11-0010

CONSERVATION PLAN FOR THE EASTERN MASSASAUGA RATTLESNAKE

DUNDEE ROAD BICYCLE/PEDESTRIAN PATH PROJECT WHEELING, ILLINOIS

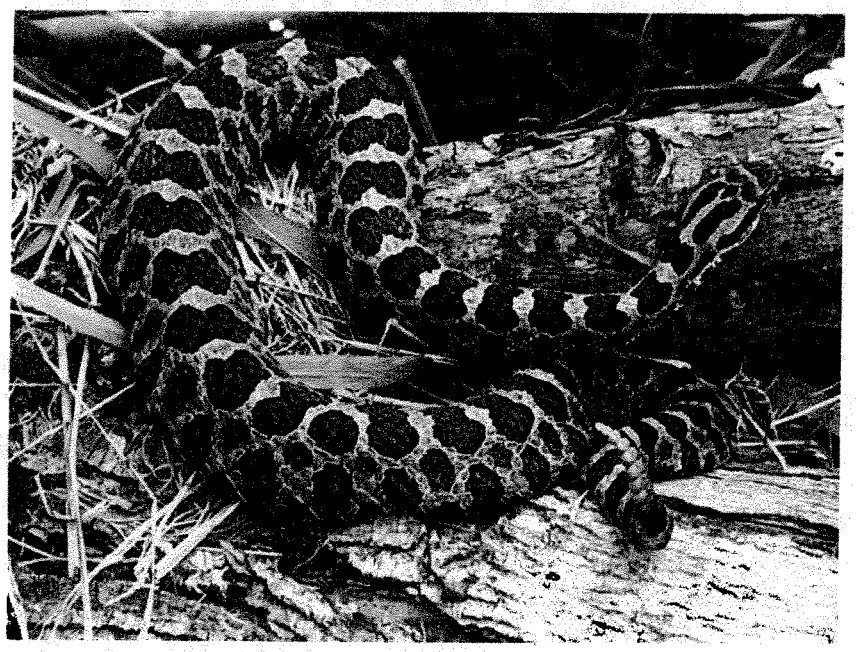

Photo by Rori Paloski, Wisconsin Department of Natural Resources

PREPARED FOR:
VILLAGE OF WHEELING
2 COMMUNITY BOULEVARD
WHEELING, ILLINOIS 60090

REVISED NOVEMBER 7, 2011

Stage II will be constructed in the future after a proposed traffic light is installed and operational at Portwine Road and Rt. 68. Stage II work will consist of a 10-foot wide bicycle/pedestrian path in the north right of way extending from the Potawatomi Woods Forest Preserve access road eastward approximately 1,500 feet to Portwine Road. In their wetland delineation of the Stage II corridor, Hey and Associates, Inc. identified one wetland totaling 0.04-acre (Wetland 2) within the study corridor. Wetland 2 consists predominantly of wooded wetland dominated by American elm and green ash (*Fraxinus pennsylvanica subintegerrima*) with some wet meadow dominated by blue-flag iris (*Iris virginica shrevei*). This wetland is part of a larger wetland system that shares a hydrologic connection with the Stage I wetland to the south through a culvert under Dundee Road. Both wetlands share a direct surface connection with the Des Plaines River to the west. Wetland 2 consists predominantly of wooded wetland dominated by American elm and green ash (*Fraxinus pennsylvanica subintegerrima*) with some wet meadow dominated by blue-flag iris (*Iris virginica*).

Eastern Massasauga rattlesnakes have historically inhabited the project area. The IDNR's internet Natural Heritage Database (December 1, 2010) identifies several sites "in the vicinity" that have records for Eastern Massasauga. The Natural Heritage Database indicates that the last observation of the Eastern Massasauga in Cook County occurred in May 2006 and in neighboring Lake County in 1987. Information compiled by the U.S. Fish and Wildlife Service marks the last observations for Cook County in 2009 and for Lake County in 1999. The draft *Illinois Eastern Massasauga (Sistrurus catenatus catenatus): Species Recovery Plan* prepared by the Illinois Natural History Survey (INHS) lists 2010 as the most recent date of observation for the "Des Plaines population" which includes the Wheeling area. The INHS draft recovery plan shows the Des Plaines population trend as declining and identifies several major threats including: small population size, vegetative succession, small habitat patches, development, fragmentation, predation, and human persecution.

CONSERVATION PLAN

The objective of this *Conservation Plan* is to avoid or minimize the risk of injuring or killing Eastern Massasaugas or disrupting their critical habitat during the construction of the bikepath. The following are the elements of the Plan, keyed to Title 17 Illinois Administrative Code, Chapter I, Part 1080.

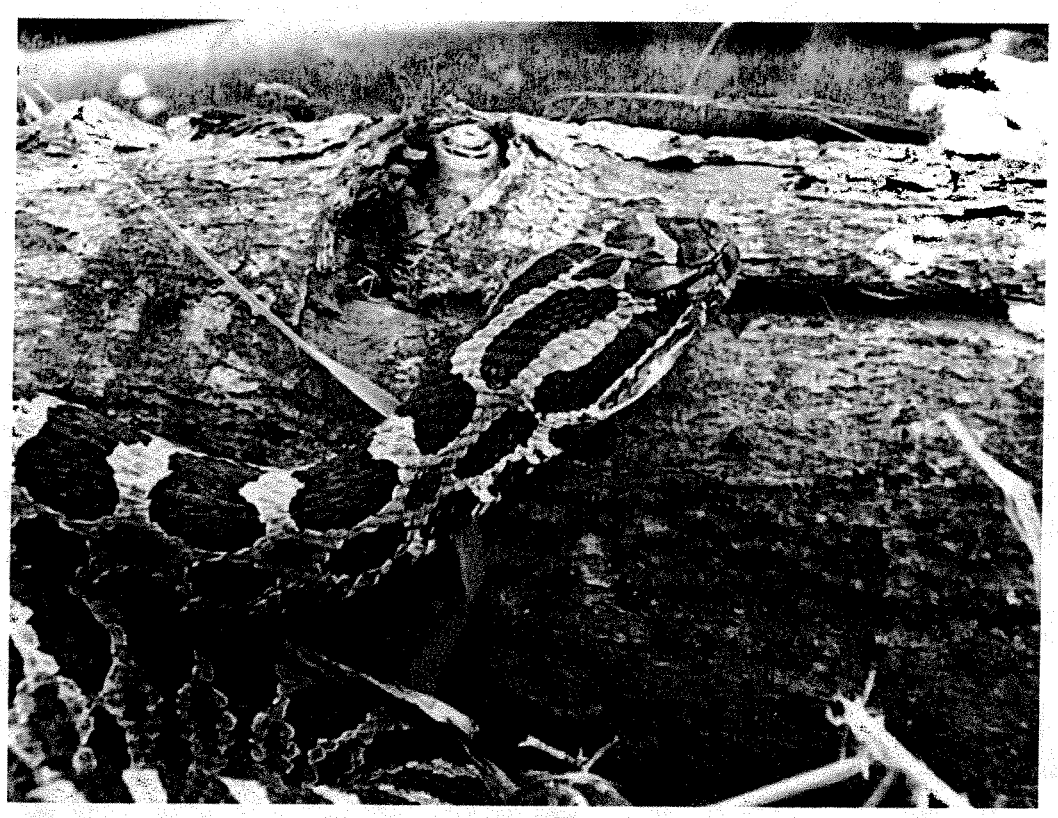

Photo by Rori Paloski, Wisconsin DNR

Habitat: Habitat fragmentation and habitat degradation are major factors contributing to the species' decline. The preferred habitat for these snakes is early successional grasslands although the species lives in a variety of other habitat types including wetlands (sedge meadows, wet prairie) and floodplains. It is known that Massasaugas often show seasonal shifts in habitat use, tending to favor wet prairie and meadow habitats in spring and fall and higher and drier habitats in summer. Wetlands and other areas with saturated soil and abundant crayfish burrows are preferred for winter hibernation. Open habitat (less than 50 percent canopy cover) is necessary for metabolic processes that require active thermoregulation, including gestation, digestion, and shedding. Pregnant females may move to open upland sites with sandy soils where they incubate their young.

One researcher has postulated that remaining Massasauga rattlesnakes in the Des Plaines River corridor tend to inhabit forest-edge and shrubby old field situations in or near areas of Montgomery silty clay and Nappanee silt loam. However, neither of these two soil types are mapped in the vicinity of the project area on the USDA Natural Resource Conservation Service's *Web Soil Survey* for Cook County, Illinois.

Snakes emerge from hibernation space in early to mid-April when soil temperatures average 51° F at 15 cm soil depth. The Wisconsin DNR reports emergence will usually be triggered by 3 consecutive days of mid-60° F weather following frost-out, especially if accompanied by a period of warm rain. The snakes remain active until mid- to late-October depending on air temperatures before hibernating again.

c. and d. Description of the Activities Potentially Resulting in Takings and the Anticipated Adverse Effects on Listed Species. This project involves the construction of paved bicycle and pedestrian path in the right of way of Dundee Road. Construction of Stage I in the south right of way is planned to begin in 2012. The timing for construction of Stage II in the north right of way has not yet been determined. The project will involve pre-construction layout, tree removal, erection of a retaining wall, earth grading, material placement and compaction, asphalt paving, and other activities associated with multi-purpose path construction. The paths will vary in width from 5 to 10 feet and will accommodate both bicyclists and pedestrians.

Habitat in the project area is already fragmented and compromised by the existing 4-lane Illinois Rt. 68. The primary transportation-related threat posed to snakes in the project area is that posed by the existing roadway, not by the parallel paths which will carry only pedestrians and bicyclists. It should be noted that there already are unsanctioned bandit dirt trails in the right of way and pedestrian and bicycle traffic already exists.

Project-related activities that might result in takings of the snake include crushing injuries or death to individual snakes during tree removal operations, grading operations, sub-base installation, or paving. Post-project, there will be a risk of snakes being accidentally or purposely killed or injured by bicyclists or hikers or taken by predators if individual snakes choose to bask on an exposed position on the finished pathway. Exposed snakes might also be seen and captured by collectors. However, the potential risk posed by the new pedestrian/bike path is judged to be small in comparison to existing risks posed to snakes and other herpetofauna by traffic on 4-lane Dundee Road.

2.) Measures by Applicant to Minimize and Mitigate and Funding Available to Finance Those Measures The Village is aware of its responsibilities regarding listed species and will demonstrate its commitment to those responsibilities through implementation of this plan.

b. **Plans for management of the area affected that will enable continued use of the area by threatened and endangered species** The proposed work will occur within the existing road right of way. Since the area is currently maintained as right of way with periodic mowing there are no changes proposed for management plans.

c. **Description of all measures to be implemented to minimize or mitigate the effects of proposed actions on listed species** The Village of Wheeling agrees to employ the following measures to minimize potential impacts and to mitigate the effects of impacts:

Scheduling of Construction Since no wetland impacts are proposed for the trail development, trail construction may be performed at any time of the year as long as exclusionary fencing (i.e. silt fence) is properly installed during the snake's hibernation period (typically between October 31 to April 1). It is assumed that any area snake will hibernate in crayfish burrows in the wetland area. By installing the fencing after hibernation and before emergence, this should prevent movement of any snake into the workzone.

Exclusion Fencing Exclusion fencing will be installed prior to the start of construction to sequester any rattlesnakes and other reptiles or amphibians from the construction zone. The fencing will consist of standard silt fencing that the Village contractor will install and maintain along the entire length of the project corridor. The exclusion fencing will be in addition to and coordinated with any silt fencing required for erosion and sediment control purposes.

The silt fence will be trenched into the soil to a depth of at least 4 inches and backfilled and compacted to prevent snakes from passing beneath. The fencing will include fence "turn-arounds" at the east and west ends as well as the Dam No. 1 Woods and Potawatomi Woods access roads. The silt fence will be inspected daily for breaches and any breaks in fencing or any downed fencing will be repaired immediately. If inspection reveals any Massasauga rattlesnakes, the agency notification protocol will be immediately activated so that any individuals can be quickly captured and re-located to Lincoln Park Zoo.

- Contractor Education/Snake Sighting Protocol Prior to the onset of construction, a mandatory meeting will take place on-site involving the Village and its ecological consultant, the project contractor and any sub-contractors. Additionally, interested natural resource agency personnel will be notified of the meeting. The meeting will be used to inform those

buffer would also maintain the wooded corridor character along Dundee Road to which motorists are accustomed and thus reduce likely public opposition that would ensue regarding tree removal on forest preserve property.

2. Employ prescribed burning, winter mowing, and herbicide treatments to maintain open canopy. Any burning and herbicide treatments, as well as any tree clearing or tree thinning operations, would be timed to coincide with the snake's normal hibernation period. For example, burns should be conducted only on cool, windy mornings in late winter or very early spring.

3. Investigate whether drain tiles are present in the Dam No. 1 Woods Forest Preserve. These could be disrupted to raise the on-site water table and re-create wet meadow conditions favorable to the snake. Raising the water table also would expand and improve crayfish habitat, thereby also benefiting the snake.

4. Prioritize habitat restoration efforts in specific sites where Eastern Massasaugas are known by agency experts to occur or where they recently have occurred.

5. Investigate whether any type of permanent exclusion fencing could be installed south of the bikepath to reduce snake roadway mortality.

d. **Plans for monitoring the effects of measures used to minimize or mitigate effects on listed species.** Since the potential number of Massasauga is so small, monitoring to show the effectiveness would be difficult to accomplish. Therefore, only the regular inspection of the exclusion fencing will be conducted. The contractor selected for construction will be required to hire a qualified environmental consulting firm to monitor the Eastern Massasauga as well as any other endangered species and also wetland per State and Federal permit requirements.

e. **Adaptive management practices to be employed to deal with changes or unforeseen circumstances** In the unlikely event that the measures planned to minimize takings are ineffective, the Village will work with the IDNR, the U.S. Fish and Wildlife Service, and the Lincoln Park Zoo to develop and employ alternate management practices.

- The no action alternative can also be argued to pose a greater risk to the Eastern Massasauga rattlesnake. The design of the path includes several walled segments, which, as noted in Section 2 (C), may have the added benefit of preventing snakes from entering the roadway. The path itself may also have this effect because there will be no cover from grass or brush. In addition, if the path is not constructed, the subject area will continue to be mowed to a height of 3" to 6" using a large tractor-mounted mower.

4) **Data and information to indicate that proposed taking will not reduce the likelihood of continued survival of the listed species in the wild in Illinois**

Habitat for the species has already been fragmented by the urbanization that has occurred in Cook and Lake Counties since World War II. Furthermore, vegetative succession in the Wheeling area forest preserves with more open, grassy prairie areas giving way to shaded forested canopy also has impacted habitat for Massasauga rattlesnakes. And, in terms of threats posed to individual remaining snakes, the road mortality risks presented by existing 4-lane Dundee Road 68 dwarfs any risks posed by a parallel bicycle/pedestrian path in the right of way.

There appears to be general consensus among experts that the northeastern Illinois population of Eastern Massasauga rattlesnakes is not stable and indeed has already reached such a critically low number that the species will unlikely to be able to return to a sustainable level in the wild. Accordingly, the focus of the current federal, state, and local recovery effort is to locate and capture the last remaining snakes in northeastern Illinois and place them in appropriate propagation facilities for captive breeding. The hoped for outcome is that a sufficient number of captive-bred and reared snakes can eventually be re-introduced to suitably restored wild sites that historically harbored the species. In the Chicago area, the recovery effort is being led by the U.S. Fish & Wildlife Service, the IDNR, and the Lincoln Park Zoo.

Given the foregoing, an objective of this *Conservation Plan* is to transport any snakes that are discovered and captured during the project to the Lincoln Park Zoo for protection and captive breeding. This *Conservation Plan* and the snake protection measures it will employ with Incidental Take authorization may help further recovery of the species by potentially being able to capture a snake suitable for captive breeding.

REFERENCES

Casper et. al. *Recommended Standard Survey Protocol for the Eastern Massasauga (Sistrurus catenatus catenatus)* U.S. Fish and Wildlife Service.

Dreslik, Michael J. 2010. *DRAFT Illinois Eastern Massasauga (Sistrurus catenatus catenatus): Species Recovery Plan.* Illinois Natural History Survey, Champaign, IL.

Johnson et al. 2000. *The Eastern Massasauga Rattlesnake: A Handbook for Land Managers.* U.S. Fish and Wildlife Service, Fort Snelling, Mn.

Mierzwa, Kenneth S. *Habitat Utilization and Status of the Eastern Massasauga Rattlesnake in the Chicago Region.* Metropolitan Toronto Zoo Rattlesnake Symposium.

U.S. Fish and Wildlife Service. *DRAFT Recovery Scorecard for Eastern Massasauga Rattlesnake.*

Wisconsin Department of Natural Resources. January 2009. *Protocol for Incidental Take Authorization.* Bureau of Endangered Resources. Madison, Wi.

Wisconsin Department of Natural Resources. Endangered Resources Program Species Information Eastern Massasauga *Sisturus catnatus catenatus*).Information found at (http://dnr.wi.gov/org/land/er/biodiversity/index.asp?mode=info&Grp=49&SpecCode=ARADE03011)

Wisconsin Department of Natural Resources. *Snakes of Wisconsin.* Bureau of Endangered Resources, PUB-ER-100 00, Madison, WI.

3. Recordkeeping. The Village and _____ agree to maintain reports, maps, and other information of any Eastern Massasauga rattlesnakes incidentally taken and to provide such records to the Illinois Department of Natural Resources upon request.

IN WITNESS WHEREOF, Village and _____ executed this agreement as of the date first above written.

VILLAGE OF WHEELING

By _____

Title _____

(PARTY/ENTITY/AGENCY TO BE DETERMINED)

By _____

Title _____