Rare Plant Surveys for the Michigan Department of Transportation: I-94 at M-127, Lansing Ave. and Elm Ave., Jackson, Michigan

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Cover: Stiff goldenrod (*Solidago rigida*) at northwest corner of US-127 and I-94 Interchange, Jackson, Michigan. Photo by Phyllis J. Higman.

Inside Cover: Common milkweed, whorled milkweed and Indian hemp were commonly seen in the project area, Jackson, Michigan. Photo by Phyllis J. Higman

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Introduction

This report provides a summary of rare plant surveys along two portions of the I-94 right-of-way in Blackman Township. The west portion starts just east of the US-127/West Avenue interchange, extending to and including the north and south US-127 interchanges, and further east just past Lansing Ave. It also includes segments of Lansing Ave. north and south of I-94 (Figure 1). The east portion starts midway between Cooper St. and Elm Ave. and extends just east of Dettman Rd. and includes the north and south Elm Ave. interchanges, portions of Seymour Rd., Barret Ln., Carmen Dr. and Blake Rd. (Figure 2). Surveys are required prior to reconstruction of the mainline and widening the existing median to complete a continuous weave lane between the US-127 West Avenue interchange and the M-127 South interchange, complete reconstruction of the Elm Ave. interchange including roundabouts at the ramp terminals, and reconstruction of the Lansing Ave. bridge. These surveys are required to ensure compliance related to MDOT Project 129153-202121.

Methods

A review of the Michigan Natural Heritage database was conducted to identify species listed as endangered, threatened or special concern with potential to occur in the survey area outlined in red in Figures 1 and 2. Nine prairie species were identified as targets, including six species that flower during mid-season and three species that flower during late-season (Tables 1 and 2). No Federally-listed species were identified as potential targets.

Table 1. Species targeted during mid-season surveys.

Scientific Name	Common Name	Listing Status
Asclepais purpurascens	purple milkweed	T
Baptisia lactea	prairie false indigo	SC
Brickellia eupatoriodes	false boneset	SC
Cirsium hillii	Hill's thistle	SC
Helianthus hirsutus	whiskered sunflower	SC
Sisyrinchium strictum	blue-eyed grass	

*T: state threatened; SC: state special concern

Table 1. Species targeted during mid-season surveys.

Scientific Name	Common Name	Listing Status
Bouteloua curtipendula	side-oats grama grass	E
Helianthus mollis	downy sunflower	T
Lechea minor	least pinweed	X

*E: state endangered; T: state threatened; SC: state special concern; X: extirpated

Aerial photos of the survey area were reviewed to delineate stretches of the right-of-way that clearly lack suitable habitat, including commercial, residential, developed, mowed, maintained or

cropped areas. Meander surveys were conducted throughout the remaining right-of-way from the edge of the existing mowed and maintained shoulder. Three additional areas proposed as potential ponds were also meander surveyed (Figure 1, 2).

Figure 1. West survey area at US-127 and I-94 including potential pond areas.

Figure 2. East Survey Area at Elm Ave. and I-94 including potential pond location.

Mid-season surveys were conducted on July 2-3 and late season surveys were conducted on September 4-5. A Garmin-64 GPS unit was used to record points of any targeted or other listed species any other points of interest observed during surveys. General descriptions and dominant species for each segment of the survey area were recorded on paper.

Results

The survey area was generally weedy, and no listed species were observed. Several areas had one or more somewhat conservative prairie species; however, none of these are listed species and other more common and weedy species were interspersed and dominant (Figure 3).

One occurrence of invasive Japanese knotweed (*Fallopia japonica*) was observed along the northern edge of the wooded portion of the potential pond at Maynard Rd. This appears to be a recent introduction as only a few small stems were observed. Two occurrences of what is likely Bohemian knotweed (*Fallopia* x *bohemica*) were observed at the northeast and northwest corner of the Lansing Avenue bridge (Area 14). The northeast occurrence is a large, well established colony, while the northwest occurrence is a much smaller outlier. An additional occurrence of Japanese knotweed was observed just north of the project area, on the east side of Elm Ave. across from Chanter Rd. One small occurrence of invasive phragmites (*Phragmites australis*) was observed at a culvert along I-94 along the Hurd-Marvin drain west of the US-127 interchange. One occurrence of wild parsnip was observed in the potential pond area north of Shirley Rd. (Area 8).These occurrences are shown in Figures 3 and 4.

Figure 3. West survey area for I-94 at US-127 showing numbered survey segments and points of interest. Prairie plants Japanese knotweed Bohemian knotweed Eurasian Phragmites

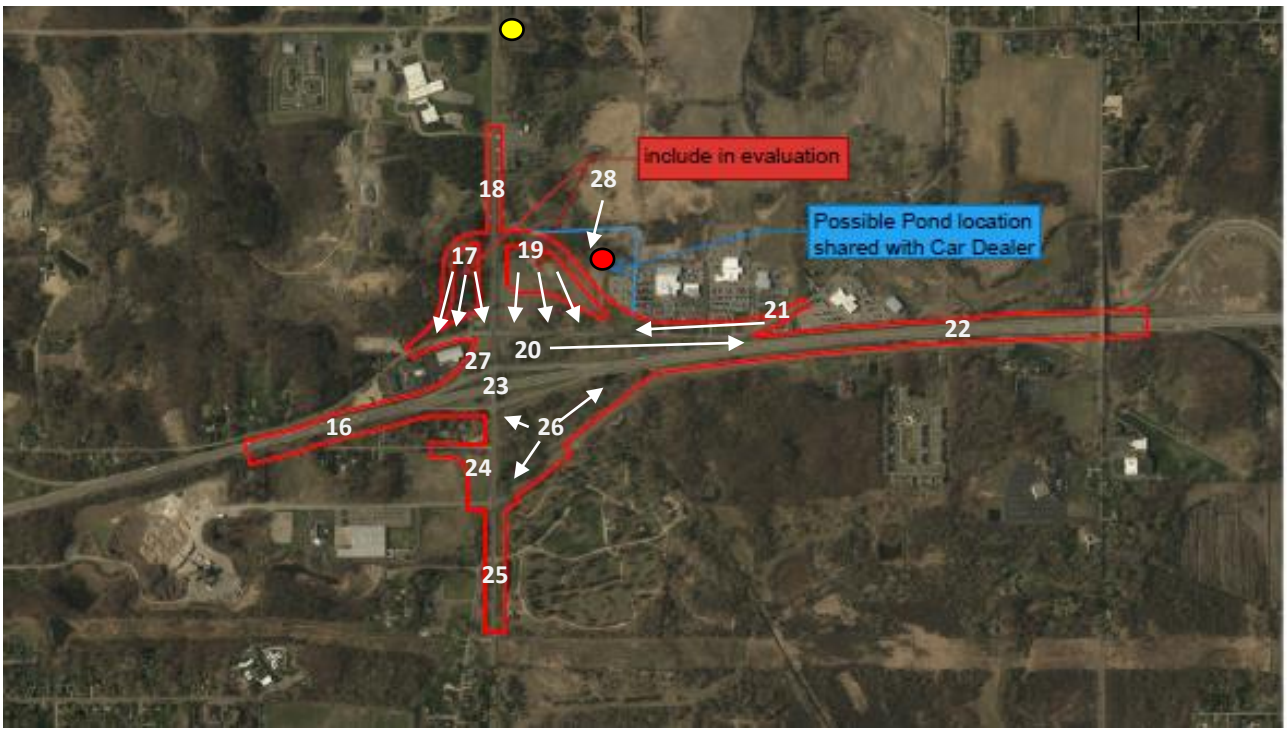


Figure 4. East survey area for I-94 at Elm Ave. showing numbered survey segments and points of interest. Japanese knotweed Wild parsnip

Summary of Survey Area Segments

Segments of the survey area were numbered as shown in Figures 3 and 4 above and brief descriptions of each are provided below. Shapefiles for the highlighted locations (Figures 3 and 4) accompany this report.

West Survey Area

Area 1: Potential pond east of Maynard Ave. and south of I-94.

A small diverse forest pocket undergoing invasion occurs in the northern edge of the site Figure 5, 6). The overstory includes white oak (*Quercus alba*), pignut hickory (*Carya glabra*), swamp white oak (*Quercus bicolor*) and cottonwood (*Populus deltoides*). The understory is a mix of native and non-native species including American elm (*Ulmus americana*), bittersweet nightshade (*Solanum dulcamara*), black cherry (*Prunus serotina*), box elder (*Acer negundo*), Canadian fly-honeysuckle (*Lonicera canadensis*), common buckthorn (*Rhamnus cathartica*) gray dogwood (*Cornus foemina*), Eurasian honeysuckles, multiflora rose (*Rosa multiflora*), prickly ash (*Zanthoxylem americanum*), river-bank grape (*Vitis riparia*) and wild red raspberry (*Rubus strigosus*). The ground flora is also a mix of native and non-native species, including Canada thistle (*Cirsium arvense*), enchanter's-nightshade (*Circaea canadensis*), garlic mustard (*Alliaria petiolata*), Jack-in-the-pulpit (*Arisaema triphyllum*), jumpseed (*Persicaria virginiana*), mayapple (*Podophyllum pedatum*), starry false Soloman-seal (*Maianthemum stellatum*), reed canary grass (*Phalaris arundinacea*), tall fescue (*Lolium arundinaceum*) and white avens (*Geum canadense*). Scattered stems of Japanese knotweed (*Fallopia japonica*) were observed along

the north-western edge of the forest by the sidewalk (Figure 3); this appears to be a relatively new introduction.

Figure 5. Forest pocket at Maynard and Boardman Roads, with a large white oak.

The southern half of the site is an undulating, open old field dominated by herbaceous, mostly weedy and invasive species. Common forbs include bird-foot trefoil (*Lotus corniculatus*), bull thistle (*Cirsium vulgare*), burdock (*Arctium minus*), Canada thistle (*Cirsium arvense*), fireweed (*Erechtites hieraciifolia*), grass-leaved goldenrod (*Euthamia graminifolia*), ground nut (*Apios americana*), horseweed (*Conyza canadensis*), ox-eye daisy (*Leucanthemum vulgare*), pokeweed (*Phytolacca americana*), spotted knapweed (*Centaurea stoebe*) tall goldenrod (*Solidago altissima*), wild Carrot (*Daucus carota*), wild teasel (*Dipsacus fullonum*) and yarrow (*Achillea millefolium*). Grasses include brome grass (*Bromus inermis*), fescues (*Festuca* spp.), foxtails (*Setaria* spp.), reed-canary grass and timothy (*Phleum pretense*). Many of these species occur in near-monoculture patches. Occasional clumps of big bluestem (*Andropogon gerardii*) were also observed.

Figure 6. Old field at Maynard Rd.

Occasional trees, shrubs and vines are scattered in the open area, including autumn olive (*Elaeagnus umbellata*), black locust (*Robinia pseudo-acacia*), green ash (*Fraxinus pensylvanica*), gray dogwood (Cornus foemina), swamp white oak (*Quercus bicolor*), and wild blackberry (*Rubus occidentalis*). Several ponded areas are also found here dominated by narrow-leaved hybrid cat-tail (*Typha angustifolia and Typha* x *glauca*).

Area 2: North and south of I-94, west of Maynard Ave to US-127 interchange

Figure 7. I-94 right-of-way west of US-127.

This is a narrow strip of non-native or weedy forbs and grasses including common milkweed (*Asclepias syriaca*), dock, (*Rumex* sp.), Indian hemp (*Apocynum cannabinum*), sweet clovers (*Melilotis* spp.), wild carrot (*Daucus carota*), wild teasel (*Dipsacus fullonum*), brome grass, fescues, quack grass, (*Agropyron repens*) and timothy. Portions include a wet ditch in the middle dominated by narrow-leaved cat-tail and reed canary grass. Trees and shrubs are scattered throughout including autumn olive, box elder, green ash, cottonwood, common buckthorn, black pine(*Pinus nigra*) and staghorn sumac (*Rhus typhina*).

Area 3: South of Hurd-Marvin drain

This area is dominated by reed canary grass monocultures interspersed with weedy old field species including brome grass, fescues, orchard grass, timothy, cow vetch (*Vicia villosa*); ox-eye daisy, sweet clovers, tall goldenrod and Canada goldenrod (*Solidago canadensis*). Several areas are dominated by narrow-leaved cat-tail and there some large patches of Canada thistle. This zone is bordered on the south by a ditch with a line of trees and shrubs dominated by box elder, cottonwood, green ash, common buckthorn, Eurasian honeysuckles, river-bank grape (*Vitis riparia*), Virginia creeper (*Parthenocissus quinquefolia*) and willows (*Salix* spp).

One patch of Eurasian phragmites (*Phragmites australis* subsp *australis*) was observed at a culvert across from Exit 138 (Figure 3, 9). This area is a small pocket of mesic hardwoods with a canopy of sugar maple (*Acer saccharum*), red oak (*Quercus rubra*), and box elder, with forbs such as garlic mustard, enchanter's nightshade (*Circaea canadensis*) and white avens.

Figure 8. Reed canary grass dominates Area 3.

Area 6 continued…

Figure 9. Patch of Eurasian phragmites observed in culvert area.

Area 5: Tip of northwest corner of I-94 and M127 interchange north of ramp

The right-of-way here is similar to Area 2, dominated by weedy forbs, grasses and occasional trees and shrubs, however, several more conservative prairie species were noted. These include butterfly weed (*Asclepias tuberosa*), stiff goldenrod (*Solidago rigida*) and showy goldenrod (*Solidago speciosa*) (Figure 3, 10). Several less-conservative prairies species including big bluestem, black-eyed susan (*Rudbeckia hirta*), little bluestem (*Schizachryium scoparium*) and wild bergamot (*Monarda fistulosa*) were also documented here. However, the majority of other forbs and grasses are weedy, including bull thistle, common cinquefoil (*Potentilla simplex*), common St. John's-wort, cow vetch, daisy fleabane, deptford pink (*Dianthus armeria*), ox-eye daisy, sow-thistle (*Sonchus asper*), spotted knapweed, tall goldenrod, wild carrot, brome grass, fescues, red-top (*Agrostis gigantea*) and timothy.

The scattered shrubs, trees and vines include apple (*Malus pumila*), black pine, box elder, common buckthorn, Eurasian honeysuckles, hawthorn, red cedar, river-bank grape, scotch pine (*Pinus sylvestris*), Siberian elm (*Ulmus pumila*) and Virginia creeper.

Figure 10. Prairie pocket with stiff goldenrod (middle) and showy goldenrod (right).

Area 6: East and west of US-127 north of I-94 interchange

This area is dominated by weedy forbs and grasses. Common forbs include butter and eggs (*Linaria vulgaris*), Canada thistle, chicory, common milkweed, early goldenrod (*Solidago juncea*), fireweed (*Erechtites hieraciifolius*), horseweed, spotted knapweed, sweet clovers, tall goldenrod wild carrot, wild teasel, yarrow, bromegrass, fescues and timothy. Scattered trees and shrubs include autumn olive, box elder, gray dogwood, hawthorn, red cedar and Siberian elm.

Figure 11, US-127 at I-94, looking north.

Area 7: Inner triangles and loops at US-127 and I-94 interchange

These areas are dominated by a matrix of weedy grasses and forbs and scattered clumps of trees, shrubs and vines (Figure 12). Dominant grasses are brome grass, fescues, reed canary grass and timothy. Forbs include daisy fleabane, grass-leaved goldenrod, evening primrose, horseweed, sweet clovers, and tall goldenrod. Trees and shrubs include autumn olive, black pine, box elder, cottonwood, red cedar, Siberian elm, staghorn sumac, and sugar maple. The small triangle south of the ramp (7A) in the southwest corner of the interchange has a small planting of prairie species (Figure 13).

Figure 12. Island in the US-127 interchange.

Figure 13. A prairie species planting.

Area 8: Potential pond north of Shirley Dr. east of US-127 and I-94 interchange

This is a heavily invaded wooded area laced with open trails and ditches (Figure 14, 15). Dominant trees and shrubs include autumn olive, black locust, blackberry, box elder, catalpa, choke cherry, common buckthorn cottonwood, elderberry, Eurasian honeysuckles, green ash, multiflora rose, river-bank grape, staghorn sumac and white mulberry. The ground is undulating with species such as black-eyed susan, brome grass, chicory, early goldenrod, horseweed, motherwort, ox-eye daisy, spotted knapweed, sweet clovers, timothy, wild carrot and yarrow

occupying higher elevations (Figure 14), and mats of reed-canary grass dominating the lower ground (Figure 15). Stiff goldenrod was observed in several upland openings (cover photo). Garlic mustard and dame's rocket are well established in the understory of the wooded areas.

Figure 14. Old field openings north of Shirley Rd. in potential pond area.

Figure 15. Reed canary grass infestation along ditch.

The right-of way on the north side of Shirley Rd. is a narrow strip of mowed weedy grasses and forbs.

Figure 16. Shirley Rd. looking east (left) and west (right).

Area 9: South of Shirley Dr. and north of I-94 to Lansing Ave.

Figure 17. Between Shirley Rd. and I-94, east of US-127.

This area of the right-of-way is similarly dominated by weedy grasses and forbs with scattered trees, shrubs and vines. It is a wide zone much of which is not mowed, and it harbors a diverse array of species. Forbs include black-eyed susan, bull thistle, Canada thistle, chicory, common milkweed, common St. John's-wort, daisy fleabane, dock, flowering spurge (*Euphorbia corollata*) Indian hemp, moth mullein, mullein, poison ivy (*Toxicodendron radicans*), tall goldenrod, showy goldenrod, spotted knapweed, sweet clovers, whorled milkweed, wild teasel, wild carrot and yarrow. Grasses include brome grass, fescues, Kentucky bluegrass, redtop, reed canary grass, rye grass (*Lolium perenne*) and timothy. Woody species include American elm, black oak, choke cherry, common buckthorn, cottonwood, glossy buckthorn, green ash, hawthorn, multiflora rose, red cedar, staghorn sumac, sugar maple, river-bank grape, tree-of-heaven, and trembling aspen. It is mowed directly adjacent to the highway.

Figure 18. Mowed area directly adjacent to I-94.

Area 10: East and west of Buisness-127 just south of I-94 interchange

This area is developed with shops and businesses and there is no suitable habitat for the target species.

Figure 19. Business-127 looking north.

Area 11: Southeast corner of US-127 and I-94 interchange

Figure 20. Environmental Area.

There is a small wetland area at the base of a steep slope up to Starbucks Coffee Shop dominated by narrow-leaved cat-tail. The hillside merges into a signed Environmental Area eastward along I-94 (Figure 18). This area is dominated by weedy forbs and grasses but has a prairie component, including evening primrose, flowering spurge, little bluestem, purple coneflower (*Echinacea purpurea*), switch grass, wild bergamot, and yellow coneflower (*Ratibida pinnata*). Other forbs and grasses include brome grass, bull thistle, Canada thistle, horseweed, Indian hemp, ragweed (*Ambrosia artemisiifolia*), sweet clovers, tall goldenrod, wild carrot and yarrow. Native purple coneflower is no longer considered extant in Michigan, so it is likely that this is an area that was planted with prairie species. Woody species here include autumn alive, box elder, common buckthorn, cottonwood, Eurasian honeysuckles, and riverbank grape.

Figure. 21. Yellow coneflower.

Figure 22. Purple coneflower.

Figure 23. Evening primrose.

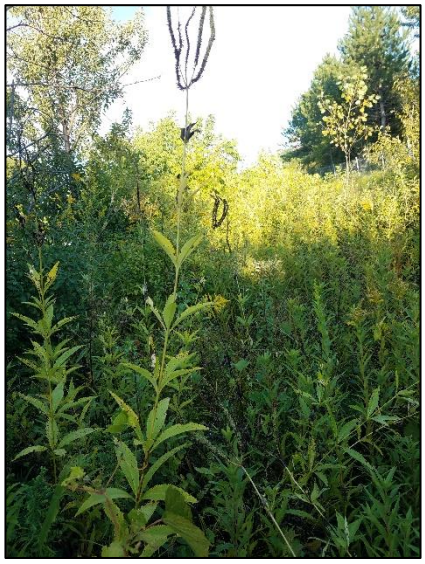
Area 12: South of I-94 east of US-127 interchange to Lansing Ave.

This area is a narrow strip of weedy forbs and grasses abutting a steep wooded slope (Figure 22). Forbs here include everlasting pea (*Lathyrus latifolius*), foxtails (*Setaria* spp.), reed canary grass, sweet clovers, smartweed (*Polygonum pensylvanicum*), tall goldenrod, wild rye (*Elymus* sp.) and witch grass (*Panicum capillare*). Trees, shrubs and vines are dominated by box elder, common buckthorn, cottonwood, river-bank grape and staghorn sumac. There is a small prairie pocket near the top of the slope just before Lansing Ave. where several conservative species were observed. These include culver's root (*Veronicastrum virginicum;* Figure 23), showy goldenrod and sunflower (*Helianthus strumosus*).

Area 12 continued…

Figure 24. South I-94 from US-127 looking east. towards Lansing Ave.

Figure 25. South I-94 east of Lansing Ave. looking north.



The finding of culver's roots was unusual—this is a highly conservative species with a C value of 8 (scores are from 0-10 with higher scores indicating greater fidelity to undisturbed, historical habitat).

Figure 26. A prairie pocket with Culver's root, south of I-94 and west of Lansing Ave.

Area 13: East and west sides of Lansing Ave, south of I-94.

This area is developed and lacks suitable habitat for target species.

Figure 27. Lansing Ave. looking south.

Area 14: Lansing Ave. north of I-94.

This area is developed and lacks suitable habitat for target species. However, a large, well-established colony of knotweed (*Fallopia* sp.) occurs north of a cleared and fenced area on the east side of Elm Ave. (Figure 3) and a smaller outlier patch occurs on the west side of Elm Ave. This appears to be Bohemian knotweed (*Fallopia* x *bohemica*) due to the presence of both flat and lobed leaf bases (Figure 29). This infestation may lie just outside of the right-of-way; however, it will be problematic if not treated.

Figure 28. Looking east from Lansing Ave. north of I-94 with Bohemian knotweed in the background.

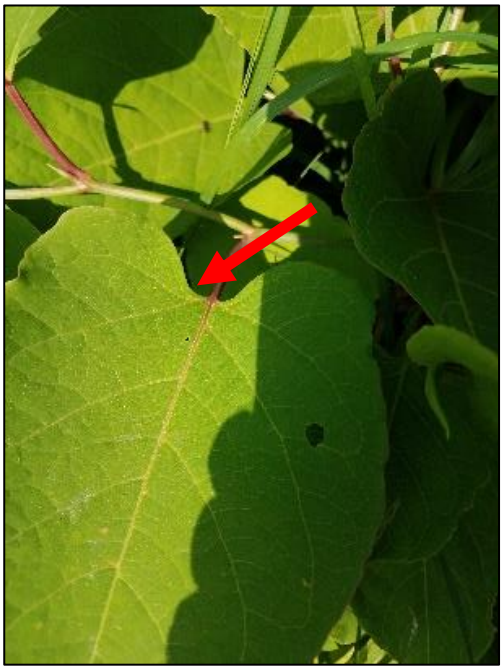


Figure 29. Likely Bohemian knotweed a leaf with a lobed base.

Area 15: North and south of I-94, east of Lansing Ave.

This area is dominated by weedy species including hoary alyssum (*Berteroa incana*), chicory, clovers (*Trifolium* spp.), common St. John's-wort, curly dock, horseweed, leafy spurge (*Euphorbia esula*), motherwort mullein, pigweed (*Cheonpodium album*), narrow-leaved plantain (*Plantago lanceolata*), ox-eye daisy, spotted knapweed, sweet clovers, foxtail (*Setaria* sp.), brome grass, quack grass, orchard grass (*Dactylis glomeratus*), tall fescue and Siberian elm. Occasional native species are interspersed, including common milkweed, daisy fleabane, evening-primrose, flowering spurge, Indian hemp, and river-bank grape.

Figure 30. North of I-94 looking east from Lansing Ave.

East Survey Area

Area 16: North and South I-94 and Rosehill Rd. west of the Travel Lodge.

This area is dominated by weedy forbs and grasses with occasional shrubs. Forbs include bull thistle, Canada thistle, chicory, common milkweed, common St. John's-wort, cow vetch, curly dock, daisy fleabane, evening primrose, field cress (*Lepidium campestre*) flowering spurge, hoary alyssum, leafy spurge, motherwort, moth mullein, mullein, narrow-leaved plantain, ox-eye daisy, pigweed, spotted knapweed, sweet clovers, tall thistle, and white campion (*Silene latifolia*). Grasses include brome grass, fescues, orchard grass, quack grass and various panic grasses (Panicum spp.).

The south side of I-94 is a narrow band of weedy forbs and grasses giving rise to a steep slope that rises to a tree line at the top, dominated by cottonwood and box elder.

Figure 31. Rosehill Rd. looking west.

Area 17: North of Rosehill Rd. W side of Elm; NW Corner Elm Ave and I-94

This is a forested area with a canopy of black oak, cotton-wood and trembling aspen (*Populus tremuloides*) and an understory of American elm, box elder, river-bank grape and Virginia creeper. It is heavily invaded by autumn olive, black locust, common buckthorn, Eurasian honeysuckles, glossy buckthorn, multiflora rose, Oriental bittersweet (*Celastrus orientalis*), Scotch pine (*Pinus Sylvestris*), and garlic mustard.

Figure 32. Invaded woodland north of Rose Hill Rd.

There is a park and ride with a mowed edge in the southwest corner adjacent to Elm Ave. and an open weedy right of way along the eastern border of the area. Species in the border include brome grass, tall fescue, tall goldenrod and staghorn sumac.

Area 17 continued...

Figure 33. Mowed edge of Park and Ride and weedy border of woods.

Area 18: East and west sides of Elm Ave. north of Areas 17 and 19

The rights-of-way are mowed or developed with no suitable habitat for target species. Japanese knotweed was found just north of here on the east side of Elm Ave. across from Chanter Rd. (Figure 4).

Figure 34. Elm Ave. North.

Area 19: Triangle at northeast corner of elm Ave. and Seymour Rd.

This area is predominantly a corn field with a pocket of wet woods along the southern edge and a wet reed canary grass zone to the north. The wooded pocket is dominated by box elder, catalpa, and cottonwood with occasional red cedar and tree-of-heaven. Common buckthorn, Eurasian honeysuckles and river-bank grape are in the understory. Ground flora includes tall goldenrod, aster, motherwort, hoary alyssum and horseweed.

Figure 35. Corn field bordering pocket of wet woods.

Area 20: Triangle south of Seymour Rd., north of I-94 and east of Elm Ave.

This is a weedy, undulating area with clumps of trees and interspersed openings. Trees include black oak, black pine, box elder, catalpa, cottonwood, green ash, red cedar and tree-of-heaven. Shrubs and vines include autumn olive, common buckthorn, Eurasian honeysuckles, staghorn sumac, river-bank grape, and wild blackberry. Forbs include asters, bull thistle, Canada thistle, common evening primrose, common St. John's-wort, hoary alyssum, horseweed, motherwort, pokeweed, sweet clovers, tall goldenrod, wild bergamot, wild carrot and yarrow.

Figure 36. Wet woods south of Seymour Rd.

Area 21: Northeast Seymour Rd. by car dealers.

The rights-of-way here are mowed and lack appropriate habitat for target species. A small wetland pocket dominated by narrow-leaved cat-tail occurs at the northwestern edge where it transitions into the cornfield in Area 19.

Figure 37. Mowed right-of-way along Seymour Rd.

Area 22: North and south of I-94 east of Elm Ave. interchange to Dettman Rd.

This segment north and south of I-94 is dominated by weedy herbaceous forbs and grasses including bull thistle, Canada thistle, chicory, common St. John's-wort, garlic mustard, horseweed, motherwort, moth mullein, mullein, ox-eye daisy, pigweed, spotted knapweed, sweet clovers, wild carrot, yarrow, barnyard grass, fescues, timothy grass, and quack grass. Native forbs included common milkweed, daisy fleabane, and dogbane. Occasional trees and shrubs are scattered throughout, including black pine, blackberry, basswood, box elder, common buckthorn, Eurasian honeysuckles, hawthorn, multiflora rose, red pine, red cedar, river-bank grape, and staghorn sumac. There are pockets of wetlands dominated by narrow-leaved cat-tail, with occasional willows and glossy buckthorn.

Figure 38. Blake Rd. right-of-way.

Area 23: Elm Ave interchange islands


The Elm interchange ramp islands are typical of the other weedy right-of-way areas with many grasses and forbs and scattered trees, shrubs and vines. Brome grass, fescues and quack grass are common, and there are occasional pockets of big bluestem, typically near the

Figure 39. Elm Ave interchange islands and nodding thistle.

ramp road edges—this species has likely been planted here. Forbs include asters, Canada thistle, chicory, common milkweed, common St. John's-wort, dogbane, evening primrose, nodding thistle (*Carduus nutans*), tall goldenrod, sweet clovers and spotted knapweed. Trees and shrubs are mostly cottonwood, box elder, common buckthorn and red cedar.

Area 24: SW Corner of Elm Ave and I-94 between ramp and Carmen Rd.

The south side of Carmen Rd. is mowed. North towards Barret Lane is an old field dominated by weedy species with dense patches of sweet clovers, Canada thistle and spotted knapweed. Other forbs include bouncing bet, Canada goldenrod, chicory, common evening primrose, common St. John's-wort, motherwort, moth mullein, mullein, narrow-leaved plantain, tall


Figure 40. South (left) and north (right) of Carmen Rd.

goldenrod, wild carrot, and yarrow. Grasses include brome grass, fescues, Kentucky bluegrass, love grass (*Eragrostis* sp.), orchard grass, panic grass (*Panicum* spp.) and tall fescue. Scattered woody species include autumn olive, box elder, common buckthorn, hawthorn and red pine. North of Carmen Rd. is mowed.

Area 25: Elm Ave south of Carmen St.

On the west side of Elm Ave is a wide mowed area that merges into a ditch dominated by narrow-leaved cat-tail, purple loosestrife, box elder and cottonwood. Other species include common buckthorn, dame's rocket, Eurasian honeysuckles, garlic mustard, tall goldenrod, teasel and river-bank grape. On the east side is a cemetery that is mowed except for a ponded area surrounded by cat-tails.

Figure 41. Elm Ave. south of Carmen St.

Area 26: Southeast triangle of Elm Ave. bounded by I-94, Elm Ave and Blake Rd.

This is a hilly, weedy woodland that grades eastward to hilly more open land. The canopy includes American elm, black oak, box elder, hawthorn, red maple, Scotch pine and silver maple, with an understory dominated by blackberry, common buckthorn, Eurasian honeysuckles, and river-bank grape. Ground flora is dominated by weedy and invasive species, including bull thistle, Canada thistle, dames rocket, garlic mustard, Kentucky bluegrass, motherwort, and pokeweed. A small pocket of oak-hickory forest occurs close to I-94, with shagbark hickory, white oak, black oak, and red pine.

Figure 42. Southeast Blake Rd. and Elm Ave.

The open areas are dominated by weedy grasses and forbs including brome grass, fescues, Kentucky bluegrass, orchard grass, quack grass, reed canary grass, timothy grass, common St. John's-wort, dock, goat's beard, grass-leaved goldenrod, horseweed, mullein, ox-eye daisy, spotted knapweed, tall goldenrod, teasel, wild carrot, and yarrow. Trees and shrubs are scattered throughout, including autumn olive, box elder, hawthorn and red cedar.

Figure 43. Open area east of woods.

Area 27: Northwest corner of Elm Ave and I-94 interchange

This area encompasses bare ground south of the Travel Lodge and merges eastward to a gully that slopes down from the southwest Elm Ave. ramp. The base of the gully is dominated by box elder, cottonwood and white mulberry. At the top of the slope are weedy forbs and grasses and a pocket of big bluestem (likely planted). Around the corner to the north is an old field area.

Figure 44 Clearing south of the Travel Lodge.

Figure 45. Gully north of Elm Ave. ramp.

Figure 46. Big bluestem at top of gully.

Figure 47. Old field at southwest corner of Elm Ave. and Rosehill Rd.

Area 28. Potential pond north of Area 19 east of Elm Ave.

Most of this area is saturated and dominated by reed canary grass. It is bounded by a wet ditch and wooded edge to the south. Weedy forbs and grasses such as Canada thistle, tall goldenrod, Indian hemp, fescues and quack grass also occur in dense patches. Other forbs include blue vervain (*Verbena hastata*), common evening primrose, common milkweed, pokeweed, tall goldenrod, willow-herb (*Epilobium* sp.), and wild parsnip (*Pastinaca sativa*) (Figure 4) were also observed. Sap from the parsnip can cause skin burns when exposed to light.

Figure 48. Potential pond north of Seymour Ave. looking east from Elm Ave.

Discussion

The project area is highly disturbed and dominated by non-native species, and no listed species were documented during surveys. While a few pockets with prairie species were documented, these do not offer substantial opportunity for restoration due to their small size and fragmented, invaded status. Several invasive species of concern were documented including Japanese knotweed, Bohemian knotweed and Eurasian phragmites (Areas 1, 14 and 3 respectively). These species are rare in the project area, which is unusual for this part of the state, and early treatment is recommended to minimize their spread and the cost of control. They have the potential for degrading road work and pose a long-term threat to the corridor. An occurrence of wild parsnip was documented in the potential pond area east of Elm St. (Area 28). This species typically lies under the radar but is starting to spread rapidly along corridors and is increasingly recognized as a human health risk. Treatment of this species is also recommended.

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