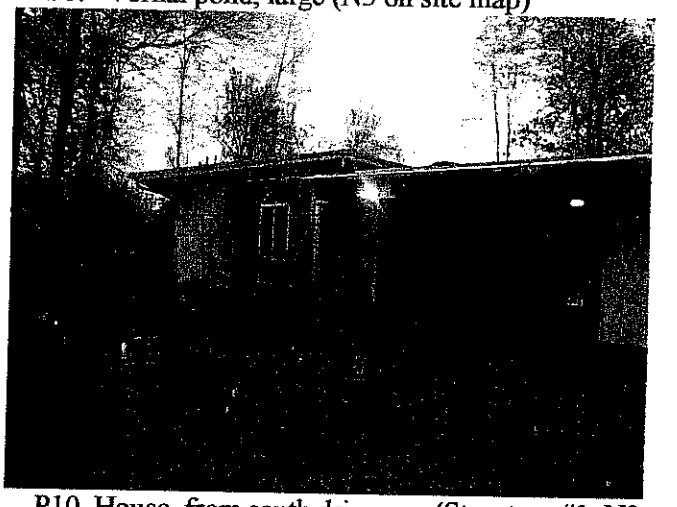


P7. Vernal pond, small (N5 on site map)



P8. Vernal pond, large (N5 on site map)

P9. House, from northeast mowed field (N3 on site map)



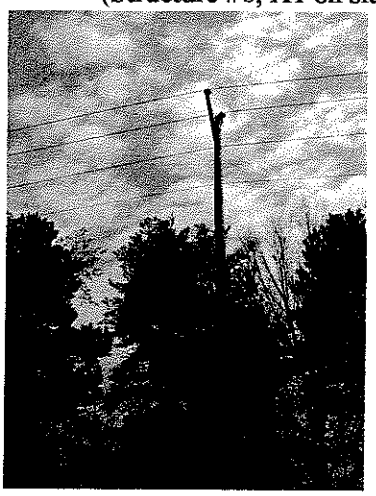
P10. House, from south driveway (Structure #1, N2 on site map)

P11. dog kennel/storage area (Structure #2, N2 on site map)

P12. North fenceline (Structure #5, N2 on site map)

P13. Fence around back of house (dog run) (Structure #6, X1 on site map)

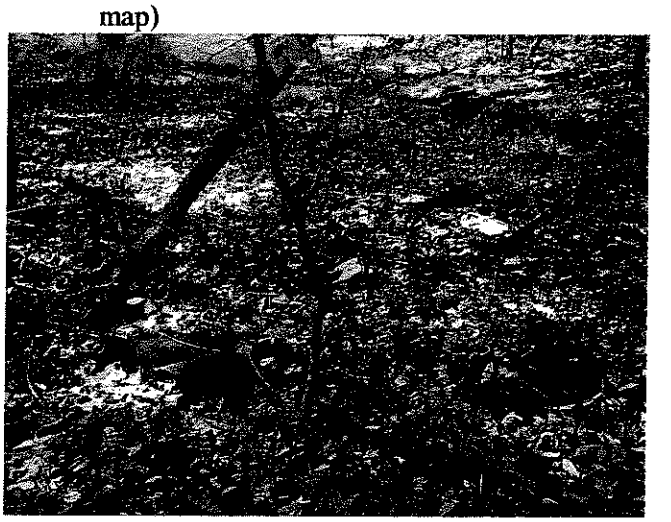
P14. Northwest corner (Structure #8,N2 on site map)



P15. Utility pole (X5, N3 on site map)

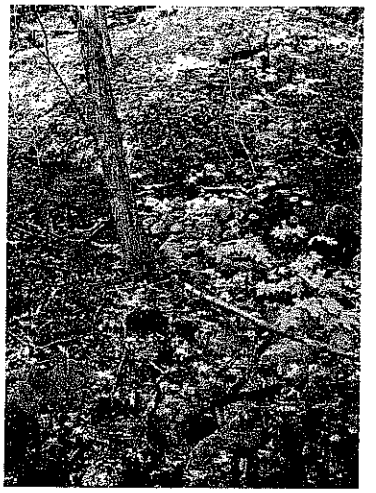
P16. Woody Debris along north line (N3 on site map)

P17. Dump #1 (X2, N2 on site map)



P18. Dump #2 (X3, N2 on site map)

P19. Fence roll near dog run internal fence (X1, N2 on site map)



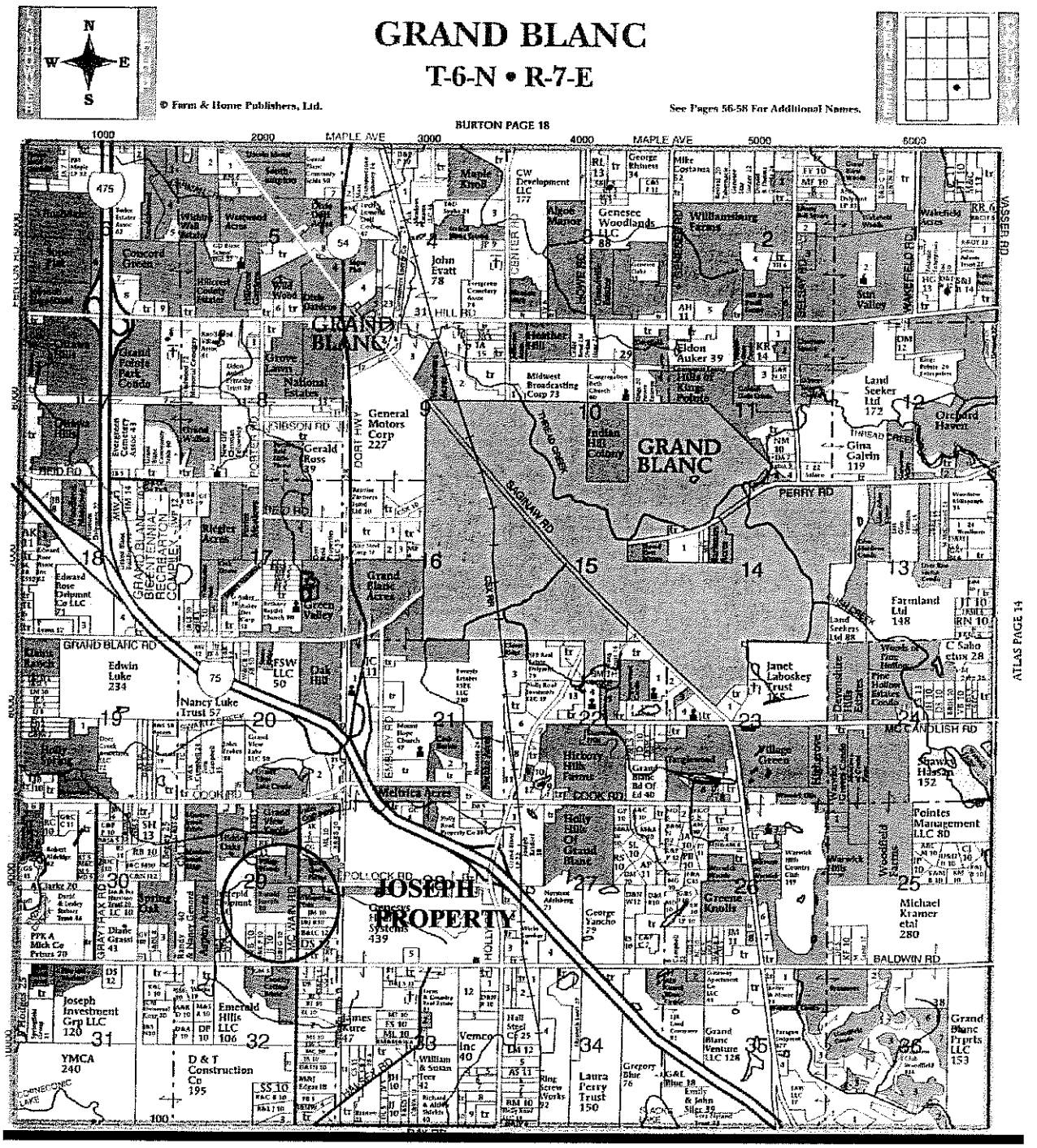
P20. Field rock dump plus dam, west of Dump #1 (X2, N2, N3 on site map)

P21. McWain Rd. erosion, from road (X1 on site map)

P22. McWain Rd. erosion, from drive (X1 on site map)

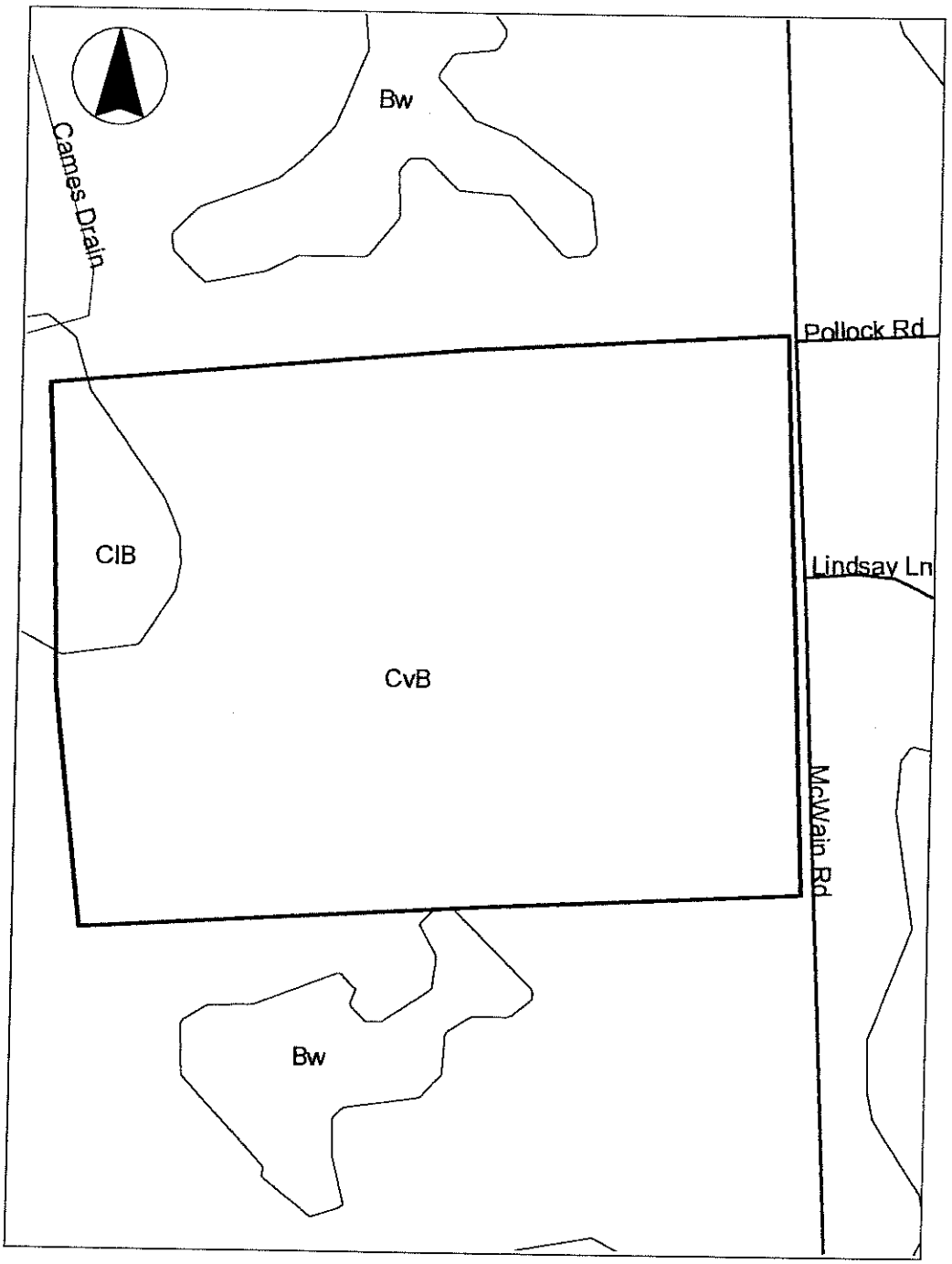
Section V. Maps

MAP 1. PLAT MAP



Key to Symbols: – Invasive Species; – Species of Concern; N – Natural Features;
X – Location Point on Site Map; P – Photograph; PM – Photomonitoring Point

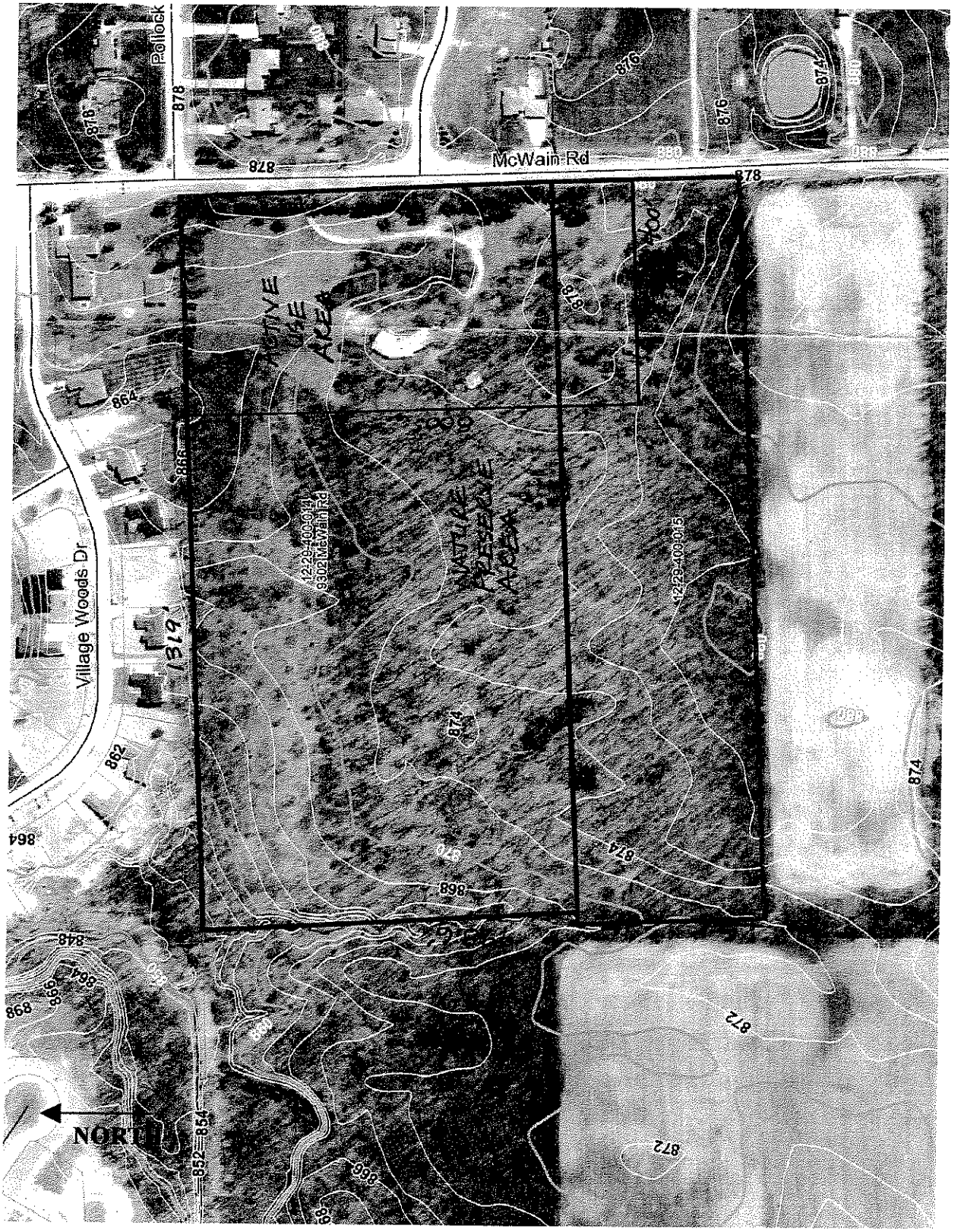
MAP 2. SOILS MAP



MAP LEGEND

ClB - Celina-Conover loams
CvB - Conover loam

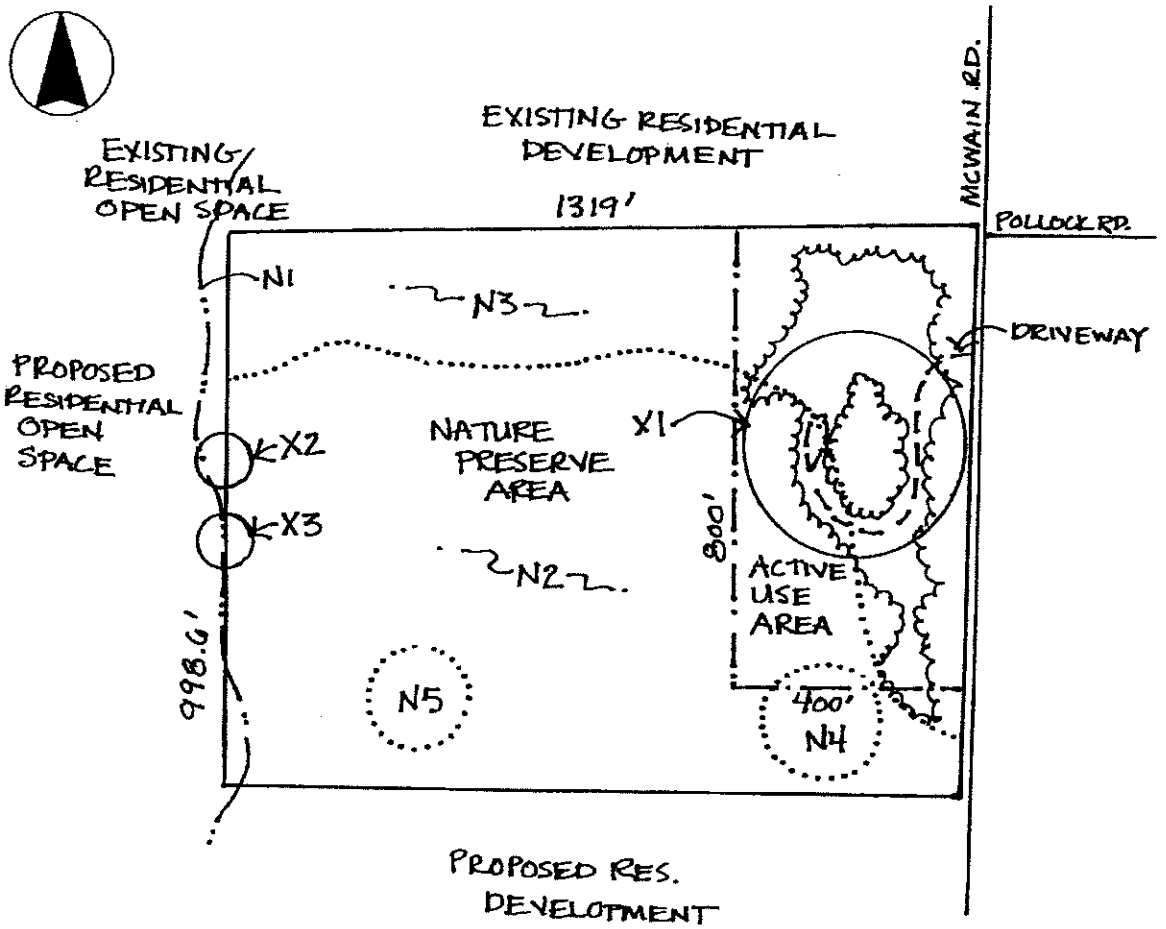
MAP 3: AERIAL PHOTOGRAPH/ TOPOGRAPHIC MAP



Key to Symbols: – Invasive Species; – Species of Concern; N – Natural Features;
X – Location Point on Site Map; P – Photograph; PM – Photomonitoring Point

MAP 4: SITE MAP

NOT TO SCALE



MAP LEGEND

N1 - Cames Drain
N2 - Dry-mesic southern forest
N3 - Old field
N4 - Southern Swamp
N5 - Vernal ponds
X1 - Location of house, kennel and garage
X2 - Dump #1
X3 - Dump #2
Active Use Area Boundary
Driveway
Approx. Ecosystem Boundary
Stream

Section VI. Species Lists

LIST 1: PLANT LIST

The C value (Coefficent of Conservatism) is a number ranging from 0 – 10, representing the degree to which a plant is likely to occur in intact native systems (high quality natural areas). Lower numbers represent weedy and widespread species, while higher numbers represent species that are restricted to a presettlement remnant. The scientific name in upper case is a non-native species (adventive).

59 NATIVE SPECIES (77.6%)
17 Adventive (22.4%)
76 Total Species

C	SCIENTIFIC NAME	COMMON NAME
0	Acer negundo	BOX ELDER
1	Acer rubrum	RED MAPLE
5	Acer saccharum	SUGAR MAPLE
4	Amelanchier arborea	JUNEBERRY
8	Anemonella thalictroides	RUE ANEMONE
3	Antennaria neglecta	CAT'S FOOT
0	ARCTIUM MINUS	COMMON BURDOCK
5	Arisaema triphyllum	JACK IN THE PULPIT
0	BERBERIS VULGARIS	COMMON BARBERRY
?	BRASSICA SPP.	WILD MUSTARD
0	BRASSICA NIGRA	BLACK MUSTARD
1	Cardamine pensylvanica	PENNSYLVANIA BITTER CRESS
?	Carex spp.	SEDGE
6	Carpinus caroliniana	BLUE BEECH
5	Carya cordiformis	BITTERNUT HICKORY
5	Carya glabra	PIGNUT HICKORY
5	Carya ovata	SHAGBARK HICKORY
8	Cercis canadensis	REDBUD
4	Claytonia virginica	SPRING BEAUTY
5	Cornus alternifolia	ALTERNATE LEAVED DOGWOOD
1	Cornus foemina	GRAY DOGWOOD
2	Cornus stolonifera	RED OSIER DOGWOOD
?	Crataegus spp.	HAWTHORN
0	DAUCUS CAROTA	QUEEN ANNE'S LACE
5	Dentaria laciniata	CUT LEAVED TOOTHWORT
0	ELAEAGNUS UMBELLATA	AUTUMN OLIVE
?	Erigeron spp.	FLEABANE
5	Erythronium americanum	YELLOW TROUT LILY
2	Fragaria virginiana	WILD STRAWBERRY
5	Fraxinus americana	WHITE ASH
2	Fraxinus pennsylvanica	RED ASH
0	Galium aparine	ANNUAL BEDSTRAW
4	Geranium maculatum	WILD GERANIUM
?	Geum spp.	AVENS
5	Iris versicolor	WILD BLUE FLAG
3	Juniperus virginiana	RED CEDAR

C	SCIENTIFIC NAME	COMMON NAME
5	Lonicera canadensis	AMERICAN FLY HONEYSUCKLE
0	LONICERA TATARICA	SMOOTH TARTARIAN HONEYSUCKLE
4	Malus coronaria	AMERICAN CRAB
0	MALUS PUMILA	APPLE
5	Ostrya virginiana	IRONWOOD; HOP HORNBEAM
5	Parthenocissus quinquefolia	VIRGINIA CREEPER
0	PICEA ABIES	NORWAY SPRUCE
0	PINUS NIGRA	AUSTRIAN PINE
6	Pinus resinosa	RED PINE
3	Podophyllum peltatum	MAY APPLE
?	POLYGONUM SPP.	KNOTWEED
1	Populus deltoides	COTTONWOOD
?	Potentilla spp.	CINQUEFOIL
0	PRUNELLA VULGARIS	LAWN PRUNELLA
2	Prunus serotina	WILD BLACK CHERRY
2	Prunus virginiana	CHOKE CHERRY
5	Quercus alba	WHITE OAK
8	Quercus bicolor	SWAMP WHITE OAK
5	Quercus rubra	RED OAK
?	Ranunculus spp.	BUTTERCUP
0	RHAMNUS CATHARTICA	COMMON BUCKTHORN
2	Rhus typhina	STAGHORN SUMAC
4	Ribes cynosbati	PRICKLY or WILD GOOSEBERRY
0	ROSA MULTIFLORA	MULTIFLORA ROSE
1	Rubus allegheniensis	COMMON BLACKBERRY
?	RUMEX spp.	DOCK
?	SALIX Spp.	SHRUBBY WILLOW
5	Sanguinaria canadensis	BLOODROOT
5	Smilacina stellata	STARRY FALSE SOLOMON SEAL
0	SYRINGA VULGARIS	COMMON LILAC
0	TARAXACUM OFFICINALE	COMMON DANDELION
4	Thuja occidentalis	ARBOR VITAE
5	Tilia americana	BASSWOOD
2	Toxicodendron radicans	POISON IVY
5	Trillium grandiflorum	COMMON TRILLIUM
2	Ulmus rubra	SLIPPERY ELM
4	Viburnum lentago	NANNYBERRY
?	Viola spp.	VIOLET
?	Vitis spp.	GRAPE
3	Zanthoxylum americanum	PRICKLY ASH

LIST 2: BIRD LIST

Created on May 14, 2005 by Fred and Alyce Townsend for the Genesee County Spring Migration Count.

Great blue heron
Canada goose
Mallard
Cooper's hawk (State species of Special Concern)
Ring-necked pheasant
Killdeer
Chimney swift
Ruby-throated hummingbird
Red-bellied woodpecker
Downy woodpecker
Hairy woodpecker
Least flycatcher
Great crested flycatcher
Blue jay
American crow
Black-capped chickadee
Tufted titmouse
White-breasted nuthatch
House wren
Eastern bluebird
American robin
Gray catbird
Yellow-throated vireo
Warbling vireo
Red-eyed vireo
Blue-winged warbler
Nashville warbler
American redstart
Common yellowthroat
Northern cardinal
Rose-breasted grosbeak
Indigo bunting
Eastern towhee
Chipping sparrow
Savannah sparrow
Song sparrow
Bobolink
Red-wing blackbird
Brown-headed cowbird
House finch
American goldfinch
Unidentified gull

Erin Lavender

From: Erin Lavender [elavender@oaklandtownship.org]
Sent: Monday, September 19, 2005 3:24 PM
To: 'Mark McPherson'
Subject: Workday at Rookery WOods

Hi Mark!

Were you interested in going ahead with a workday at the Rookery Woods sub on Saturday October 1st? If not, how does the 8th look?

Please let me know.

Thanks!

Erin

Erin Lavender
Stewardship Coordinator
Oakland Land Conservancy

P.O. Box 80902
Rochester, Michigan 48308-0902
Phone: 248.601.2816
Web: www.oaklandlandconservancy.org

"Our mission is to preserve, protect and connect natural areas and open spaces in order to enhance the quality of life in and around Oakland County."

Erin Lavender

From: Erin Lavender [elavender@oaklandtownship.org]
Sent: Monday, September 19, 2005 2:21 PM
To: 'Martin.VanFossan@us.behrgroup.com'
Cc: 'Donna Folland'
Subject: RE: Behr Native Garden

Hi Martin!

Would you be available to meet with Donna and myself on Thursday, September 29th at 10:00 a.m.? As I mentioned earlier, the purpose of our meeting would be to take a look at the garden, discuss what has been accomplished thus far and then begin planning the next steps.

Please let me know.

Thanks!

Erin

Erin Lavender
Stewardship Coordinator
Oakland Land Conservancy

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From: Martin.VanFossan@us.behrgroup.com [mailto:Martin.VanFossan@us.behrgroup.com]
Sent: Wednesday, September 14, 2005 11:46 AM
To: Anna.Peraino@us.behrgroup.com
Cc: elavender@oaklandtownship.org
Subject: Re: Behr Native Garden

Erin:

Anna is correct, I am now your main contact at Behr. She is also right about the garden - it looks great!

Please contact me with the date/time you would like to visit. I would be pleased to accommodate you.

Note that I am usually out of the office all day on Wednesdays.

Regards,

Martin P. Van Fossan
Senior Program Manager
Behr America, Inc.

Erin Lavender

From: Erin Lavender [elavender@oaklandtownship.org]
Sent: Monday, September 19, 2005 2:02 PM
To: 'brad jacobsen'
Subject: RE: cedar lake preserve

Hi Brad!

I put some information in the mail today. Once you have had a chance to look it over please let me know if you have any other questions. I will definitely keep you updated of our activities out at the Preserve in hopes that you can join us.

Thanks!

Erin
Erin Lavender
Stewardship Coordinator
Oakland Land Conservancy

P.O. Box 80902
Rochester, Michigan 48308-0902
Phone: 248.601.2816
Web: www.oaklandlandconservancy.org

"Our mission is to preserve, protect and connect natural areas and open spaces in order to enhance the quality of life in and around Oakland County."

From: brad jacobsen [mailto:bradjgolf@yahoo.com]
Sent: Wednesday, September 14, 2005 4:53 PM
To: elavender@oaklandtownship.org
Subject: cedar lake preserve

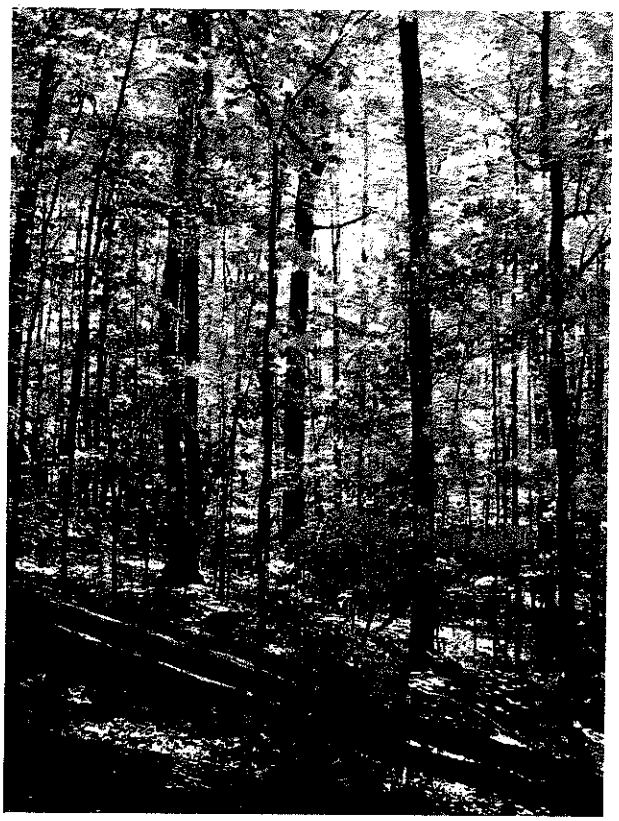
Thanks for Sept 2 letter. I'd like to know more about cedar lake preserve. In particular its location and boundries around the stringy lakes area. I have spent my life on these lakes and am pleased to find that an organization will be looking after parts of the wetlands. A map, even a rough sketch of the boundries would be appreciated. Please keep me posted. I have several boats and a canoe which could be used for clean ups etc.

thanks, Brad Jacobsen
Home phone 248-628-0579
Work 693-8383
Fax 693-8078

OAKLAND LAND CONSERVANCY

MANAGEMENT PLAN

COMPLETED JUNE 10, 2005; CURRENTLY UNDER REVIEW BY THE CITY OF SOUTHFIELD



VALLEY WOODS NATURE PRESERVE: PHASE I

OLC PROTECTION & STEWARDSHIP ASSISTANCE PROJECT
PARK OWNED BY CITY OF SOUTHFIELD SINCE YEAR 2003

Table of Contents

is Management Plan was made possible with a grant from DENSO International America, Inc. to the Oakland Land Conservancy

Section I. Management Agreement

Oakland Land Conservancy ("Conservancy") created this Management Plan in cooperation with the City of Southfield ("Owner"), and is effective starting July 1, 2005. This plan expires in 5 years and must be revised by June 301, 2010.

The Management Plan consists of 27 pages (including cover page, table of contents, maps, tables, and this agreement) and details the conservation goals and management actions recommended for the Property.

Owner and the Conservancy acknowledge and agree to accept this Management Plan. Owner agrees to manage the Protected Property in accordance with this Management Plan. Both the Owner and the Conservancy agree to revise this Management Plan by June 30, 2010.

OWNER		**CONSERVANCY**
By: _____	By:	_____
Name:		Name: Donna Folland
Title:		Title: Executive Director Oakland Land Conservancy
Date: _____	Date:	_____

Section II. Executive Summary

Physical Description
Valley Woods Nature Preserve is owned by the City of Southfield in the NW quarter of Section 16 in the Rouge River subwatershed. The park is owned and managed by Southfield Parks & Recreation as a passive recreation nature park. This Phase I Management Plan focuses on two adjoining areas of Valley Woods Nature Preserve (referred to as the "Property"), including three parcels totaling 16 acres that are the most recently acquired part of the City of Southfield's Valley Woods Nature Preserve. This area was formerly referred to as the Berberian Property or the Rivers of Southfield and was acquired in 2003. Also included in this Management Plan is a section of Valley Woods Nature Preserve located between the former Berberian Property and the Rouge River. The Property is bordered to the west and north by Rouge River and to the east and south by individual homeowners.

Access to Property
Vehicular access to the Property can be gained via a service drive located off the south end of Streamwood Lane. (This service drive is for Parks Department use only. Please notify Parks Department prior to using service drive for stewardship.) Pedestrians can access the Property through adjacent Valley Woods Nature Preserve or from the Rouge River.

Property History
The Berberian family owned 16 acres of the Property for two generations. The property was vacant while in the Berberian family. Earlier history has not been investigated. The Berberian family still resides on an adjacent parcel. The sturdy bridge across the Rouge River and the road that runs through the property to reach a cleared upland area (where construction of a home site was planned but never started) were both constructed by the Berberian family. In 2000 the family put the property up for sale. Due to the property's high quality, the Oakland Land Conservancy began discussions with the Berberian family on alternatives to sale for development, such as selling the land for conservation. The property was subsequently purchased in 2003 by the City of Southfield with funding from a Michigan Natural Features Trust Fund grant, Community Foundation of Southeast Michigan GreenWays Initiative grant, landowner contributions and funds raised from local residents by the Oakland Land Conservancy (which were matched by a grant from the Southfield Community Foundation). Since the successful acquisition of the Rivers of Southfield by the City of Southfield, the Conservancy has remained committed to assisting the City with stewardship of the property. The Conservancy's project name for the Berberian property before incorporation into Valley Woods Nature Preserve was "Rivers of Southfield".

Habitats and Ecosystems
This area of Valley Woods Nature Preserve is a wonderful example of high quality floodplain forest in an urbanized area. The Pproperty is very diverse floristically and includes one state listed threatened plant species, goldenseal (*Hydrastis canadensis*), and four state listed species of concern, twinleaf (*Jeffersonia diphylla*), James' sedge (*Carex jamesii*), wahoo (*Euonymus atropurpurea*), and field dodder (*Cuscuta campestris*). The Property also plays a vital role in improving the green infrastructure of Southfield by providing a solid connection between the north and south portions of the Valley Woods Nature Preserve.

The Property contains four distinct ecosystems as designated by Wetland and Coastal Resources, Inc. in their 2003 botanical survey (Reference 1): Upland Slopes, Forested Wetlands, Uplands and Upland Floodplain. All ecosystems (minus the forested wetlands) were calculated to have an FQI value greater than 35 making them floristically significant from a statewide perspective.

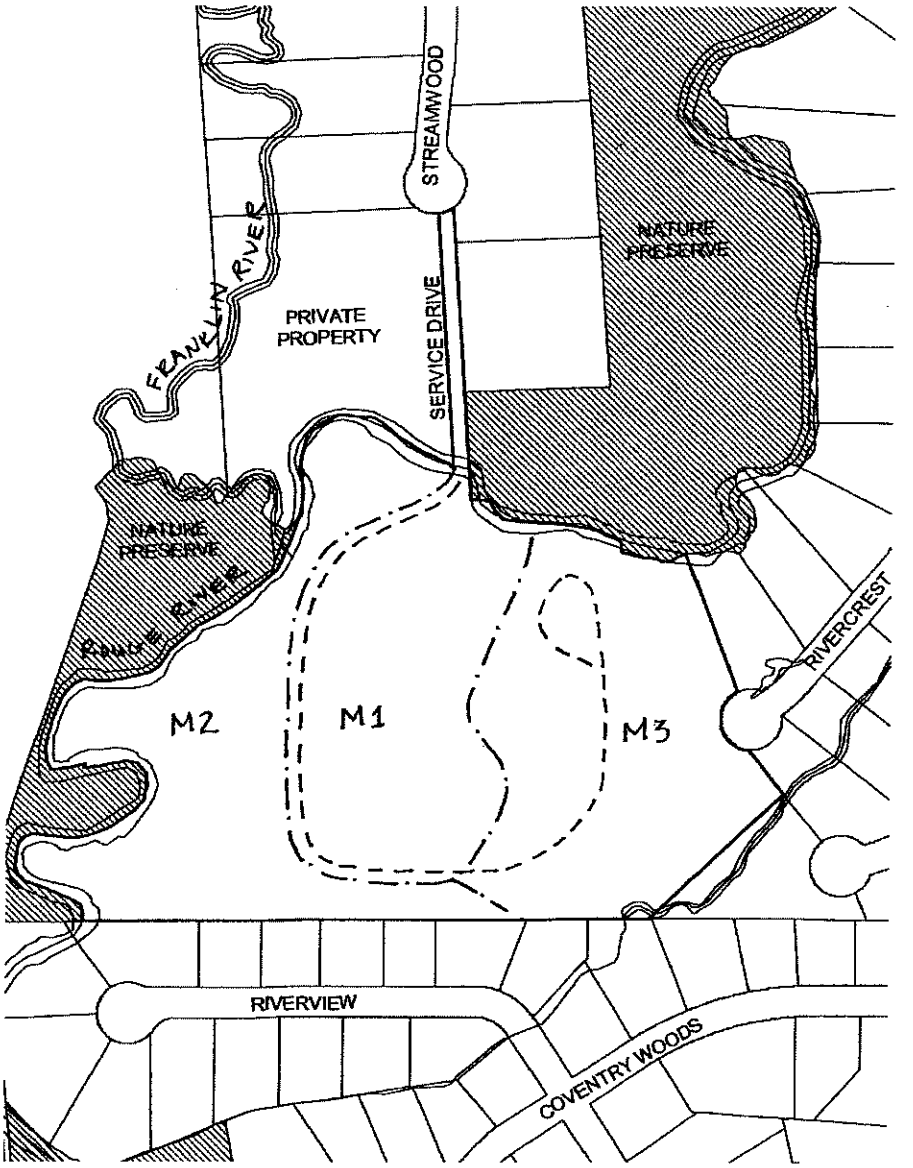
Disturbances
Current structures and disturbances include an old trailer parked near the service road, a gravel roadway that encircles the perimeter of the property and a culvert that runs under the roadway connecting the exterior and interior portions of the property. The previous landowner also cleared away many downed trees and understory brush throughout the upland floodplain and cleared a portion of the upland for potential home construction.

Conclusions
The overall species diversity, high quality plant communities and proximity to an urban center made the Property an important property for permanent protection. However, these aspects also make it susceptible to disturbance and degradation. A stringent management plan is essential in the long-term maintenance of the property's natural features.

To help focus on-the-ground management, the property has been divided into three management units. Management Unit 1 to the east and north of the roadway (away from the river) consists of upland floodplain and small areas of forested wetland. Management Unit 2 to the west and south of the roadway (riverward) consists of upland floodplain and small areas of forested wetland. These two management units, while similar ecologically, are separated by the roadway and face different degrees of stress and thus are being treated as separate units. Management Unit 3 consists of the upland and wooded slopes (See attached map). Each unit has specific goals and management recommendations to be implemented throughout the next five years. After the allotted time frame a full review of the management plan should be performed. This review should be used to update the management plan to reflect changes in stresses, incorporate the latest research in regards to management techniques, and to include new management techniques (i.e. burn regime, streambank stabilization control, etc.) that are needed to help move the property towards its main goals.

Incorporating the former Berberian property into the Valley Woods Nature Preserve provides the public with an opportunity to enjoy passive recreation in a high quality natural area without traveling far from home. Sound management strategies, such as restricting park development to the already disturbed gravel roadway and encouraging foot traffic to keep on established trails, will help protect the rare plants from being trampled as well as reduce the spread of invasive, non-native plants throughout the property. Implementation of this management plan as a cooperative effort by Southfield Parks and Recreation, Oakland Land Conservancy and groups of local volunteers will help to ensure the viability and floristic significance of this urban oasis now and into the future.

Section III. Site Map



SITE MAP LEGEND

---------- Management Unit Boundary

---------- Roads and Trails

M1 Management Unit 1
Interior Upland Floodplain

M2 Management Unit 2
Exterior Upland Floodplain

M3 Management Unit 3
Upland and Wooded Slopes

Section IV. Work Plans

MANAGEMENT UNIT #1: Interior Upland Floodplain

Description:
Management Unit 1 is located on the east and north sides (interior or away from the river) of the gravel roadway that runs through the property. The unit consists of high quality upland floodplain and small portions of forested wetland. The roadway acts as a buffer between Management Units 1 and 2 and has helped to the slow the spread of non-native, invasives between the two units.

Features:
This high quality floodplain and forested wetlands are important for many reasons. Keeping the area undeveloped ensures that it is available to provide important stormwater absorption for the Rouge watershed. Because of the flashiness of the Rouge and other similar urban rivers, it is difficult to maintain a high quality diverse floodplain ecosystem. We are helped here by the presence of the roadway built by the Berberian family, which buffers most of the more severe flooding that could disturb native flora and bring seeds of invasive plants. Therefore, we have an opportunity to not only preserve important bottomlands for stormwater absorption, but also to maintain and enhance high quality ecosystems.

STRESSES

Stress #1: Garlic Mustard

The biggest threat to Management Unit 1 at this time is garlic mustard and its spread, which could displace populations of native plants and degrade the entire ecosystem. Management Unit 1 has a much smaller population of garlic mustard than in Management Unit 2, due to the roadway acting as a barrier. It is feasible to completely eliminate garlic mustard in this unit. Long-term success, however, will depend on the garlic mustard populations in Management Unit 2 also being controlled.

Garlic mustard seeds can remain viable for over five years in a dormant state. To eliminate the occurrence of garlic mustard within the management unit the seed bank must be exhausted of mustard seeds. This is accomplished by removing flowering mustard plants before they go to seed. Since the seeds of garlic mustard are quite heavy they most often fall close to the parent plant creating a colony. Occasionally, seeds may be dispersed through the movements of human and wildlife traffic (most often deer) flowing water.

Management Actions for Stress #1

1. **Mechanical Removal:** Mechanically remove second year garlic mustard plants by either hand pulling the entire plant (being sure to tamp disturbed soil back into place after removal) or by cutting the plant near the base of the stem. All plant material should be bagged immediately after removal and deposited in a landfill. Due to the smaller population of garlic mustard in Management Unit 1, herbicide use is not recommended. During removal sessions it is important to note new seedlings in all areas of the unit (especially near the culvert).
   Timeframe: March - June
   Reference: OLC Stewardship Manual – Garlic Mustard Section

2. **Annual site review:** Monitor annually to document location and size of garlic mustard populations and evaluate effectiveness of management actions. Set up photomonitoring points to document changes. Use Species Checklist to document recovery of native species in management unit.
   Timeframe: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress#2 – Other Non-native Invasive Species

While garlic mustard is the invasive plant of concern in this management unit, 32 non-native species have been documented in Management Units 1 and 2 (Reference 1). This management plan focuses on reducing the damaging effect of garlic mustard above other invasives. Remove other invasive plants only if it does not detract from the task of eliminating garlic mustard. The following invasive species should be noted in the annual site review and removed if time permits: tree of heaven (*Ailanthus altissima*), oriental bittersweet (*Celastrus orbiculatus*), Canada thistle (*Cirsium arvense*), dame's rocket (*Hesperis matronalis*), common privet (*Ligustrum vulgare*), amur honeysuckle (*Lonicera maackii*), hybrid honeysuckle (*Lonicera x bella*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Rhamnus frangula*), and multiflora rose (*Rosa multiflora*).

The non-native invasive plants listed above propagate and are spread in a variety of ways. Consult individual abstracts for detailed information (Reference 2).

Management Actions for Stress #2

1. **Removal:** Consult individual abstracts for detailed information to control the above listed species. Control of garlic mustard is the top priority. Control these additional plants only if time permits or they become more of a problem.
   Time to do Action: Year round
   Reference: OLC Stewardship Manual – various sections

2. **Annual Site Review:** Monitor annually to document population locations and sizes of other non-native, invasive species and evaluate any changes necessitating increased control measures. Use Species Checklist to document both non-native and native species.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #3 – Human Disturbance

Management Unit 1 is not in direct contact with private property therefore should not be subject to encroachment from private yards. There is, however, a large trailer that belongs to the Berberian family containing a disassembled barn still parked in this unit. Fallen trees and understory vegetation has also previously been cleared by the previous landowner. Due to the property's accessibility to the public, there may be effects from human interaction with the property, such as trampling of flora, or adverse effects from roadway maintenance.

Management Actions for Stress #3

1. **Trail Creation:** Create one trail that will lead pedestrians from the slope in management Unit 3 through Unit 1 to the bridge. This path should be maintained through wood chipping and pruning and marked to encourage pedestrian use.
   Time to do Action: Year round
   Reference:

2. **Annual Site Review:** Monitor annually to document effects from human interaction with the property, such as trampling of flora, or adverse effects from path and roadway maintenance.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

3. **Understory Vegetation and Downed Trees:** Fallen trees and understory brush when left in place helps create and enhance wildlife habitat. No management should be performed on these items unless they pose a danger to public safety.
   Time to do Action: Year round
   Reference: OLC Staff Project Manual – section under development

Stress #4 – Erosion

The northern edge of Management Unit 1 touches the Rouge River. High stormwater flows in the Rouge River can cause erosion of the streambank and loss of native vegetation. In addition to the damage to habitat, such occurrences also deposit sediment and other pollutants into the river, affecting areas downstream.

Management Actions for Stress #4

1. **Annual Site Review:** Monitor annually to document presence of streambank erosion and health of native vegetation. Set up photomonitoring point to document changes over time.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

MANAGEMENT UNIT #2: Exterior Upland Floodplain

Description:
This management unit is located on the west and south sides (exterior or riverward) of the roadway that runs through the property. The unit encompasses high quality upland floodplain and small portions of forested wetland and includes the banks of both the Franklin and Rouge Rivers. The area between the roadway and the rivers is part of the original Valley Woods Nature Preserve and not part of the 2003 acquisition from the Berberian family.

Features:
As in Management Unit 1, this area provides important bottomland for absorption of stormwater for the Rouge River watershed. Frequent floodwaters have, however, greatly compromised the quality of this area adjacent to the river, disturbing the native plant populations and giving opportunity for a large population of garlic mustard and other invasive non-native plants, such as dame's rocket, to become established. Populations of native plants such as trillium, wild ginger, and false rue anemone are still seen, especially in the areas where garlic mustard has been cleared in the past. Vigorous effort to control invasives and reestablish native vegetation is essential. However, the longer-term solution for restoration of Management Unit 2 lies not in local control of invasive plants, but in larger community-wide solutions such as reduction of impervious surface to reduce stormwater runoff into rivers and the redesign of outdated storm sewer systems.

STRESSES

Stress #1 - Garlic Mustard

Garlic mustard seeds can remain viable for over five years in a dormant state. To reduce or eliminate the occurrence of garlic mustard within the management unit the seed bank must be exhausted of mustard seeds. This is accomplished by removing flowering mustard plants before they go to seed. In this management unit there are two ways to deplete the seed bank: mechanical removal and herbicide application. Since the seeds of garlic mustard are quite heavy they most often fall close to the parent plant creating a colony. Occasionally, seeds may be dispersed through the movements of human and wildlife traffic (most often deer) or flowing water.

Management Actions for Stress #1

1. **Mechanical Removal:** Mechanical removal of second year garlic mustard plants by either hand pulling the entire plant (being sure to tamp disturbed soil back into place after removal) or by cutting the plant near the base of the stem. All plant material should be bagged immediately after removal and deposited in a landfill. During removal sessions it is important to note new seedlings in all areas of the unit.
   Time to do Action: March - June
   Reference: OLC Stewardship Manual – Garlic Mustard Section

2. **Foliar Herbicide Application:** Due to the high density of mustard plants in this management unit a dormant season foliar application of a 2% solution of the systemic herbicide glyphosate (i.e. roundup) on first year mustard seedlings is currently the best strategy to use in gaining control of the garlic mustard epidemic. Once the population is under control it is important to remain vigilant for new seedlings in all areas of the unit, especially those near high traffic areas such as foot trails and deer trails.
   Time to do Action: November - February
   Reference: OLC Stewardship Manual – Garlic Mustard Section

3. **Annual Site Review:** Monitor Management Unit 2 annually to document location and size of garlic mustard populations and evaluate effectiveness of management actions. Set up photomonitoring points to document changes. Use Species Checklist to document recovery of native species in management unit.

Time to do Action: May
Reference: OLC Staff Project Manual – Monitoring Section

Stress #2 – Other non-native invasive species
While garlic mustard is the most prolific invasive plant in this management unit, 32 non-native species have been documented in the upland floodplain (Reference 1). This management plan focuses on reducing the damaging effect of garlic mustard above other invasives. Remove other invasives plants only if it does not detract from the task of eliminating garlic mustard. The following invasive species should be noted in the annual site review and removed if time permits: tree of heaven (*Ailanthus altissima*), oriental bittersweet (*Celastrus orbiculatus*), Canada thistle (*Cirsium arvense*), dame's rocket (*Hesperis matronalis*), common privet (*Ligustrum vulgare*), amur honeysuckle (*Lonicera maackii*), hybrid honeysuckle (*Lonicera x bella*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Rhamnus frangula*), and multiflora rose (*Rosa multiflora*).

The non-native invasive plants listed above propagate and are spread in a variety of ways. Consult individual abstracts for detailed information (Reference 2).

Management Actions for Stress #2

1. **Removal:** Consult individual abstracts for detailed information to control the above listed species. Control of garlic mustard is the top priority. Control these additional plants only if time permits or they become more of a problem.
   Time to do Action: Year round
   Reference: OLC Stewardship Manual – various sections

2. **Annual Site Review:** Monitor Management Unit 2 annually to document population locations and sizes of other non-native, invasive species and evaluate any changes necessitating increased control measures.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #3 – Human Disturbance
Due to the property's accessibility to the public and proximity to homes, there may be effects from human interaction with the property, such as encroachment from neighboring properties, trampling of flora, or adverse effects from roadway maintenance.

Management Actions for Stress #3

1. **Trail Creation:** Begin planning one/two trails that will take pedestrians from the gravel roadway, through Unit 2 and to the river. Once created, these paths should be maintained through wood chipping and pruning and marked to encourage pedestrian use. A river crossing will eventually need to be created to allow for a continuous walking trail throughout Valley Woods North.

2. **Gravel Roadway:** Maintain the gravel roadway as a two-lane track for pedestrian and vehicle access. The roadway should make up the majority of the walking trail through the property joining up with the trails through Units 1, 3 and the above-mentioned trails in Unit 2.

3. **Annual Site Review:** Monitor annually to document effects from human interaction with the property, such as encroachment from neighboring properties, trampling of flora, or adverse effects from roadway maintenance.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #4 – Erosion

The management unit includes the banks of the Rouge River. High stormwater flows in the Rouge River can cause erosion of the streambank and loss of native vegetation. In addition to the damage to habitat, such occurrences also deposit sediment and other pollutants into the river.

Management Actions for Stress #4
Annual Site Review: Monitor annually to document presence of streambank erosion and health of native vegetation. Set up photomonitoring point to document changes over time.
Time to do Action: May
Reference: OLC Staff Project Manual – Monitoring Section

MANAGEMENT UNIT #3: Upland Wooded Slope

Description:
This management unit is located on the east side of the property and is bordered by Management Unit 1 to the west and residential property to the east. The unit consists of both high quality uplands (parts of which were previously cleared for home construction) and high quality wooded slope.

Features:
This area provides an important buffer to the wooded slopes that lead down to the floodplain in Management Unit 1. Historically, most of this unit was cleared for potential development. The disturbance has altered the native plant populations and given opportunity for invasive non-native plants, such as buckthorn, to become established. Populations of native plants such as twin leaf are still seen. Efforts to control invasives and reestablish native vegetation is essential.

STRESSES

Stress #1 - Garlic Mustard
Garlic mustard seeds can remain viable for over five years in a dormant state. To reduce or eliminate the occurrence of garlic mustard within the management unit the seed bank must be exhausted of mustard seeds. This is accomplished by removing flowering mustard plants before they go to seed.

Management Actions for Stress #1

1. **Mechanical Removal:** Mechanically remove second year garlic mustard plants by either hand pulling the entire plant (being sure to tamp disturbed soil back into place after removal) or by cutting the plant near the base of the stem. All plant material should be bagged immediately after removal and deposited in a landfill. Due to the smaller population of garlic mustard in Management Unit 3, herbicide use is not recommended. During removal sessions it is important to note new seedlings in all areas of the unit.
   Timeframe: March - June
   Reference: OLC Stewardship Manual – Garlic Mustard Section

2. **Annual Site Review:** Monitor annually to document population locations and sizes of garlic mustard and other non-native, invasive species and evaluate effectiveness of management actions on the health and recovery of native plant populations. Set up photomonitoring points.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #2 – Other non-native invasive species
While garlic mustard is the most prolific invasive plant in this management unit, 25 non-native species have been documented in the uplands and wooded slope (Reference 1). This management plan focuses on reducing the damaging effect of garlic mustard above other invasives. Remove other invasives plants only if it does not detract from the task of eliminating garlic mustard. The following invasive species should be noted in the annual site review and removed if time permits: Japanese barberry (*Berberis thunbergii*), winged wahoo (*Euonymus alata*), dame's rocket (*Hesperis matronalis*), privet (*Ligustrum ovalifolium*), amur honeysuckle (*Lonicera maackii*), Tartarian honeysuckle (*Lonicera tatarica*), common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Rhamnus frangula*), and multiflora rose (*Rosa multiflora*).

The non-native invasive plants listed above propagate and are spread in a variety of ways. Consult individual abstracts for detailed information (Reference 2).

Management Actions for Stress #2:

1. **Removal:** Consult individual abstracts for detailed information to control the above listed species. Control of garlic mustard is the top priority. Control these additional plants only if time permits or they become more of a problem.
   Time to do Action: Year round
   Reference: OLC Stewardship Manual – various sections

2. **Annual Site Review:** Monitor annually to document population locations and sizes of other non-native, invasive species and evaluate any changes necessitating increased control measures.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #3 – Human Disturbance

Due to the properties accessibility to the public and proximity to homes, there may be effects from human interaction with the property, such as encroachment from neighboring properties, trampling of flora, multiple path development or adverse effects from roadway maintenance.

Management Actions for Stress #3

4. **Trail Creation:** Create one trail with two branches that will lead pedestrians from the adjacent cul-de-sac into the nature preserve then split with the branches continuing along the roadway or down the slope. These paths should be maintained through wood chipping and pruning and marked to encourage pedestrian use. Reinforcements (such as risers) should be used to deter erosion as the trails pass down the slope.
   Time to do Action: Year round
   Reference:

5. **Annual Site Review:** Monitor annually to document effects from human interaction with the property, such as encroachment from neighboring properties, trampling of flora, or adverse effects from roadway maintenance.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Stress #4 – Erosion

The northern edge of the management unit touches the Rouge River. High stormwater flows in the Rouge River can cause erosion of the streambank and loss of native vegetation. In addition to the damage to habitat, such occurrences also deposit sediment and other pollutants into the river.

Management Actions for Stress #4

1. **Annual Site Review:** Monitor annually to document presence of streambank erosion and health of native vegetation. Set up photomonitoring point to document changes over time.
   Time to do Action: May
   Reference: OLC Staff Project Manual – Monitoring Section

Section V. Communication Plan

1. ***Landowner: City of Southfield***
   Contact:
   Merrie Carlock, Parks Planner
   City of Southfield Parks and Recreation Department
   26000 Evergreen Road
   Southfield, MI 48076
   Phone: 248-796-4618
   Fax: 248-796-4605
   Email: mcarlock@cityofsouthfield.com
   Website: www.cityofsouthfield.com

   Access and Use of Property: Via access drive at end of Streamwood Lane

   Communication Recommendations: Continue regular communication through management planning, workdays and joint participation in Rouge Green Corridor project

2. ***Steward: Gail Barber, Valley Woods Neighborhood Steward***
   23081 Bittersweet Lane
   Southfield, MI 48034
   Phone: 248 356 0891
   Email: organicgail@comcast.net

   Stewardship Support: Oakland Land Conservancy Neighborhood Stewardship Program
   Erin Lavender
   Stewardship Coordinator
   Oakland Land Conservancy
   PO Box 80902
   Rochester, MI 48308-0902
   Phone: 248 601 2816
   Fax: 248 601 4582
   Email: lleighton@oaklandtownship.org
   Website: www.oaklandlandconservancy.org

   Access and Use of Property: Via access drive at end of Streamwood Lane or through subdivision cul de sac at end of Rivercrest Drive.

   Communication Recommendations: Communication with stewardship volunteers through personal communication from Gail, Stewardship Café meetings, OLC's email update list serve, and mailed workday and event announcements

3. ***Adjacent Landowners:***
   - Louis and Beverly Clark, 23540 Riverview Dr., Southfield, MI 48034
   - P. Emanuel and C. Bias, 23270 Laurel Valley, Southfield, MI 48034
   - Chuck and Geraldine Harris, 23566 Riverview Dr., Southfield, MI 48034
   - Nancy Litt, 23460 Coventry Woods Ln., Southfield, MI 48034
   - Derrick and Andrea Mayes, 23660 Riverview Dr., Southfield, MI 48034
   - Deborah Shattuck, 23530 Riverview Dr., Southfield, MI 48034

- Judith Snyder, 23240 Laurel Valley Southfield, MI 48034
- Sylvester and Shirley Woods, 23610 Riverview Dr., Southfield, MI 48034
- Harry and Cheryl Young, 28279 Rivercrest Dr., Southfield, MI 48034

Access and Use of Property: Most neighbors access the property from the cul-de-sac at the end of Rivercrest or directly from adjacent yards

Communication Recommendations: Invite neighbors to all stewardship workdays and other relevant events via mailed announcement with the goal of drawing them into the Neighborhood Stewardship Program

4. ***Neighborhood Associations:***

Access and Use of Property: Most neighbors access the property from the cul-de-sac at the end of Rivercrest or directly from adjacent yards.

Communication Recommendations: Offer Stewardship Education programs in partnership with Friends of the Rouge.

5. ***Recreational Park and Trail Users:***

Access and Use of Property: Pedestrian access is via Valley Woods Trail to the south

Communication Recommendations: Appropriate signage designating area as nature preserve for passive recreation.

6. ***Local Community: See Landowner***

7. ***Partner Agencies:***

A. Watershed Organization:
Cyndi Ross, Public Information Assistant
Friends of the Rouge
24401 Ann Arbor Trail
Dearborn Heights, MI 48127-2508
Phone: 313-961-4050
Fax: 313-961-4018
Email: piassist@therouge.org
Website: http://www.therouge.org/

B. Healthy Lawn and Garden Programs:
Lillian Dean, Healthy Lawn and Garden Program Coordinator
Southeastern Oakland County Water Authority
3910 W. Weber Road
Royal Oak, MI 48073
Phone: 248-288-5150
Fax: 248-435-0310
Email: LFDean@aol.com
Website: http://www.socwa.org/

Access and Use of Property:
Communication Recommendations: Continued partnership in Rouge Green Corridor and other projects

Suggested communication options include: Signs identifying area; Interpretive signs; OLC information; Preservation Update biannually; Species, ecosystem or management information; Geographic area or site specific information; Monitoring announcement; Workday announcements; Special programs; Newsletter articles for subdivision newsletter.

Section VI. Timeline

Year: 2005

Management Unit	Goal	Action	Schedule	Priority
1	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Late March	1
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	April	2
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Early May	2
1, 2 and 3	Annual Site Visit	Document stresses, take photos	May	3
2	Garlic mustard	Foliar application of glyphosate	Nov – Feb	4

Year: 2006

Management Unit	Goal	Action	Schedule	Priority
1 and 3	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Late March	1
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	April	2
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Early May	2
1, 2 and 3	Annual Site Visit	Document stresses, take photos	May	3
3	Invasive Plants	Remove invasive plant species in appropriate manner	July	3
2	Garlic mustard	Foliar application of glyphosate	Nov – Feb	4

Year: 2007

Management Unit	Goal	Action	Schedule	Priority
1 and 3	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Late March	1
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	April	2
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Early May	2
1, 2 and 3	Annual Site Visit	Document stresses, take photos	May	3
3	Invasive Plants	Remove invasive plant species in appropriate manner	July	3
2	Garlic mustard	Foliar application of glyphosate	Nov – Feb	4
ALL	REVIEW ESTABLISHED SCHEDULE Revise (if needed) based on results of Annual Site Visits.		Winter	

Year: 2008

Management Unit	Goal	Action	Schedule	Priority
1 and 3	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Late March	1
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	April	2
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Early May	2
1, 2 and 3	Annual Site Visit	Document stresses, take photos	May	3
3	Invasive Plants	Remove invasive plant species in appropriate manner	July	3
2	Garlic mustard	Foliar application of glyphosate	Nov – Feb	4

Year: 2009

Management Unit	Goal	Action	Schedule	Priority
1 and 3	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Late March	1
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	April	2
2	Garlic mustard	Mechanical removal of 2nd year Garlic mustard	Early May	2
1, 2 and 3	Annual Site Visit	Document stresses, take photos	May	3
3	Invasive Plants	Remove invasive plant species in appropriate manner	July	3
2	Garlic mustard	Foliar application of glyphosate	Nov – Feb	4
ALL	REVIEW MANAGEMENT PLAN Revise (if needed) based on results of Annual Site Visits.		Winter	

Section VII. Species Checklist

This list is based on the botanical survey performed by Wetland and Coastal Resources, Inc. in 2003. Plant names in **bold** are state listed species and their status is listed in parenthesis. Populations of these plants need to be carefully documented. Plant names in all UPPER CASE letters are adventives or non-native species. Non-native species that are considered to be a priority for removal are marked with an asterisk. *See management unit work plans for recommended invasive removal methods.*

Management Unit			Scientific Name	Common Name
1	2	3		
			Acalypha rhomboidea	Three seeded mercury
			Acer negundo	Box elder
			Acer nigrum	Black maple
			Acer rubrum	Red maple
			Acer saccharinum	Silver maple
			Acer saccharum	Sugar maple
			Actaea pachypoda	Doll's eyes
			Actaea rubra	Red baneberry
			Agastache nepetoides	Yellow giant hyssop
			Agrimonia gryposepala	Tall agrimony
			**AILANTHUS ALTISSIMA*	*TREE OF HEAVEN
			**ALLIARIA PETIOLATA*	*GARLIC MUSTARD
			Allium canadense	Wild garlic
			ALLIUM VINEALE	FIELD GARLIC
			Ambrosia artemisiifolia	Common ragweed
			Anemone quinquefolia	Wood anemone
			Antennaria parlinii	Smooth pussytoes
			ANTHEMIS COTULA	DOG FENNEL
			AQUILEGIA VULGARIS	GARDEN COLUMBINE
			ARCTIUM MINUS	COMMON BURDOCK
			Arisaema dracontium	Green dragon
			Arisaema triphyllum	Jack in the pulpit
			Asarum canadense	Wild ginger
			Aster cordifolius	Heart leaved aster
			Aster lanceolatus	Eastern lined aster
			Aster lateriflorus	Side flowering aster
			Aster ontarionis	Ontario aster
			Athyrium filix-femina	Lady fern
			ATRIPLEX PATULA	SPEARSCALE
			BARBAREA VULGARIS	YELLOW ROCKET
			**BERBERIS THUNBERGII*	*JAPANESE BARBERRY
			Bidens connatus	Purple stemmed tickseed
			Bidens frondosus	Common beggar ticks
			Bidens vulgatus	Tall beggar ticks
			Boehmeria clylindrica	False nettle
			Botrychium virginianum	Rattlesnake fern

			Bromus latiglumis	Ear leaved brome
			Calystegia sepium	Hedge bindweed
			CARDAMINE HIRSUTA	HOARY BITTER CRESS
			CARDAMINE IMPATIENS	BITTER CRESS
			Carex albursina	Sedge
			Carex alopecoidea	Sedge
			Carex blanda	Sedge
			Carex caphaloidea	Sedge
			Carex cephalophora	Sedge
			Carex granularis	Sedge
			Carex grayi	Sedge
			Carex grisea	Sedge
			Carex hirtifolia	Sedge
			Carex jamesii	James' sedge
			Carex laxiculmis	Sedge
			Carex lupulina	Sedge
			Carex pedunculata	Sedge
			Carex pensylvanica	Sedge
			Carex rosea	Curly styled wood sedge
			Carex sparganioides	Sedge
			Carex stricta	Sedge
			Carex tenera	Sedge
			Carex tribuloides	Sedge
			Carpinus caroliniana	Blue beech
			Carya cordiformis	Bitternut hickory
			Carya glabra	Pignut hickory
			Carya ovata	Shagbark hickory
			CATALPA SPECIOSA	NORTHERN CATALPA
			Caulophyllum giganteum	Blue cohosh
			Caulophyllum thalictroides	Blue cohosh
			**CELASTRUS ORBICULATA*	*ORIENTAL BITTERSWEET
			Celtis occidentalis	Hackberry
			CERASTIUM FONTANUM	MOUSE EAR CHICKWEED
			Cercis canadensis	Redbud
			CHELIDONIUM MAJUS	CELANDINE
			CHENOPODIUM ALBUM	LAMB'S QUARTERS
			CHENOPODIUM GLAUCUM	OAK LEAVED GOOSEFOOT
			CICHORIUM INTYBUS	CHICORY
			Circaea lutetiana	Enchanter's nightshade
			**CIRSIUM ARVENSE*	*CANADA THISTLE
			CIRSIUM VULGARE	BULL THISTLE
			Claytonia virginica	Spring beauty
			Clematis virginiana	Virgin's bower
			Conyza canadensis	Horseweed
			Cornus alternifolia	Alternate leaved dogwood
			Cornus foemina	Gray dogwood
			Crataegus mollis	Hawthorn

			Crataegus punctata	Dotted hawthorn
			Cuscuta campestris	**Field dodder (SC)**
			Cyperus erythrorhizos	Umbrella sedge
			Cyperus odoratus	Umbrella sedge
			Cyperus squarrosus	Umbrella sedge
			DACTYLIS GLOMERATA	ORCHARD GRASS
			Dentaria laciniata	Cut leaved toothwort
			DIANTHUS ARMERIA	DEPTFORD PINK
			DIGITARIA ISCHAEMUM	SMOOTH CRAB GRASS
			DIGITARIA SANGUINALIS	HAIRY CRAB GRASS
			Dioscorea villosa	Wild yam
			DIPSACUS FULLONUM	COMMON TEASEL
			ECHINOCLOA CRUSGALLI	BARNYARD GRASS
			Echinocloa muricata	Barnyard grass
			Elymus virginicus	Virginia wild rye
			Epifagus virginiana	Beech drops
			Equisetum arvense	Common horsetail
			Equisetum hyemale	Scouring rush
			Erigenia bulbosa	Harbringer of spring
			Erigeron philadelphicus	Marsh fleabane
			Erythronium albidum	White trout lily
			Erythronium americanum	Yellow trout lily
			EUONYMUS ALATA	WINGED WAHOO
			Euonymus atropurpurea	**Wahoo; Burning bush (SC)**
			EUONYMUS EUROPAEA	SPINDLE TREE
			EUONYMUS FORTUNEI	WINTERCREEPER
			Euonymus obovata	Running strawberry bush
			Eupatorium rugosum	White snakeroot
			Fagus grandifolia	American beech
			Festuca subverticillata	Nodding fescue
			Floerkea proserpinacoides	False mermaid
			Fraxinus americana	White ash
			Fraxinus nigra	Black ash
			Fraxinus pennsylvanica	Red ash
			Galium aparine	Annual bedstraw
			Geranium maculatum	Wild geranium
			Geum canadense	White avens
			Geum vernum	Spring avens
			GLECHOMA HEDERACEA	GROUND IVY
			Glyceria striata	Fowl mana grass
			Hackelia virginiana	Beggar's lice
			Hamamelis virginiana	Witch hazel
			Heliopsis helianthoides	False sunflower
			**HESPERIS MATRONALIS*	*DAME'S ROCKET
			Hydrastis canadensis	**Goldenseal (T)**
			Hydrophyllum virginianum	Virginia waterleaf
			Hystrix patula	Bottlebrush grass

			Impatiens capensis	Spotted touch me not
			Iris virginica	Southern blue flag
			Jeffersonia diphylla	**Twinleaf (SC)**
			Juglans nigra	Black walnut
			Juncus tenuis	Path rush
			Laportea canadensis	Wood nettle
			Leersia virginica	White grass
			LEONURUS CARDIACA	MOTHERWORT
			**LIGUSTRUM OVALIFOLIUM*	*PRIVET
			LIGUSTRUM VULGARE	COMMON PRIVET
			Lilium michiganense	Michigan lily
			Lithospermum latifolium	**Broad leaved puccoon (SC)**
			Lonicera dioica	Red honeysuckle
			LONICERA X BELLA	HYBRID HONEYSUCKLE
			**LONICERA MAACKII*	*AMUR HONEYSUCKLE
			**LONICERA TATARICA*	*SMOOTH TARTARIAN HONEYSUCKLE
			Luzula acuminate	Hairy wood rush
			Lysimachia ciliata	Fringed loosestrife
			LYSIMACHIA NUMMULARIA	MONEYWORT
			MALUS PUMILA	APPLE
			Matteuccia struthiopteris	Ostrich fern
			Menispermum canadense	Moonseed
			MORUS ALBA	WHITE MULBERRY
			Onoclea sensibilis	Sensitive fern
			Osmorhiza longistylis	Smooth sweet cicely
			Ostrya virginiana	Ironwood; Hop hornbeam
			Oxalis stricta	Common yellow wood sorrel
			Parthenocissus inserta	Thicket creeper
			Parthenocissus quinquefolia	Virginia creeper
			Penstemon digitalis	Foxglove beard tongue
			Pernanthes altissima	Tall white lettuce
			Phalaris arundinacea	Reed canary grass
			Phlox divaricata	Woodland phlox
			Phryma leptostachya	Lopseed
			PLANTAGO LANCEOLATA	ENGLISH PLANTAIN
			Platanus occidentalis	Sycamore
			POA COMPRESSA	CANADA BLUEGRASS
			POA TRIVIALIS	BLUEGRASS
			Podophyllum peltatum	May apple
			Polygonatum biflorum	Solomon seal
			Polygonum pubescens	Downy solomon seal
			Polygonum virginianum	Jumpseed
			PRUNELLA VULGARIS	LAWN PRUNELLA
			Prunus serotina	Wild black cherry
			Prunus virginiana	Choke cherry
			Quercus alba	White oak
			Quercus macrocarpa	Bur oak

			Quercus rubra	Red oak
			Ranunculus abortivus	Small flowered buttercup
			Ranunculus hispidus	Swamp buttercup
			Ranunculus recurvatus	Hooked crowfoot
			RHAMNUS CATHARTICA	COMMON BUCKTHORN
			RHAMNUS FRANGULA	GLOSSY BUCKTHORN
			Rhus typhina	Staghorn sumac
			Ribes americanum	Wild black currant
			Ribes cynosbati	Prickly or Wild gooseberry
			**ROSA MULTIFLORA*	*MULTIFLORA ROSE
			Rubus occidentalis	Black raspberry
			Rudbeckia laciniata	Cut leaved coneflower
			RUMEX OBTUSIFOLIUS	BITTER DOCK
			Sambucus canadensis	Elderberry
			Sanguinaria canadensis	Bloodroot
			Sanicula gregaria	Black snakeroot
			Sanicula trifoliata	Black snakeroot
			SAPONARIA OFFICINALIS	BOUNCING BET
			Smilacina racemosa	False spikenard
			Smilacina stellata	Starry false solomon seal
			Smilax lasionerura	Carrion flower
			Smilax tamnoides	Bristly green brier
			SOLANUM DULCAMARA	BITTERSWEET NIGHTSHADE
			Solidago caesia	Blue stemmed goldenrod
			Solidago canadensis	Canada goldenrod
			Solidago flexicaulis	Broad leaved goldenrod
			Solidago gigantea	Late goldenrod
			SONCHUS OLERACEUS	COMMON SOW THISTLE
			Sphenopholis intermedia	Slender wedgegrass
			Staphylea trifolia	Bladdernut
			Staphylea trifolia	Bladdernut
			TARAXACUM OFFICINALE	COMMON DANDELION
			Thalictrum dasycarpum	Purple meadow rue
			Thalictrum dioicum	Early meadow rue
			Tilia americana	Basswood
			Toxicodendron radicans	Poison ivy
			Trillium flexipes (historic occ.)	Southern nodding trillium
			Trillium grandiflorum	Common trillium
			Ulmus americana	American elm
			Ulmus rubra	Slippery elm
			Ulmus rubra	Slippery elm
			Urtica dioica	Nettle
			Uvularia grandiflora	Bellwort
			VERBASCUM THAPSUS	COMMON MULLEIN
			VERBENA CANADENSIS	CANADIAN VERVAIN
			Verbena urticifolia	White vervain
			Verbesina alternifolia	Wingstem

			VERONICA FILIFORMIS	SLENDER SPEEDWELL
			Veronica serpyllifolia	Thyme leaved speedwell
			Viburnum lentago	Nannyberry
			VIBURNUM OPULUS	EUROPEAN HIGHBUSH CRANBERRY
			Viburnum rafinesquianum	Downy arrow wood
			VINCA MINOR	PERIWINKLE
			Viola pubescens	Yellow violet
			Viola sororia	Common blue violet
			Viola striata	Cream violet
			Vitis riparia	Riverbank grape
			Zanthoxylum americanum	Prickly ash

Section VIII. References

1. "Botanical Survey" for Berberian Property Section 16 City of Southfield, Oakland County, MI, Wetland and Coastal Resources, Inc. Lansing, MI, December 2003

2. Oakland Land Conservancy Stewardship Manual

3. Oakland Land Conservancy Staff Project Manual

Section IX. Appendix

1. Monitoring Site Visit Forms

Oakland Land Conservancy

Stewardship Funding Plan and Pledge Form

Revised: May 20, 2005

Stewardship Fund Policy: *The purpose of the Conservancy's stewardship funds is to provide income to the organization in order to monitor and actively steward Oakland Land Conservancy protected lands now and in the future. Income and realized gains from the funds will be available to the Board of Trustees for expenditure in connection with Conservancy stewardship programs. Funds for stewardship may come from donor-restricted contributions or may be board-designated. Before closing on a protected property, the Conservancy is required to identify the amount of contribution to the Legal Defense Fund and to the Endowment Fund for future monitoring and stewardship of the protected property. The landowner or other suitable party will be requested to make this contribution. If the landowner is unable to make this contribution, the Conservancy Board must approve a plan for obtaining the needed funds before accepting the property. Policy approved by Board of Trustees March 10, 2003.*

1. Stewardship Endowment Contribution: Monitoring — $7,500*

   Deposit: Community Foundation of Greater Rochester – Oakland Land Conservancy Endowment Fund. Income from this contribution will be restricted to stewardship. Donation is eligible for Michigan Tax Credit.

   Purpose: Fund annual monitoring and conservation easement approvals required by Conservation Easement. Will also help to cover staff costs for providing information and advice to help landowner with management of property. Estimated average annual cost of $300.

   *Complex properties and easements or properties over 100 acres may require more funding. Baseline $7,500 amount may need to be revised after field studies are completed.

2. Legal Defense Fund Contribution — $2,500

   Deposit: Community Foundation of Greater Rochester – Oakland Land Conservancy Legal Defense Fund.

   Purpose: Fund legal costs of easement defense. Estimated cost for one legal problem every 10 years is $1,000. Additional funds available from pooled legal defense funds if needed.

3. Endowment Contribution: Long Term Organizational Support — $_____

   Deposit: Community Foundation of Greater Rochester – Oakland Land Conservancy Endowment Fund. Income from this contribution will be used for general operations of the Conservancy. Donation is eligible for Michigan Tax Credit.

   Purpose: An optional, additional contribution to the Endowment Fund will help ensure that Oakland Land Conservancy has the needed resources to continue working with landowners and communities to preserve and protect additional properties (Suggested contribution: $10,000).

4. ***Total Contribution to Oakland Land Conservancy*** — ***$***_____

Landowner Pledge: I pledge a total of $ _____ that I will contribute for deposit to the ***Community Foundation of Greater Rochester***, designated to the ***Oakland Land Conservancy Endowment and Legal Defense Funds*** as described above, within one month of the date that the Conservation Easement on my property is recorded with the county register of deeds.

Signature: _____ Date: _____

OAKLAND LAND CONSERVANCY
Donna Folland, Executive Director
PO Box 80902
Rochester, Michigan 48308
Phone: 248 601 2816
email: folland@wwnet.net
www.oaklandlandconservancy.org

Oakland Land Conservancy

Stewardship Funding Plan for Development with Conservation Easement

Revised: June 14, 2005

Stewardship Fund Policy: *The purpose of the Conservancy's stewardship funds is to provide income to the organization in order to monitor and actively steward Oakland Land Conservancy protected lands now and in the future. Income and realized gains from the funds will be available to the Board of Trustees for expenditure in connection with Conservancy stewardship programs. Funds for stewardship may come from donor-restricted contributions or may be board-designated. Before closing on a protected property, the Conservancy is required to identify the amount of contribution to the Legal Defense Fund and to the Endowment Fund for future monitoring and stewardship of the protected property. The landowner or other suitable party will be requested to make this contribution. If the landowner is unable to make this contribution, the Conservancy Board must approve a plan for obtaining the needed funds before accepting the property. Policy approved by Board of Trustees March 10, 2003.*

1. Stewardship Endowment Contribution: Monitoring — $7,500

   Deposit: Community Foundation of Greater Rochester – Oakland Land Conservancy Endowment Fund. Income from this contribution will be restricted to stewardship. Donation is eligible for Michigan Tax Credit.

   Purpose: Fund annual monitoring and conservation easement approvals required by Conservation Easement. Will also help to cover staff costs for providing information and advice to help landowner with management of property. Estimated average annual cost of $300.

2. Legal Defense Fund Contribution — $2,500

   Deposit: Community Foundation of Greater Rochester – Oakland Land Conservancy Legal Defense Fund.

   Purpose: Fund legal costs of easement defense. Estimated cost for one legal problem every 10 years is $1,000. Additional funds available from pooled legal defense funds if needed.

3. ***Total Invested Funds*** — ***$ 10,000***

4. Annual Stewardship Fee — $ 2,000 per year

   Deposit: Oakland Land Conservancy Stewardship Restricted Fund

   Purpose: For conservation easements associated with developments the Annual Stewardship Fee is generally paid by the Homeowners Association. The Annual Stewardship pays for ongoing management activities provided by Conservancy staff such as invasive plant removal, ecosystem restoration, providing education to residents, coordinating volunteer workdays, and other activities.

OAKLAND LAND CONSERVANCY
Donna Folland, Executive Director
PO Box 80902
Rochester, Michigan 48308
Phone: 248 601 2816
email: folland@wwnet.net
www.oaklandlandconservancy.org

Oakland Land Conservancy

STEWARDSHIP VEHICLE

Please call 248 601 2816 (office)
Or 248 736 1649 (cell)
if you have any questions

Oakland Land Conservancy

PO Box 80902
Rochester, Michigan 48308-0902

248-601-2816

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THE OAKLAND LAND CONSERVANCY IS A PRIVATE NONPROFIT ORGANIZATION WHOSE MISSION IS TO PRESERVE, PROTECT, AND CONNECT NATURAL AREAS AND OPEN SPACES TO ENHANCE THE QUALITY OF LIFE IN AND AROUND OAKLAND COUNTY.

Date

Landowner
Address
Address

Dear "Landowner":

As Stewardship Coordinator for the Oakland Land Conservancy I would like to take this opportunity to say hello as well as acquaint you with our organization and invite you to join us as we work within Oakland Land Conservancy's "PRESERVE" located adjacent to your property.

The Oakland Land Conservancy (OLC), founded in 1990 by a group of concerned citizens; is a nonprofit organization whose mission is to preserve, protect, and connect the natural areas and open spaces of Oakland County. We currently protect over 200 acres of natural area through both nature preserves that we own and conservation easements that we manage. We work year round on land preservation all over the county as is shown by our present negotiations with communities and landowners to preserve an additional 1000 acres.

Why protect this land? Southeast Michigan was once dominated by vast oak forests, scattered prairie openings and tamarack swamps. Bear and elk were prevalent as were wildflowers and wetlands. Today, this scene is vastly different. Oakland County is becoming increasingly developed with businesses, homes, and industry. While this economic growth benefits us by providing jobs, places to live, and convenience, the OLC believes that we also benefit by setting aside land for open space enjoyment, environmental protection, and wildlife habitat. This is why we will be in your neighborhood, monitoring and working to preserve and restore this native landscape.

Enclosed is a copy of our latest biannual Preservation Update newsletter that outlines our latest projects and is filled with useful information for nature preserve neighbors.

The PRESERVE NAME is a PRESERVE DESCRIPTION and is located adjacent to your property. Throughout the 2005 field season, OLC Staff and volunteers will be periodically visiting PRESERVE NAME to conduct workdays and site visits. Please let me know if you are interested in joining us during our PRESERVE NAME visits.

For more information about the work we will be doing within the PRESERVE NAME or to learn more ways that you can assist in the preservation of the OLC Preserve located near you, please contact me at: 248.601.2816 or elavender@oaklandtownship.org.

Sincerely,

Erin Lavender
Stewardship Coordinator/GIS Specialist

Oakland Land Conservancy

Oakland Land Conservancy
Management Recommendations
Stonehenge Estates Subdivision

The Stonehenge Estates Subdivision open space area, established in 1989, is located around the perimeter of the subdivision as well as covering a large wetland to north of the subdivision. It is protected by a conservation easement, held by the Charter Township of Oakland and monitored by the Oakland Land Conservancy.

Benefits: The protected area consists of wetlands that provide a vegetated filter and point of absorption for excess stormwater and runoff from homes and lawns. The open space also provides wildlife habitat as well as an opportunity for the subdivision residents to enjoy nature close to home.

Goal: Preserve the natural state of the open space so it continues to provide the benefits of wildlife habitat, stormwater absorption and nature enjoyment.

Recommendations; Here are some things you, as a natural area neighbor, can do to help keep your natural area healthy and functioning properly:

1. ***Use native plants in your landscape.*** Native plants have many features that make them favorable in a garden setting: they are compatible with Michigan's climate reducing the need for fertilizer and water; local wildlife, such as butterflies and song birds, are more attracted to plants with which they have evolved; and native plants come in a large array of colors, shapes, sizes and bloom times. Native plants also significantly reduce the worry associated with plants escaping the garden and harming nearby natural areas.
2. ***Install a rain garden on your property.*** Rain gardens are a great solution to the impervious surface area problem created by your home and driveway. Instead of running straight into a waterway, the runoff from your property (which is usually contaminated with salts, fertilizer, oil and other substances) goes into the rain garden. Installation and design are relatively easy and floral content is only bounded by your imagination.
3. ***Compost yard waste instead of dumping at the property boundary.*** Yard waste, although organic, can harbor both plant pests and seeds of undesirable species that can invade a natural area devastating its integrity. Plus, multiple large clumps of abandoned waste scattered around a natural area can look unsightly.
4. ***Control exotic invasive plant species in your yard and within the natural area.*** Exotic species are a major threat to our natural areas, second only to habitat loss. You can be part of the solution by knowing which plants are the biggest environmental threat in your area and learning their proper removal technique so you can remove them on sight.
5. ***Know where the conservation easement is located.*** Knowing where the conservation easement is in relation to your property will help you to keep activities not permitted in the easement (such as mowing) on your own property. Understanding the extent of the entire easement will help you to work with your neighbors to care for the open space together and help it thrive as a natural area.

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ANNUAL SITE VISIT REPORT FORM

PROPERTY NAME: _____

DATE OF VISIT: _____

1) Property name: _____

2) Reason for visit: □ Annual Site Visit □ Other _____

3) Steward's name: _____

4) Inspection team members' names:

_____

_____

_____

_____

_____

5) Property owner's name (if applicable): _____

6) Did a representative of the property accompany you on your inspection? □ Yes □ No

   i) Representative's name and relationship to the property:

   _____

7) Present use(s) of the restricted property:

_____

_____

8) Did you notice any possible violations of the conservation restrictions? □ Yes □ No

   If "Yes", be specific: _____

_____

_____

_____

_____

9) Describe the general condition of the property:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

10) Did you notice any exotic plant species? If so, what species and where?

11) Remarks (particularly to present condition of property):

12) Recommended next steps:

13) Time spent on the property: _____

14) Name of team member taking photographs: _____

15) Have you attached a copy of your landowner contact letter? □ Yes □ No

16) Are any correspondences concerning this site visit attached? □ Yes □ No

a) List: _____

17) Has the *Photo Point Data Form* been filled out and attached? □ Yes □ No

18) Are copies of the photographs and their aerial key attached? □ Yes □ No

Signature of Conservancy Personnel: _____

PHOTOGRAPH DATA FORM

DATE: ______________________________

PROPERTY NAME: ______________________________

PHOTOGRAPHERS NAME: ______________________________

Photo Point #	Picture #	Bearing	Description / Comments
1	A	90°	

Photo Point #	Picture #	Bearing	Description / Comments

Notes:

Species List

Property Name: ____________________

Plant Community Name: ____________________

Date: ____________________

Latin Name	*Common Name*

Latin Name	*Common Name*

OAKLAND LAND CONSERVANCY

SITE VISIT RECORD SHEET

VALLEY WOODS NATURE PRESERVE – 2005

Date of Visit:	Reason for Visit:	Name of Visit Leader:	Visit Form Completed?

(Last revised: 9/20/05)

Oakland Land Conservancy
Site visit Report Form

Date of Visit: _____

1) Property name: _____

2) Reason for visit: □ Group Tour □ Site Inspection □ Other _____

3) Participating volunteers' names:

_____

_____

_____

_____

4) Did a representative of the property participate in the visit? □ Yes □ No
   i) Representative's name and relationship to property:

_____

5) Describe details of the visit (where you walked, what you saw, etc.):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

6) Recommended next steps:

_____

_____

_____

_____

_____

_____

_____

_____

_____

7) Time spent on the property: _____

8) Name of team member(s) taking photographs: _____

9) Are any correspondences concerning this visit attached? □ Yes □ No

10) Are any photographs attached? □ Yes □ No

Signature of steward or site visit team member: _____

(Last revised: 01/08/04)

OAKLAND LAND CONSERVANCY
WORKDAY REPORT FORM

DATE OF VISIT: _____

1) Property name: _____

2) Reason for workday: □ Invasive Removal □ Trash Pick-up □ Other _____

3) Participants' names:

_____

_____

_____

_____

4) Did a representative of the property participate in the workday? □ Yes □ No
   i) Representative's name and relationship to property:

   _____

5) Describe the work that was preformed:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

6) Recommended next steps:

_____

_____

_____

_____

_____

_____

_____

_____

7) Time spent on the property: _____

8) Name of team member(s) taking photographs: _____

9) Are any correspondences concerning this workday attached? □ Yes □ No

10) Are any photographs attached? □ Yes □ No

Signature of steward or workday team member: _____

(Last revised: 06-27-05)

RELEASE OF LIABILITY BY VOLUNTEERS USING HERBICIDES

In consideration of my participation as a volunteer herbicide applicator for the Oakland Land Conservancy at _____, I state and agree as follows:

1) I am familiar with and understand the proper techniques for applying herbicides in a safe and effective way. I understand that I will be applying _____ and _____ and I am aware of any health risks associated with the use of these chemicals. I agree to take proper precautions in using these chemicals to minimize the health risks to myself and others. Following application, I agree to store or dispose of any remaining chemicals in accordance with the directions of the Conservanc and any applicable laws and regulations.

2) I agree to follow the instructions of the Conservancy in connection with the application of the chemicals. I have been instructed i and understand the proper operation of the equipment I am to use. I understand that my participation in this activity may involve sustained strenuous physical activity and exposure to these chemicals. I am in good health and am aware of no physical problem or condition which would limit or interfere with my ability to participate in this activity. I understand that this work may be conducted in remote areas and that medical attention may not be readily available.

3) I am aware that the use of chemicals can be a dangerous activity. I agree that I am participating in this activity at my own risk, an acknowledge that the Conservancy has made no warranty or representation, express or implied, regarding the safety of this activity.

4) I agree to waive and release the Conservancy and its officers, directors and employees from any and all claims, liabilities, losses, damage, costs and expenses resulting from any injury to me or damage to my property arising out of my presence on Conservancy lands, my travel to and from those lands, and my participation in herbicide application activities. I further agree to be responsible for any injuries or damage caused by my failure to follow Conservancy and manufacturer's instructions with respect to use and application of these chemicals or because of any inaccurate statements I have made in this release.

5) By signing below, I acknowledge that I have thoroughly read and understand this form, that the statements I have made in it are a true, and that I am at least 18 years of age.

Signature of Volunteer	Print or type name	Date

ACKNOWLEDGEMENT BY CONSERVANCY WORK LEADER

By signing below I acknowledge that I have thoroughly reviewed this form with the volunteers named above.

Signature of Work Leader _____ Print or type name _____ Date _____

RELEASE OF LIABILITY FOR MINORS

In consideration of my participation as a volunteer removing alien weeds and/or collecting native prairie seeds to assist the Oakland Land Conservancy with the restoration of native plant species at _____, I state and agree as follows:

1) I have volunteered my time and my services because of my support for the Conservancy and because of my desire to participate actively in the furtherance of its work. I am aware of potential health risks associated with removing weeds and collecting seeds, and I agree to take proper precautions to minimize the health risks to myself and others.

2) I agree to follow the instructions of the Conservancy in connection with weed removal and seed collection. I understand that my participation in this activity may involve sustained strenuous physical activity and exposure to herbicides. Although ***I will not be applying herbicide myself***, I understand that they may be used in the area where I am working, and I agree to follow the instructions of the Conservancy in connection with washing my skin and clothing if I should happen to come into contact with herbicide. I am in good health and am aware of no physical problem or condition that would limit or interfere with my ability to participate in this activity.

3) I am aware that weed removal and seed collection can be dangerous activities because I may be exposed to hazards including, by way of illustration but not limitation: weather, poisonous insects or plants, hazards associated with strenuous manual labor, and hazards associated with the use of loppers, hand saws and herbicide. I agree that I am participating in this activity at my own risk, and I acknowledge that the Conservancy has made no warranty or representation, express or implied, regarding the safety of this activity. Because the assertion of claims against the Conservancy for personal injury occurring during my volunteer service would be antithetical to my support of the Conservancy and its goals and would reduce the ability of the Conservancy to accomplish its charitable purpose, I am granting this release.

4) I agree to waive and release the Conservancy and its officers, directors and employees from any and all claims, liabilities, losses, damage, costs and expenses resulting from any injury to me or damage to my property arising out of my presence on Conservancy lands, my travel to and from those lands, and my participation in weed removal and seed collection activities. I further agree to be responsible for any injuries or damage caused by my failure to follow Conservancy instructions with respect to weed removal and seed collection or because of any inaccurate statements I have made in this release.

5) By signing below, I acknowledge that I have thoroughly read and understand this form, that the statements I have made in it are all true, and that I am at least 18 years of age. (If I am not 18, I have had one of my parents sign below).

Signature of Volunteer _____

Print or type name _____ Date _____

PARENTAL CONSENT FOR PARTICIPATION BY MINORS

I am the parent or guardian of _____ who has my permission to participate as a volunteer for the Oakland Land Conservancy. I make all of the representations and agree to all of the terms specified above with respect to my child's or ward's participation in these activities.

Signature of Parent or Guardian _____

Print or type name _____ Date _____

ACKNOWLEDGMENT BY CONSERVANCY WORK DAY LEADER

By signing below I acknowledge that I have thoroughly reviewed this form with the volunteer named above.

_____ _____ _____

Signature of work leader Print or type name Date

Herbicide Application Record

GLYPHOMATE 41 – 41% active
ACCORD CONCENTRATE – 53.8% active
Other: _____

□ **CRRP** □ **Voorheis Lake Wetland** □ **Cedar Lake** □ **Golden** □ **Allen Lake**

□ **other** _____

Applicator's name: _____ Date of Application: _____

Starting & Stopping Times: _____ Target Species: _____

Weather (Temp., Precip.) 24 hours before: _____

Weather (Temp., Precip.) During Application: _____

Woody Treatment

Buckthorn, shrubs, tress

1 part herbicide concentrate to 1 part rinse water			
Applicators Needed	Herbicide Concentrate (oz.)	Rinse Water (oz.)	Total Diluted Mix (oz.)
1	4	4	8
2	8	8	16
3	12	12	24

Herbaceous Treatment

Purple loosestrife, cattails, Phragmites, Reed canary grass

1 part herbicide concentrate to 10 part rinse water			
Applicators Needed	Herbicide Concentrate (oz.)	Rinse Water (oz.)	Total Diluted Mix (oz.)
1	.5	5	5.5
2	1	10	11
3	1.5	15	16.5
4	2	20	22

A. Amount of herbicide concentrate used in mix → _____ ounces
B. Amount of diluted mix at start of day → _____ ounces
C. Amount of diluted mix at end of day → _____ ounces
D. Total amount of diluted mix applied → _____ ounces (B - C)

Description of work (include location *ex. West side of 3rd ditch*):

Signature of workday team member: _____

ENVIRONMENTAL MANAGEMENT CENTER
BRANDYWINE CONSERVANCY P.O. BOX 141 CHADDS FORD,
PENNSYLVANIA 19317 215/388-7601 • 459-1900

DRAFT

CONSERVATION EASEMENT VIOLATION POLICY

I. Violation Prevention

A. To improve easement compliance, it is suggested that the listing brokers of limited development/easement projects be contacted and informed about easements in general and the specific limitations of the subject easement. We should also insist that all buyers of eased lots meet with a Conservancy staff member prior to settlement so that we may explain the easement.

B. It is suggested that we sponsor a general meeting with area real estate brokers (or those who often deal with easement properties) to explain easements and the Conservancy's policy for monitoring and enforcement.

II. Source of Violation Notification

A. Summer interns
B. Random staff observation
C. Third party informants (i.e., neighbors)
D. Easement donors
E. Townships, banks, title companies

III. Types of Violations

A. Minor: i.e., road-side trash, minor tree cutting
B. Major: i.e., construction, excavation, pollution, timbering
   1. after the fact/irreversible; requires compensation and/or reclamation
   2. on-going; requires cease/desist and restore order
   3. before the fact/reversible; requires review and analysis

C. Common Violations
   1. dumping
   2. tree cutting
   3. construction without BC approval
   4. property sale without notice
   5. draining of wet areas

IV. Violation Response Policy

A. Report and describe violation to designated staff member.
B. Review easement document.
C. Visit site, physically inspect violation.
D. Evaluate violation and required corrections.
E. Contact violator by telephone. Explain problem and BC policy; request correction, replacement and/or cessation of activity; state deadline for

compliance (i.e., immediately, 7, 14, 21, or 30 days.) BE COURTEOUS.

F. Follow up phone call with letter. Reiterate oral explanations and requests (i.e., why a violation, corrective measures required, deadline for compliance), offer of assistance; need for compliance inspection.

G. Inspect site at deadline date.

H. If prompt compliance, send thank you note.

I. If non-compliance, send second letter. Be firm; site BC vested interests; restate required corrections, establish new shorter deadline date; copy to BC attorney.

J. Inspect site at second deadline date.

K. If prompt compliance, send thank you note.

L. If non-compliance, notify EMC Director or Assistant Director. Determine new response.
Send third letter. Give notice of impending legal action if immediate compliance not achieved. Copy to attorney.

M. Call attorney to discuss legal action. Have attorney send letter requesting compliance.

N. Initiate BC corrective measures (optional).

° This material is designed to provide accurate, authoritative information in regard to the subject matter covered. It is provided with the understanding that the Land Trust Alliance is not engaged in rendering legal, accounting, or other professional counsel. If legal advice or other expert assistance is required, the services of competent professionals should be sought.

Oakland Land Conservancy

Proposal: Monitoring program for Conservation Easements held by Rochester Hills

September 20, 2005

I. YEAR ONE:

A. Research

1. Review of existing easement documents and location of properties; obtain legal review as needed
   Up to 8 OLC staff hours

B. Field Studies

1. Provide Conservancy staff with city-approved identification badges or a letter stating that they are on site on the city's behalf
2. Conduct field survey of easements to establish baseline condition and review boundaries
   Estimated 4 OLC staff hours, including travel and prep, depending on size of easement
3. Field marking of easement boundaries
   Performed by city or contractor

C. Reports

1. Prepare project file documents, including a summary of easement restrictions and enforcement rights and management recommendations
   Estimated 4 OLC staff hours
2. Mapping of easements, both individually and on composite map (which also includes other protected properties)
   Estimated 2 OLC staff hours
3. OPTIONAL: Prepare full Baseline Documentation Report
   Estimated 20 OLC staff hours
4. OPTIONAL: Prepare full Management Plan (See Valley Woods example)
   Estimated 20 OLC staff hours

D. Communication

1. Letter to adjacent residents and homeowners association (HOA), if applicable, introducing monitoring program, inviting them to participate, and offering management recommendations
   Estimated 2 OLC staff hours
2. OPTIONAL: Presentation to homeowner's association or other local interest group
   Additional 4 OLC staff hours

E. Estimated OLC costs: See time estimates above; all staff time estimated at $25/hour

- First year Monitoring Program set up: $500 per easement
- Optional Baseline Documentation Report: $500 per easement
- Optional Management Plan: $500 per easement
- Optional HOA presentation: $100

II. YEAR TWO and thereafter:

A. Communication

1. Schedule monitoring date in partnership with HOA representative or other key resident
2. Spring: Send letter to adjacent residents and HOA, if applicable, announcing monitoring date and inviting participation
   Estimated 1 OLC staff hour
3. Fall: Follow up to residents and HOA with letter summarizing findings, management recommendations, and general helpful information
   Estimated 1 OLC staff hour
4. Answer questions and provide information as requested by city and residents
   Estimated 2 OLC staff hours

B. Monitoring

1. Review Project File and prepare updated documents and maps for site visit
   Estimated 2 OLC staff hours
2. Conduct site visit led by OLC Staff and including residents and city staff (if available)
   Estimated 4 OLC staff hours

C. Reporting

1. Prepare end of year report on monitoring of all properties and deliver to designated city department or committee
   Estimated 2 OLC staff hours
2. Report violations as they are observed to designated city official

D. Optional Management Plan Implementation

1. Implement approved Management Plan
   OLC staff hours dependent on plan details; estimated 8 hours Staff stewardship; 8 hours coordination of volunteer workdays; and 4 hours planning and communication = 20 hours

E. Estimated OLC costs: See time estimates above; all staff time estimated at $25/hour

- Annual Monitoring: $300 per easement; may increase with complexity of easement or number of adjacent homeowners
- Optional Management Plan Implementation: $500 minimum per easement per year; may need grant funding for more intensive implementation.

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A Guide to Conservation Easement Monitoring

by Jennifer A. Adkins

Although no boilerplate conservation easement monitoring system has yet been devised to thwart all easement violations, a sound easement monitoring system—stressing regular monitoring—can save a land trust thousands of dollars in legal costs, help protect the conservation easement system, and maintain good landowner relations.

Every monitoring system must be tailored to the particular needs of individual land trusts. But there are several critical components that should be part of a good monitoring program.

Establishing Inspection Frequency and Method

First, how often and how should monitoring be conducted?

Inspection frequency and methodology must be based on the accessibility to easement areas, size and type of easement areas, level of activity permitted on easements and in surrounding areas, level of isolation of easement areas and, of course, an organization's monitoring budget.

Annual inspections have become the standard because they minimize monitoring costs while maintaining a consistent presence. However, in some cases, conditions require more frequent visits or allow less frequent visits due to the particularities of the easement and surrounding area. The physical features and accessibility of easement areas are perhaps the strongest determining factors in choosing a monitoring method.

Easement areas are commonly monitored by a combination of hiking and driving, but aerial monitoring and monitoring by boat may be required for areas with limited accessibility. Frequency and method of monitoring are matters best decided—and certainly must be supported—by an organization's board of trustees. In every case, they are matters deserving thought, discussion and input from all levels of the organization.

Scheduling

Second, an inspection schedule must be implemented. Two basic approaches can be used.

The first is to allow landowners to schedule a date and time for the inspection of each easement area. This is generally done through a mailing to all landowners, requesting that they contact the organization to set up an appointment for their annual inspection. In smaller programs or programs with extraordinary monitoring resources, this may even be done by telephone and on a case-by-case basis.

This method of scheduling allows maximum flexibility for a landowner and can be very convenient for a land trust when there are relatively few easements to inspect. However, when hundreds of landowners must be contacted, such scheduling is impractical.

The second approach—enabling a land trust to complete a large number of inspections as efficiently as possible while still encouraging landowner participation—is to have a land trust notify landowners in advance of inspection dates. Landowners must be notified of the visit in advance, generally through written correspondence known as an "inspection notice letter." The letter alerts a landowner of the upcoming inspection date , giving at least two weeks advance notice, and encourages him or her to participate. Inspection notice letters should come from a land trust representative who is known to most landowners—the director, for many organizations.

In this approach, the inspection notice letter may be the land trust's only correspondence with landowners prior to inspection. Therefore, it is important that the letter include a brief explanation of the visit's purpose and a request that all appropriate arrangements be made for the inspection, such as containing unfriendly animals and notifying others on the property about the visit.

Landowners should always be offered the opportunity to reschedule an inspection. Be sure to give landowners the name and telephone number of the individual who will be completing the inspection.

For organizations with a large number of easements, meticulous scheduling is often necessary to maximize inspection efficiency. Moreover, maintaining a general presence year-round in primary program areas can be enormously beneficial to prevent violations and to nip potential problems in the bud. In cases where easements include language regarding grantee inspection rights, care must be taken to insure that the scheduling practice employed is compatible with the easements' language.

Whichever scheduling approach is chosen, keep in mind that communication with landowners is most important and should not be overlooked.

File Review and Preparation

Before inspecting an easement area, an inspector should have a thorough knowledge of the area and the easement that protects it. Specific preparation procedures will vary depending on the size and character of easement area, complexity of the easement, type of materials and information kept on file, and the inspector's level of familiarity with the easement and landowner. Detailed files should be maintained on every easement. Inspectors unfamiliar with an area should thoroughly review all files before inspection. In these cases, thorough documentation of inspections and communications with landowners are absolutely necessary to inspection preparation, since review of the easement, past inspection records, and landowner correspondence records are critical to assisting inspections.

After or during file review, an inspection form and map should be prepared for use during the inspection. Land trusts generally formulate an inspection form or report that includes a checklist reflecting the organization's standard easement provisions. A form should be prepared for each property to be inspected and a photocopy of the easement plan map should be on the back for geographical guidance. During file review, notes regarding past problems, unique easement restrictions, or any other useful information can be made on the form. During inspection, the form serves as a

guide to the property's physical features, an easement's provisions, and an easement area's potential problems. The form, along with a clipboard, additional maps/aerials required to navigate the property, and additional supplies needed for the inspection (such as specialized clothing and drinking water in hot weather) should be gathered prior to the inspection.

Taking a camera on inspections is also recommended so photographic documentation of conditions, problems, or violations on the property can be made, particularly when there is high likelihood that conditions may change quickly.

Inspection Procedure

The particulars of an inspection are dictated by the property itself and the easement that protects it. However, there are several key components to a thorough, efficient inspection.

First, elicit assistance from those on the property whenever possible. Landowners, managers, farmers, or tenants can be immensely helpful to an inspector by providing information on property lines, land management practices, and other activities on the property. At the very least, inspectors should introduce themselves to anyone on the property at the time of the inspection. Remember, personal contact with property representatives during inspections is another opportunity to promote the organization and enhance communications.

During the inspection, critical attention should be paid to those areas with the most potential for easement violations. Therefore, getting a good look at property lines, protected natural areas such as woodlands, stream corridors and wetlands, past problem areas, and high-activity areas such as residential areas, farm building clusters, roadside areas, and trails are critical. Notes and photographs should be taken, as needed, to describe any obvious changes, problems, or possible easement violations.

Inspections should also serve as an opportunity to assess general property conditions. It is important throughout the inspection process to note the conditions present on the property, even when they are not at odds with the easement's terms. Such yearly records may be critical to establishing the property's prior condition in case of a violation. They can also allow land trusts to respond to a landowner's requests for advice throughout the year. Photographs

Annual inspections have become standard because they minimize monitoring costs while maintaining a consistent presence.

that illustrate the general character and use of the property can be helpful, especially if no recent photographs are on file. All these steps assist in updating documentation and in future inspections.

After completing an inspection, check in with the landowner or other property representatives to let them know that the inspection has been completed or to discuss the inspection's results. The discussion provides an opportunity to bring potential problems to the landowner's attention. It is also an opportunity to praise positive land management practices while suggesting ways in which the property's natural areas can be enhanced.

Inspection Follow-Up

The most important part of an inspection follow-up is to accurately record findings in a way that is easily understood by you and other staff members in years to come. Most inspection forms include a brief description of the property, its resources and uses and a checklist of the organization's standard easement restrictions to be completed by the inspector. Forms also include a section for noting land management practices and natural resource conditions of the property.

Completed inspection forms should be kept on file for future reference and as updates to the easement's original documentation report. Files should be updated to reflect any changes noted during an easement inspection to assist future management. Computer files and databases can also be used to record inspection findings, although printed copies of inspection reports should also be kept on file.

Taking the appropriate action when problems or violations are detected is part of the follow-up procedure. Clear and serious violations must be acted upon immediately. If the landowner is present during the inspection, he or she should be alerted to the problem while touring the property. If the landowner is not present and time is of the essence, every effort should be made to contact the landowner by telephone as soon as possible.

If the harm done by the violation is unlikely to worsen with the passage of time or if telephone contact is not an option, written correspondence should be used. In some cases, written correspondence may be preferable because it provides a written record of the organization's response to the violation.

Developing a clear and consistent policy for responding to easement violations will increase the comfort of all parties involved. Such a policy should be created with input and support from all levels of the organization. Violation remediation procedures may even be included as part of the easement agreement.

As conservation easements are put to the test of time, violation resolution becomes one of the most critical issues facing land trusts and deserves examination beyond the scope of this article. However, avoiding violations altogether (and the costs associated with them) also becomes more important with the growth of conservation easement programs. Although not every easement violation is avoidable, creating an effective easement monitoring system can deter violations, saving the land trust valuable resources and preserving the strength of conservation easements across the country.

Jennifer A. Adkins is a planner with the Brandywine Conservancy, Chadds Ford, PA, whose earliest easement dates back to 1969.

Volunteers watch over natural areas

BY ANNETTE KINGSBURY
STAFF WRITER

Robin Schmidt lives just a short walk off of Rochester Road in Oakland Township. Yet she's seen a pair of red-tailed hawks in her neighborhood, where tall oak and hickory trees peacefully coexist with new, upscale houses.

When she moved to the Stonehenge subdivision five years ago, "Certainly the setting was obviously a plus," she said. The small subdivision is unique because of the natural features that were preserved when homes were built. The meandering strip of green includes wetlands that serve as storm water collection.

Schmidt is one of several neighbors who have volunteered to keep an eye on their natural areas and make sure they are preserved in their natural state. This Neighborhood Stewardship Program is managed by the Oakland Land Conservancy in cooperation with the township.

Township Superintendent James Creech called the stewards the eyes and ears of the community.

"We do have quite a few conservation easements," he said. "They go and educate

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Stonehenge resident Robin Schmidt (right) gets assistance from the Oakland Land Conservancy, which is monitoring natural areas in her Oakland Township neighborhood. Barb Bray (left) is an OLC volunteer and Erin Lavender (center) is an OLC employee.

VOLUNTEERS

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ie public and do a little monitoring every year ...

You've got a lot of natural reas, drainage areas and areas at are nice amenities for the ghborhood. In the development process and approval rocess, we want to make sure ose things are maintained not encroached upon. It's sort of a passive thing. 'e're not the wetlands police there. ... People obviously ved here for certain reasons want to live here."

requiring developers to put land aside," Folland said.

The conservation easements are held by the township, she said. But without regular monitoring, they might not be maintained.

"We monitor it annually. We have a baseline we compare it to so we know if things need to be corrected," she said. "It's worked out very well. We're very proud of this program. ... It's kind of a long-term process to have people feel invested in their open space, not just to use it but feel invested in preserving."

So far, seven areas in