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ATWELL-HICKS
DEVELOPMENT CONSULTANTS

Conservation Plan

Blanding's Turtle (*Emydoidea blandingii*)
Sandhill Crane (*Grus canadensis*)

for

Wal-Mart Store #1377-04
McHenry Township, Village of Johnsburg
McHenry County, Illinois

USACE LRC # 2009-017
IDNR PROJECT # 0901189

Prepared for:

Wal-Mart Stores Inc.
2001 Southeast 10th Street
Bentonville, AR

Atwell-Hicks, LLC Project No. 400599

July 16, 2009

EXECUTIVE SUMMARY

Wal-Mart Stores, Inc. ("Wal-Mart") proposes to construct an approximately 181,163 square foot building with approximately 856 parking spaces, covering approximately 22.5 acres of an approximate 63.6-acre site (the "Site") located in Johnsburg, McHenry County, Illinois. The Site, which is primarily agricultural land, is located north of the town of McHenry. The Site borders Dutch Creek (Fox River tributary) on the north, abuts Illinois Route 31 on the east, is adjacent to cropland to the west and southwest, and abuts wetlands interspersed with commercial areas to the southeast.

Atwell-Hicks, LLC (Atwell) is the civil engineering and environmental consultant retained by Wal-Mart to coordinate planning for the project. As part of the project planning process, Atwell submitted a project review request to the Illinois Department of Natural Resources (IDNR) via IDNR's EcoCAT computer system (Project Number 0901189) to determine potential impacts to Illinois Natural Area Inventory sites or state-listed threatened or endangered species in accordance with Illinois Endangered Species Protection Act (520 ILCS 10/1). The EcoCAT response dated January 31, 2008 indicates that the state-threatened Blanding's turtle (*Emydoidea blandingii*) and state-threatened Sandhill crane (*Grus canadensis*) may exist in the area of the Site. It should be noted that based on recent IDNR information, the Blanding's turtle status soon will be revised to endangered, and the Sandhill crane is proposed to be removed from the threatened species list, pending final agency approval.

In order to investigate whether suitable habitat for either Blanding's turtles or Sandhill cranes exists on the Site which might be adversely impacted by the project, Atwell, on behalf of Wal-Mart, retained Dr. Gary Casper, a herpetologist, and Dr. William Southern, an ornithologist, to review available data, conduct habitat surveys and evaluate the Site. Based on their investigation, as detailed herein, the Site is not ideal habitat, but may be suitable seasonal habitat for Blanding's turtles and Sandhill cranes. Turtles may temporarily traverse the cropland in transit from more favorable habitats (North Gate West ADID wetlands) located south of subject property to Dutch Creek (ADID wetlands on said stream east of site) and floodplain areas along northern portions of the Site. Sandhill cranes footprints have been observed in the agricultural fields, which indicate that cranes may occasionally use the Site to forage.

The planned construction activities, as well as long-term maintenance of the preserved on-site wetlands, restored wetlands, prairie buffers, and naturalized stormwater management areas, may result in the incidental disturbance / harassment of Blanding's turtles and/or Sandhill cranes, hence a technical "taking" of these species. Per 17 IAC CH. I. sec 1070.10 the definition of "take" is "in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or attempt to engage in such conduct." Wal-Mart has applied for Incidental Take Authorization and submitted a Conservation Plan to the IDNR to address possible impacts to these two species as part of the Wal-Mart development, but such incidental taking is not the purpose of carrying out this lawful development activity.

As detailed herein, the Site development plan has been revised several times to lessen wetland impacts and incorporate best management practices (BMPs) to improve water quality by pre-treatment of all stormwater runoff and improve wildlife habitat, where little currently exists. Among other measures, the approximate 29.77 acres of designated native wetland and prairie plantings on the north and west sides of the development for wetland and floodplain restoration and stormwater detention basins will create a habitat corridor suitable for possible Blanding's turtle migration to and from Dutch Creek to North Gate West ADID wetlands located south of the Wal-Mart property, as well as potential stopover and foraging areas for Sandhill cranes.

Given the findings of the habitat assessments and the measures proposed in this Conservation Plan to minimize and mitigate for the potential taking (disturbance / harassment) of Blanding's turtles and Sandhill cranes, Wal-Mart does not anticipate that the proposed activity would diminish the likelihood of the survival of either species within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois. Wal-Mart believes that the enhancements to the marginal habitat as proposed in the Conservation Plan, especially with regard to Blanding's turtles, will in fact improve and provide additional habitat and connectivity for isolated populations, thereby increasing the likelihood of survival of the species.

1.0 INTRODUCTION

The purpose of this Conservation Plan is to provide a strategy to avoid adverse impacts to the Illinois state-listed endangered/threatened species listed below, or to the suitable habitat of these species, with regard to the construction of the proposed Wal-Mart Store Development in Johnsburg, Illinois. The Figure 1 Site Location Map in **Appendix A** shows the 63.6-acre subject property west of the Fox River, northeast of McCullom Lake and north of the town of McHenry. A railroad line is located just east of McCullom Lake and west of the subject property.

As explained within this Plan, this strategy consists of a combination of adjustments to the original proposed development plan, specific efforts to minimize potential impacts to species and habitat during and after construction, and mitigation of such potential impacts.

This Conservation Plan will support Wal-Mart's application to IDNR for an Incidental Take Authorization Permit under applicable Illinois law (520 ILCS 10/5.5).

Target Species
Blanding's turtle (*Emydoidea blandingii*) and Sandhill crane (*Grus canadensis*)

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2.0 PROJECT DESCRIPTION

Wal-Mart has proposed construction of a Wal-Mart Store on an approximately 63.6-acre parcel of land located on the west side of Illinois State Route 31 (Route 31), approximately one mile north of McCullom Lake Road in the Village of Johnsburg, McHenry County, Illinois (T45N, R8E, Section 23). Specifically, the project will be located on Parcel Numbers 09-23-100-021 and 09-23-100-023, which is currently owned by First Midwest Bank Trust 13376. Wal-Mart is the contract purchaser of the property. The Site currently consists of active agricultural field, 2.96 acres of delineated wetlands (intact functional and farmed wetlands) and waters of the U.S., including portions of Dutch Creek, and an upland wooded corridor. The Site is bounded by Dutch Creek, riparian wetlands adjacent to creek, agricultural fields, and new residential development to the north; oak woodland, farmland, wetland and commercial development to the south; Route 31, commercial development, an apartment complex, and single family residence to the east, and agricultural lands to the west. See Figure 1 Site Location Map in **Appendix A.**

A total of seven wetlands (including two intact functional wetlands and five farmed wetlands) were identified on the Site totaling approximately 2.96 acres, which covers only 5% of the 63.6-acre parcel used primarily for corn and soybean production. Wetland 1 is the on-site portion of Dutch Creek at 0.30 acres and Wetland 2 is the on-site portion of wet meadow at 0.23 acres that extends off-site at south end of property. Farmed Wetland 1 at 0.23 acres and Farmed Wetland 3 at 0.17 acres are located at the north and south ends of the site, respectively. Farmed Wetland 2 at 1.49 acres and Farmed Wetland 4 at 0.48 acres are located in the central portion of the property in separate depressions. Farmed Wetland 5 at 0.06 acres is located at southeast corner of site (extends off-site 0.09 acres) adjacent to the one acre residential apartment lot privately owned and 2-acre home lot owned by Location Finders International (LFI). The Natural Resources Map with wetlands, cropland and surrounding areas is Figure 2 in **Appendix A.**

No ADID wetlands have been identified on the development site. However, ADID wetlands have been identified east of the existing Illinois Route 31 Bridge crossing on Dutch Creek itself; and the North Gate West ADID wetlands have been identified south of the subject property adjacent to the North Gate commercial development. This North Gate commercial development includes the Firestone dealership and its parking lot, which abuts the southern boundary of the subject property and is situated between non-ADID wetland areas. Drainage from these North Gate West wetlands generally flows northwest around the Firestone dealership through a drainage swale, with interconnecting stormwater basins, and flows into the off-site extension of Wetland 2, then into on-site Wetland 2 and Farmed Wetland 3, where it flows into a drainage tile that continues northward across the farmland to its outfall into Dutch Creek.

The Existing Hydrology and Stormwater Map, Figure 3 in **Appendix A,** depicts the off-site wetlands and developed lands located mostly to the south, where surface drainage runoff eventually enters the subject property by drain tile. This off-site runoff drainage will continue to flow through the Site post-development through a rerouting of drainage tile to a restored wetland basin connected to the restored floodplain next to Dutch creek.

The Site plan has gone through several design revisions in order to reduce environmental and ecological impacts to the 63.6-acre parcel. The original plan designed in 2006 included a 203,819 square foot Wal-Mart building facing east towards IL Route 31, 1,021 parking spaces, and contained several truck maneuvering areas and a Tire Lube Express. The 2006 site plan included wetland impacts from filling Farmed Wetlands 2, 3, 4 and 5, and Wetland 2, removal of wooded corridor along the southern property line, construction of stormwater detention ponds, and creation of floodplain compensatory storage basins. The 2008 revision to the site plan reduced the size of the store building to 196,006 sq. ft., rotated the building to face north towards Running Brook Farm Road, reduced the number of parking spaces to 980, and eliminated the impact to Wetland 2. These two previous site plans and their design dates are provided in **Appendix B**.

The current 2009 proposed development further reduces the store size and consists of an approximately 181,000 sq. ft. Wal-Mart building, associated access drives, parking, stormwater management system, Route 31 improvements, two stabilized out lots, and one stabilized excess parcel. Out lots identified as Lot 1 (SE corner of site, 1.11 acre in size) and Lot 2 (NE corner of site, 2.77 acre in size) will be constructed and graded, along with adjacent roads and stormwater drain connections constructed. Then these two lots will be seeded with turf grass for stabilization and maintained until future development options are exercised. Excess soils from excavation of stormwater detention basin and floodplain areas not used elsewhere on Site will be stockpiled on Lot 5 (West side of site, 4.08 acres in size). The graded slopes will then be seeded with turf grass for stabilization and maintained until future development options are exercised.

As part of the Site plan construction, Running Brook Farm Boulevard will be constructed from Route 31 west across the site to provide access to the new store, as well as undeveloped property remaining to the west. Permanent impacts are proposed to include a total of 0.65 acre of farmed wetland and 0.07 acre of Dutch Creek and its associated riparian wetland by the Route 31 Bridge. Temporary wetland impacts include a total of 0.10 acre involving Wetland 1, Dutch Creek Bridge crossing at Route 31, and Wetland 2. The project proposes a number of habitat restoration and enhancement activities including: restoration and enhancement of 1.72 acres of farmed wetland (FW 1 and FW 2); enhancement of 0.59 acre of wetland (Wetland 1 and 2) and farmed wetland (FW 5); native plantings and restoration of approximately 19.94 acres of floodplain and slopes; preservation of a 0.30-acre wooded corridor; construction of 0.65 acre of bio-swales planted with native vegetation, and construction of approximately 8.11 acres of naturalized stormwater management basins and buffer.

Approximately 31.53 acres or 50% of the subject property will be dedicated to the preservation, enhancement, restoration and creation of naturalized wetlands, floodplain, woodland, bioswales, buffers and stormwater basins planted with native vegetation. Approximately 29.77 acres of designated native vegetation plantings on the north and west sides of the development will create a habitat improvement corridor suitable for possible Blanding's turtle and Sandhill crane usage. This current plan will increase turtle and crane friendly habitat through use of Best Management Practices (BMPs) within the stormwater and floodplain management plans compared to earlier Site Plans of 2006 and 2008. A copy of the current 2009 Site Plan is provided in **Appendix B**.

Where invasive plants like buckthorn, mulberry, honeysuckle, reed canary grass, and garlic mustard are present on-site in the existing Wetland 1 and 2 and/or located within the woodland-savanna corridor, these plants will be eradicated by appropriate herbicide and/or mechanical methods. Adjoining natural and undeveloped areas located off-site and not part of the Wal-Mart development that contain invasive vegetation will be identified, but the management of these areas is not under the control of Wal-Mart.

3.0 SPECIES ACCOUNTS

3.1 Blanding's Turtle

3.1.1 Species Description

Blanding's turtle is a semi-aquatic, medium-sized turtle identified by its bright yellow chin and throat (Harding 1997). The dome-like, elongated, smooth carapace is usually black with yellowish spots and streaks, and neither keeled nor serrated. The dark head is relatively flat with a short, rounded snout and notched upper jaw. The hinged plastron is typically yellow with a dark blotch on each scute. Hatchlings have a gray, brown, or black carapace from 1.2 to 1.4 inches long, a low keel, and a plastron with a large, black central blotch and yellow or cream color edge (Harding 1997, Lee 1999).

3.1.2 Distribution and Habitat

The range of Blanding's turtle extends from southern Quebec and Ontario through the Great Lakes region to central Illinois and west to central Nebraska; disjunct populations occur in northern New England, New York, and Novia Scotia (Ernst et al. 1994, Harding 1997).

Blanding's turtles prefer productive, shallow, lentic waters with abundant submergent and emergent vegetation. In addition to marshes, the species is also found in swamps, bogs, wet prairies, river backwaters, slow-moving rivers, ephemeral ponds, and lake shallows (Harding and Holman 1990, Van Dam 1993, Harding 1997). Blanding's turtles also utilize wet prairies, sedge meadows, and shrub-carrs to forage, bask, and hibernate, and terrestrial habitats adjacent to lakes and wetlands such as forests and meadows are utilized as movement corridors and for late summer foraging. As waters dry in the summer and fall, turtles typically move to other bodies of water or aestivate on land in mud or roots (Van Dam, 1993). Deeper water is important for hibernation, which typically occurs in the mucky or organic substrate underlying open bodies of water, but also takes place in ephemeral wetlands, sedge meadows and wet prairies where turtles burrow under hummocks (Casper, personal observations. Some individuals may remain semi-active throughout the winter (Ernst et al. 1994, Lee 1999).

3.1.3 Behavior and Ecology

Blanding's turtles become active as early as March or April in the Upper Midwest, and shortly after seek shallow aquatic environments for spring foraging. They often utilize terrestrial habitats in late summer, returning to wetlands in autumn where hibernation takes place. While active, they often are seen basking on logs, stumps, muskrat lodges, vegetation mounds, steep banks, or along roads (Ernst et al. 1994).

Nesting, which usually starts in late May and June, occurs in barren, grassy or bushy open areas consisting of sand or gravel soils. Nesting is known to occur on undeveloped land, but also within low-density residential property and disturbed areas including farm fields, gardens, utility corridors, gravel driveways, railroad embankments, and shoulders of dirt roads (Illinois NHS 2006, Minnesota DNR 2009). They often exhibit nest-site fidelity. Nesting sites are often far from wetlands, up to 1.5 miles, necessitating long distance overland movements for females and similar travel in the reverse direction by neonates upon emergence. As a result, they are at high risk of being killed while crossing roads between nesting sites and wetlands (Congdon et al. 1983, Piepgras et al. 1998, Minnesota DNR 2009, Wisconsin DNR 2005).

The primary foods of Blanding's turtle include crustaceans, frogs, small fish, insects, tadpoles, snails, and aquatic plants. The diet also includes earthworms, slugs, grasses, and succulent vegetation when on land (Lee 1999, Wisconsin DNR 2005). Blanding's turtles arrive at wintering areas by late October or early November, which are generally deep marsh, pond or lake habitats with organic substrates. They occasionally burrow into sedge or grass hummocks in shallow wetlands to overwinter. They emerge from hibernation as soon as ice-free conditions permit in March.

3.1.4 Species Status in Action Area

Habitat destruction has been the primary threat to Blanding's turtles. Habitat loss includes draining and flooding wetlands, stream channelization, water impoundments, development of upland nesting area, loss of land to agriculture and habitat degradation due to agricultural, herbicide and pesticide runoff. Road kills during seasonal movement are another serious threat (Illinois NHS 2006, Van Dam 1993, Harding 1997, Piepgras 1998).

Recent information provided from the Natural Heritage Database Management Section of the IDNR documents Blanding's turtles eors are 835 feet south and 2,200 feet east of the Site, while other eors are listed northwest, southwest and southeast of the property.

A significant challenge to achieving Blanding's turtle conservation is maintaining turtle-friendly connectivity on the landscape among the various critical habitat components such as over-wintering sites, summer foraging sites, and nesting sites.

3.2 Sandhill Crane

3.2.1 Species Description

The Sandhill crane is tall and almost uniformly light gray with a reddish crown patch, black legs, whitish cheeks and yellow eyes. They are approximately four to five feet tall with a six to seven foot wingspan. Males are slightly larger than females, but otherwise their appearance is similar. Immature cranes are mottled, have a gray body with a brownish head, and lack the red forehead (Hoffman 2001).

3.2.2 Distribution and Habitat

There are six subspecies of Sandhill cranes found in North America. The Eastern population of the greater Sandhill crane (*G. c. tabida*) nests in the northern United States and southern Canada, including Illinois. It is a migratory species, arriving in northern Illinois in early spring and returning south in the fall.

Primary components of breeding habitat include a nest site, roosting area and feeding area (Armbruster 1987, Ohio DNR 2009). Nest sites are typically located in relatively large, undisturbed, freshwater marshes and prairie ponds containing cattails (*Typha* spp.), bulrushes (*Scirpus* spp., *Schoenoplectus* spp.), and sedges (*Carex* spp.). Roosting habitat is characterized by uniformly shallow standing water located beyond the edge of emergent vegetation within a large expanse of marsh. Feeding areas include emergent wetlands, wet meadows, pasture, grain fields, and riparian areas (Tacha et al. 1992, Ohio DNR 2009). Juxtaposition of water (i.e., nesting and roosting sites) and food sources in isolation from human disturbances appears to be more important to habitat quality than the specific composition of the cover types (Ohio DNR 2009, Armbruster 1987). Habitats used along migration routes tend to be large, open marshes and riparian wetlands near agricultural areas, especially harvested grain fields, hay fields, and pastures (Northern Prairie Wildlife Research Center 2006).

3.2.3 Behavior and Ecology

Nesting typically begins in early March and extends through late June. Nests are typically constructed on 4-foot to 5-foot-wide piles of vegetation surrounded by shallow, open water. Occasionally dry land is used may be used as a nest substrate (Nyboer et al. 2006). Cranes defend nesting territories, to which they typically return annually (Littlefield and Ivey 2002).

The Sandhill crane is an omnivore, eating vegetation roots and tubers, seeds, berries, grain, small rodents, small birds, snakes, lizards, frogs, earthworms and insects (Beringia Natural History Notebook 1992). Although they feed in a variety of habitats, cranes often concentrate in agricultural fields adjacent to wetlands (Littlefield and Ivey 2000), and cranes in central Wisconsin have shown a greater preference for cornfields than for soybean fields (Sue 2003).

3.2.4 Species Status in Action Area

The leading threat to the greater Sandhill crane subspecies is the loss and degradation of wetland habitat, particularly within the Midwestern breeding range and on the wintering grounds in California and Florida (Northern Prairie Wildlife Research Center 2006). Additional localized threats to the crane include increased predation pressure, collisions, and lead poisoning (Northern Prairie Wildlife Research Center 2006).

According to Illinois Natural History Survey (INHS) records, there are no apparent breeding records for the Sandhill crane in McHenry County (INHS Database, April 17, 2009). However, recent information provided from the Natural Heritage Database Management Section of the IDNR documents approximately 17 breeding records or eors for Sandhill cranes in McHenry County. There are numerous 2008 eors for the Kettle Moraine Nature Preserve in McHenry County located south of the project site. A 2005 Sandhill crane eor is only 2,989 feet east of the subject property, which indicates they are known to occur within the vicinity of the Site.

Removal of the Sandhill crane from the list of state threatened birds was approved by the Illinois Endangered Species Protection Board on February 20, 2009 (Illinois Endangered Species Board 2009). The de-listing is based on increases in the population within the state, including a significantly increasing population in the northeastern part of the state (Ward et al. 2008) and establishing occurrences outside of northeastern Illinois (e.g., Calhoun, Carroll, Champaign, Grundy, Whiteside, and Winnebago counties) (Nyboer et al. 2006, Illinois Endangered Species Board 2008). The delisting of Sandhill crane specie from state threatened birds list is anticipated later this year by the IDNR.

4.0 HABITAT ASSESSMENT

Prior to the field investigation, background data sources were reviewed to characterize the natural resources on the site and identify areas of potential habitat for each species included in this Conservation Plan. The sources include:

USGS Topographic Maps
USDA Soil Survey Maps
McHenry County ADID Maps
Wetland Delineation Maps from Atwell Report
Aerial Photographs (1988, 2005)
Drain Tile Study Map

Copies of the background documents are provided in **Appendix C**. Photographs of the existing site conditions from May 2009 are provided in **Appendix D**.

The Illinois Natural Heritage Database records show that the state threatened Blanding's turtle (*Emydoidea blandingii*) and the current state threatened Sandhill crane (*Grus canadensis*) are known to occur in the local vicinity of the site. Recent information documents Blanding's turtles eors are only 835 feet south (North Gate West ADID wetland) and 2,200 feet east of the Site,

while other eors listed northwest, southwest and southeast of the property. There are numerous 2008 eors for Sandhill cranes at the Kettle Moraine Nature Preserve in McHenry County located south of the project site. A 2005 Sandhill crane eor is only 2,989 feet east of the subject property, which indicates they are known to occur within the vicinity of the Site. The proximity of the proposed development site to a known Blanding's turtle site and known Sandhill crane site, and the potential for both of these species to utilize the Site prompted a habitat assessment survey.

4.1 Blanding's Turtle (*Emydoidea blandingii*)

On April 16, 2009, a Blanding's turtle habitat assessment survey was conducted by Dr. Gary Casper of Great Lakes Ecological Services. The assessment commenced along the southern property line adjacent to the Firestone development and continued southward off-site walking along the fringes of the North Gate West ADID wetland and its drainage swale connecting to development stormwater basins and off-site portions of Wetland 2. The survey continued onto the on-site portions of Wetland 2, Farmed Wetland 3, Farmed Wetland 2, and then proceeded to the northwest corner of the site next to Wetland 1 and Dutch Creek. The assessment then followed the riparian corridor (mostly off-site) of Dutch Creek eastward to its box culvert crossing of Illinois State Route 31. The east side of the creek crossing of Route 31 was surveyed along with the eastern portions of the subject property. The habitat survey consisted of 2.5 hours spent walking the entire subject parcel and immediate off-site areas to the north (creek) and south (ADID wetlands). The off-site portion of the assessment consisted of 2.0 hours driving all available roads within 1 to 2 miles of the subject property (variable road distances are due to road positioning due to rivers and lakes). The survey was conducted to locate suitable habitat for the Blanding's turtle and to note any direct or indirect turtle observations. No direct or indirect turtle observations were recorded during the habitat survey.

On May 7, 2009, Kathi Davis of the IDNR met with Thomas Mangan of Atwell and Larry Falbe of Drinker Biddle and Reath, LLP, to survey the subject property and its adjacent lands to look for Blanding's turtles, and/or possible turtle habitat. A preliminary site plan and supporting documents were provided to Ms. Davis to familiarize her with the existing site conditions and the proposed habitat improvements as part of this Wal-Mart development. No turtles were seen during this reconnaissance of potential off-site and on-site turtle habitat.

Documented Blanding's turtle eors have been IDNR reported to the south, east, northwest, southwest, and southeast of the project site. General suitable habitat for this species in the local area is shown on Figure 4 in **Appendix A**. The ADID wetland complex to the east, across Illinois State Route 31, has been documented with an eor approximately 2,200 feet from the Site. A documented eor is approximately 835 feet south of the Site in the North Gate West ADID wetland. The upland areas surrounding this wetland complex are experiencing commercial development and road construction. This habitat connects to the southern boundary of the subject property by way of wetlands, drainage swale and stormwater basins. Contiguous with the project site to the north and northwest is some recently restored wetland and grassland habitat (immediately north of the subject parcel in what is shown as agriculture in the aerial photo), including two new ponds created for the ongoing residential development stormwater management. The stream corridor here connects these new habitats with additional potential suitable habitat to the northwest. A degraded habitat to the southwest is connected along an

agricultural drainage ditch to a pond and McCullom Lake with very little of the emergent vegetation wetland habitat preferred by this species. The railroad grade here would impede turtle movement as well. This lakeshore is highly developed and mostly unsuitable for Blanding's turtles. Drier soils in agricultural fields, gravel road shoulders, and the railroad grade are the most likely suitable nesting areas west of Illinois State Route 31.

Figure 5 in **Appendix A** depicts existing suitable Blanding's turtle habitat is lacking except for a small portion in the extreme northwestern corner where the agricultural ditch (Dutch Creek) may provide a movement corridor, and higher portions of the agricultural field occupying most of the subject parcel, which could potentially be utilized for seasonal nesting by area turtles.

Given that Blanding's turtles appear to be present in the area, there is a possibility that they could traverse the property before, during and after construction. Actual determination of viability and habitat use would require further study, utilizing mark-recapture and radio telemetry techniques. However, the potential impact to the habitat of any resident or transitory Blanding's turtles is likely to be positive overall, due to the planned increase in wetland and upland habitats associated with the substantial wetland and buffer areas proposed. Moreover, suitable habitats will be connected along the north, west and south sides of the Wal-Mart store and parking lots, by designing a span or culvert suitable for Blanding's turtles to cross under the new Running Brook Farm Boulevard. The loss of potential nesting habitat will be mitigated by designing some well-drained areas (mounds) in the floodplain and stormwater management areas to accommodate potential turtle nesting.

The maintenance of a relatively safe turtle movement corridor on-site from Dutch Creek on the north to North Gate West ADID wetland to the south is consistent with conservation planning. However, such planning should include similar corridor preservation south and west of the subject parcel if landscape level conservation planning is to have a high likelihood of success. Creating access to semi-isolated habitats may encourage turtles to use areas where high mortality is likely, creating a population sink. This potential danger is real in this case, where habitats are surrounded by high-traffic commercial development, and connecting corridors are narrow and becoming less safe as additional development proceeds.

As a result of the habitat assessment findings, it is the opinion of Dr. Casper that the proposed development is not likely to reduce the likelihood of survival of the turtle by impacting habitat essential to the species existence. While there is potential for the development to negatively impact individual turtles, the proposed enhancements including floodplain and wetland restoration, establishment of native vegetation, creation of nesting and foraging areas and installation of preventative barriers will likely improve the condition of any established or transitory Blanding's turtle population associated with Dutch Creek riparian corridor and North Gate West ADID wetlands.

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4.2 Sandhill Crane (*Grus canadensis*)

A Sandhill crane habitat assessment survey was conducted by Dr. William E. Southern on April 16, 2009. The on-site portion of the assessment consisted of two hours spent walking the entire subject parcel. The off-site portion of the assessment consisted of 3.5 hours driving all available roads within seven to ten miles of the subject property (variable road distances are due to road positioning due to rivers and lakes). The survey was conducted to locate suitable habitat for the Sandhill crane and to note any direct or indirect crane observations.

During the assessment, crane observations consisted of one crane flying over the northern edge of the site at about 200 feet above ground level and tracks of one crane within an area of drying mud near the northern border of the site. The tracks suggest that one bird landed on the site when the farmed wetland contained shallow standing water.

Conditions at the site demonstrated nothing to suggest attractive habitat for nesting or foraging cranes. Site wetlands are farmed and lack vegetative cover necessary for nest construction and concealment. In addition, the potential for human disturbance is high. The property was fall plowed in 2008 and, as a result, has limited value as foraging habitat for cranes in April and May 2009. It is the professional opinion of Dr. Southern that the Site does not contribute to any critical habitat for Sandhill cranes that may exist in this area. It should be noted, however, that once the wetlands and buffer areas are created and restored, the naturalized areas of the Site will become suitable habitat for foraging and resting.

There are numerous 2008 eors for Sandhill cranes at the Kettle Moraine Nature Preserve in McHenry County located south of the Site. A 2005 Sandhill crane eor is only 2,989 feet east of the subject property closer to the Fox River, which indicates they are known to occur within the vicinity of the Site. The off-site assessment of the surrounding area revealed that little optimal crane habitat exists except in close proximity to the Fox River. Given these findings, it is the opinion of Dr. Southern that it is highly unlikely that the subject property is essential to the success/survival of any population of Sandhill cranes that occurs in McHenry County. As a result of the habitat assessment findings, it is the opinion of Dr. Southern that the proposed Wal-Mart development will have no detrimental impact on Sandhill crane reproductive success in the state or the local area.

5.0 POTENTIAL EFFECTS OF PROPOSED ACTIONS

5.1 Blanding's Turtle

Overall, potential impact to any resident Blanding's turtles is likely to be positive (**Figure 6 in Appendix A**). While the proposed development will remove some potential nesting habitat, it will increase wetland and upland habitat, adding to similar restorations to the north. The existing movement corridor along the stream on the north parcel boundary will be maintained and improved by a substantial buffer on the Wal-Mart property. An oversized culvert (to be designed) will allow turtles to pass under the east-west roadway to be constructed to access the new stormwater facilities south of this road.

Wal-Mart will take measures to prevent the taking of Blanding's turtles during and after construction and does not anticipate a negative impact on the local population. However, because this species may travel through the site, or nest on the site, the development could result in a potential taking of the species by direct mortality of individuals by vehicles injuring or killing them and/or by indirect negative effects of habitat loss and fragmentation.

Potential adverse impacts on the Blanding's turtle may include:

- Construction activities may cause turtles to become trapped within the confines of the property and/or be crushed by construction equipment or vehicles.
- Post-construction, buildings, drives, and roads (curbs) may act as physical barriers to overland movement.
- Water quality may be degraded from stormwater runoff, automotive pollutants and road salt.
- Management of turf grass entailing the use of broad-spectrum, broadleaf herbicides, fertilizers, and insecticides that can result in damage to vegetation in and around detention basins and subsequent poor water quality (i.e., algal blooms) may be transferred to downstream waters.
- Heightened mortality or displacement of insects due to lighting that may alter the food chain.

5.2 Sandhill Crane

Wal-Mart will take measures to prevent the taking of Sandhill cranes during and after construction and does not anticipate a negative impact on the local population. The site assessment revealed that the site does contain suitable foraging habitat for the species, since records indicate the species occurs within the general project area. Potential adverse impacts on the Sandhill crane may include:

- Loss of foraging habitat due to conversion of upland cornfield habitat to a commercial development.
- Cranes are scared and fly off due to noise from construction vehicles/equipment.

Again, due to the absence of attractive habitat on the Site, and the measures to minimize adverse effects, the potential for incidental take by harassment from the proposed project is low.

6.0 MEASURES TO MINIMIZE AND MITIGATE POTENTIAL EFFECTS OF PROPOSED ACTIONS

Wal-Mart will take the following measures to prevent and minimize the incidental taking of Blanding's turtles and/or Sandhill cranes during and after construction.

6.1 Exclusionary Silt Fence

A toed-in silt fence will act as a physical barrier and discourage turtles from potentially traversing the site during construction. The silt fence will be installed prior to any land clearing, disturbance and/or construction. The silt fence will be installed in March and remain onsite throughout construction and shall be removed at the completion of construction after the site has been stabilized, and/or until late October. The fence will exclude turtles from the limits of work for construction activities.

The toed-in silt fence will be erected along the northern property line from Route 31 ROW on the east, and then extended west wrapping around Farmed Wetland 1, and continuing west along the boundary until intercepting Wetland 1 boundary onto the western property line. The fence will then extend south along the western property line to the southwest corner of the parcel. Another section of silt fence will erected along the southern property line and around the Wetland 2 and woodland strip boundary, and then continues to southeast corner adjacent to Route 31 ROW. Additional silt fencing will be installed around the south, west and north sides of the LFI out lot. Daily site inspections for the first two weeks and weekly inspections thereafter will be performed throughout the construction period to ensure that the exclusionary fencing is property installed and to check if any turtles are present. Under current plans, fencing would be erected in November, after any potential nests in the project area have hatched and offspring have moved to wetlands outside the limits of work. Proposed fencing location is illustrated in **Figure 7 in Appendix A**, which depicts the Site plan and BMP planting plan.

6.2 Construction Personnel Training

Construction personnel will be trained to visually identify the target species prior to commencing work on the site. Training will be conducted by Atwell personnel and a flyer with an illustration of the target species to be protected shall be provided to all contractors working on the site. This flyer will contain color photographs of adult and juvenile turtles and cranes. The flyer will be provided to the IDNR and to the work crews. Dedicated construction personnel will conduct periodic visual surveys for the target species during construction phase, as appropriate. Should either target species be identified during the construction phase, the dedicated construction superintendent shall immediately notify the IDNR Heritage Biologist at 815-675-2386 or McHenry County Conservation District (MCCD) Biologist at 815-338-6223 In addition, Mr. Thomas Mangan at Atwell will be contacted at 630-577-0800. If turtles are encountered, work crews will not handle them. If the turtles are in danger, work/vehicles must immediately stop until IDNR or MCCD personnel arrive to resolve the turtle situation.

6.3 Utility Trenches

Because utility trenches may trap turtles, trenches shall be checked by construction personnel for turtles prior to being backfilled. Trenches will be covered each night and checked first thing in the morning for presence of turtles.

6.4 Natural Habitat - Wetland, Floodplain, Woodland and Nesting

Natural landscape consisting of native grasses and forbs is proposed throughout 29.77 acres in the southern, western, and northern portions of the property. This includes areas of wetland restoration, enhancement and preservation; floodplain compensation and restoration; woodland seeding and stormwater detention basins. These areas will be interconnected via the naturalized stormwater management basins and culverts in order to provide a naturalized habitat corridor across the site for Blanding's turtles. Additionally, these same areas will also provide habitat for resting and foraging by Sandhill cranes. Invasive plant species, if present in these on-site areas, will be removed and replaced with native seed mixes.

Wetland Preservation, Enhancement and Restoration

With the exception of 0.07 acres of impact Wetland 1/Dutch Creek and the Route 31 bridge expansion, the development only anticipates impacts to those 0.65 acres (farmed wetland 3 and 4) wetlands that are currently farmed. Wetland enhancement with native plantings is proposed in 0.59 acres of wetlands preserved by the development (Wetland 1, Wetland 2, Farmed Wetland 5) that include 0.29 acres of enhancement, and 1.72 acres of farmed wetland (Farmed Wetland 1, Farmed Wetland 2) shall be restored and enhanced through native vegetation plantings. The enhanced and restored wetlands shall be protected by vegetated buffers and shallow earthen berms within the floodplain compensation and floodplain restoration areas.

Floodplain Compensation and Restoration

Approximately 14.28 acres of floodplain compensation and floodplain restoration are proposed on the north side of the site north of Running Brook Farm Boulevard. These areas include the restoration of Farmed Wetland 1 as well as additional areas of native emergent, wetland fringe, sedge meadow, and mesic prairie planting. The floodplain compensation and restoration areas are designed specifically with Blanding's turtles and Sandhill cranes in mind, by providing emergent pools and sedge meadow areas with shallow earthen berm adjacent to an upland prairie plant community. Additionally, these areas will provide a natural vegetated buffer between Dutch Creek and the development and aid in maintaining connectivity across the northern and southern portions of the site. This floodplain and wetland restoration will have standing water periodically across the entire area during heavy precipitation events that cause Dutch Creek to flood and its waters leave the main channel entering the floodplain. A majority of time the floodplain basins will be dry to moist, with open water present only in the emergent pools scattered across the these areas per the plan.

Additional floodplain compensation and restoration of Farmed Wetland 2 with emergent pools, wetland fringe, sedge meadow, and upland buffer areas totaling 7.15 acres is proposed south of Running Brook Farm Boulevard, west of the store site, and north of the stormwater treatment basins. This basin and wetland will have standing water periodically across the entire area during heavy precipitation events. The existing drain tile by existing Farmed Wetland 3 (filled) and Wetland 2 (preserved) will be rerouted west along the north side of the Wal-Mart building and then swung north around the west side of the building and parking lot to discharge into restored Farmed Wetland 2 to assist sustaining the hydrology of the wetland.

Woodland Corridor

An existing 0.30-acre wooded area of oak, cherry and cottonwood trees along the southern property boundary adjacent to the Firestone property shall be preserved and enhanced with native understory seeding. Invasive vegetation will be removed from this area. A designated woodland-savanna seed mix will be sown in this area and the adjoining 0.97-acre buffer zone.

Nesting Habitat

Currently, there is some potential seasonal turtle nesting habitat in sandy upland soils, where agricultural production occurs and the same areas where the Wal-Mart store and associated improvements are to be built. In order to off-set that loss of potential nest sites, several designated higher elevation areas on the west end of the parcel located both south and north of the new road could become potential nesting areas if constructed of well-drained soils with sparse vegetation. To the extent practicable, some of the earthen berms around the basins will be designed with these nesting features in mind. The creation of turtle nesting areas north of the new east-west Running Brook Farm Boulevard would be preferable, so turtles are not dependant on passing under the road through the box culvert(s) or bridge span. Mound areas of mixed sand, gravel and clay will be constructed one foot higher than surrounding topography in the floodplain for potential turtle nest areas as shown on Figure 7. Corresponding swale areas one foot deep will be constructed in the floodplain next to the mounds. Both areas will be planted with native seed mixes.

Connectivity of Habitats

Two identified off-site ADID wetlands have recorded Blanding's turtle sightings and provide suitable habitat. The Wal-Mart site of mostly farmland is located between these two wetlands in the Dutch creek watershed and currently offers marginal connectivity of these two ADID habitats. No ADID wetlands have been identified on site. However, ADID wetlands have been identified on Dutch Creek east of the subject site and Illinois Route 31 bridge crossing, while North Gate West ADID wetlands have been identified south of the subject property adjacent to commercial development and farmland.

The Dutch creek ADID wetland is riparian wetland habitat that extends east one mile from the subject property and connects to the Fox River habitat system, where turtle populations have mobility to relocate. The north portion of the project site is floodplain and its planned restoration into a mosaic of wetland and prairie communities with variable micro topography will connect

this new floodplain habitat to the existing stream corridor that extends to the Fox River. The restoration of 14.28 acres of floodplain and 0.23 acre Farmed Wetland 1 on the north end of the site into suitable wetland and turtle habitat that merges into the adjoining 2.73-acre Dutch creek wetland will have a strong possibility of success at creating an east to west stream corridor connectivity along this waterway all of which is located in the village of Johnsburg.

The off-site ADID wetland to the south of Wal-Mart site and Firestone is mostly marsh and meadow that provide suitable turtle habitat, but it is largely surrounded by commercial and agricultural development that isolates this wetland located in the town of McHenry. Drainage from these North Gate West wetlands flows northwest around the west side of the Firestone store into Wetland 2's off-site extension, and into Wetland 2, where runoff enters a functional drain tile system. This drain tile system carries the stormwater north across the subject property crossing the northern property line and discharges into Dutch Creek. The planned creation of native vegetated stormwater basins and floodplain wetlands along the west and north sides of the Wal-Mart store will improve the landscape connectivity of the south ADID wetlands through a south to north corridor to the east to west stream corridor of wetlands. However, while the Wal-Mart site plan will provide sustainable connectivity between the east to west and south to north habitat corridors on the subject property, current unobstructed connectivity south of the Wal-Mart site is limited to a narrow swale running west of the Firestone development, and connectivity is otherwise compromised with existing and planned roads and development with attendant high traffic volumes. The long-term suitability of the south ADID wetlands for supporting a viable Blanding's turtle population, absent participation of more landowners in a landscape level conservation plan, remains questionable, and these wetlands may act as a population sink.

The site development plan for the 63.6-acre Wal-Mart property that is currently farmland and contains 2.96 acres of wetlands has been revised several times to lessen wetland impacts and incorporate best management practices (BMPs) to improve water quality by pre-treatment of all stormwater runoff and improve wildlife habitat. The approximate 29.77 acres (14.51 acres north and 15.26 acres west) of native plantings (mosaic of emergent pools, sedge meadows, mesic prairie meadows and meandering berms) on the north and west sides of the development will preserve and enhance a connectivity corridor of suitable habitat for possible Blanding's turtle migration to and from Dutch Creek to Wetland 2 and North Gate West wetlands located south of the Wal-Mart property, as well as potential stopover and foraging areas for Sandhill cranes. Approximately 50% of the site (~31.53-acres) will be green space after development is complete.

6.5 Naturalized Stormwater Management and Water Quality

Stormwater runoff will be treated by a number of best management practices (BMPs) prior to leaving the site in order to minimize adverse impacts to aquatic habitats and wildlife. Stormwater runoff from all of the developed portions of the site (including the store, parking lots, roads and out lot parcels) will be captured by the stormwater system and conveyed to the naturalized stormwater treatment basins located west of the store footprint towards the southern property line. Two bioswales (0.64 acres) planted with native wetland fringe and prairie buffer plants will collect pavement runoff from the northern out lot, adjacent road, and northern portion of the parking lot to provide first flush pretreatment before reaching the stormwater treatment

basins. Additionally, the store will utilize non-asphalt, non-adhesive roof membrane to improve the quality of roof runoff compared to standard roofing materials.

The naturalized stormwater treatment basin(s) include a forebay that will aid in sediment settling. This sedimentation basin will treat and remove the oil and grit collected from the parking lot areas not pretreated by the two bioswales that cover 0.65 acres. The bioswales and sedimentation forebay basin replace the need for a CDS system at this Site. From the forebay, normal level basin waters will be forced by the half-foot raised 50-foot wide wetland shelf, to flow towards the south end of the basin where a swale allowed waters to flow into the main wet bottom detention basin, which will be lined with emergent/fringe wetland vegetation that will further aid in removal of suspended solids. A raised shallow earthen berm planted with native vegetation will guide the detention pond waters westward and then north for further treatment before discharge via a restrictor pipe into the mitigated floodplain and restored farmed Wetland 2 basin. The stormwater treatment basin(s) and slopes cover approximately 8.11 acres. This basin bottom and its surrounding earthen berm slopes will be planted entirely with native prairie and wetland vegetation. This floodplain-farmed Wetland 2 basin measuring approximately 7.15 acres will be connected through a series of box culverts or equivalent span across Running Brook Farm Boulevard to the restored, native-planted floodplain areas along the northern site boundary. These native-planted mesic and wetland areas will provide additional filtration and promote infiltration and ground water recharge. These BMPs will reduce adverse effects on stormwater quality and quantity of stormwater leaving the site. The naturalized stormwater management basins and buffer, and floodplain restoration areas will provide 30.42 acres of natural landscape on the site. These basins will periodically dry up and their shallow bottoms will be exposed.

In order to promote the use of the stormwater treatment basins by the Blanding's turtle, numerous micro topographic mounds and habitat structures will be located within the basins. The standard cyclone fencing surrounding the stormwater treatment basins shall be elevated approximately one foot above the ground in order to allow access for Blanding's turtles and other wildlife species to pass.

In addition, weekly parking lot sweeping and cleanup will be part of Wal-Mart's BMP maintenance plan.

6.6 Road Crossings

The initial site design of two 36-inch diameter RCP culverts approximately 127 feet long is being changed to one RCP box culvert measuring 36" high by 54 ½ " wide beneath Running Brook Farm Boulevard between the floodplain/wetland areas. The culvert will be at a flat grade which should allow turtles to see the planting areas and sunlight on the other side of the culvert.

A partially buried wire mesh fence and/or a retaining wall to be constructed is proposed along and the future western extension of Running Brook Farm Boulevard to prevent adults from getting onto road. Wing walls will be attached to the box culvert to lead turtles into the crossing.

6.7 Curbs

In order to prevent young turtles from entering the parking lot or drives and being trapped by the curbs, Wal-Mart proposes to use a mix of barriers and mountable curbs. Curbs along the drives and parking lots that border naturalized areas shall be installed with a back six inches above grade to function as a vertical barrier to prevent young turtles from entering the developed portion of the site. Curbs are not expected to represent a barrier to adult Blanding's turtles.

Sections of mountable curbs (maximum four inches high at a 3:1 slope) shall be installed on either side of catch basins to provide an exit for any turtles that somehow gain access to the developed portion of the site.

6.8 Interpretive Signage

Interpretive signage shall be placed along the perimeter of the floodplain restoration area, floodplain compensation/wetland restoration area, and stormwater treatment basins to inform the public of the potential presence of Blanding's turtles and Sandhill cranes. The signs shall instruct the public to immediately notify the IDNR Heritage Biologist at 815-675-2386 or contact the MCCD Biologist 815-338-6223 if a Blanding's turtle is sighted.

Turtle crossing signs shall be installed along Running Brook Farm Boulevard west of the roundabout to increase public awareness and reduce road kills.

6.9 Pollutants

It is proposed that the snow removal program incorporated at the site will include only limited use of sodium chloride (salt) for snow melting purposes. The snow removal program will focus on snow plowing as a means of snow removal on the site. In addition, bulk salt storage for site snow removal is not intended for the site.

Because Wal-Mart does not typically use pesticides as part of its standard site maintenance, there is no need for any specific changes to such maintenance protocols to avoid impacts to species or habitat due to use of pesticides.

6.10 Lighting

To minimize the possible effects of outdoor lighting attracting insects and thereby disrupting the food chain, the Wal-Mart will utilize high pressure sodium lights or utilize amber lenses. This type of lighting has an orange glow that falls within the pink to red hues that tend to minimize the attraction of insects, as recommended by the IDNR.

6.11 Management, Monitoring and Reporting #3

The onsite natural areas (Restored Farmed Wetland 1, Restored Farmed Wetland 2, Enhanced Farmed Wetland 5, Enhanced Wetland 2, floodplain compensation and restoration areas, and the woodland corridor) shall be managed and monitored for a period of three years in accordance

with the USACE regional permit program, and for an additional two years, or a total of five years in accordance with the McHenry County Stormwater Ordinance, and the request of the IDNR. The purpose of the management and monitoring will be to measure and assess the effectiveness of the native plantings and stormwater BMPs. An annual monitoring report shall be submitted to the USACE, IDNR and Village of Johnsburg (McHenry County) by the 28th of February of the following year. A copy of this report will be provided to IDNR. **Appendix E** contains a copy of the Maintenance and Monitoring Plan for the subject property and details the description of monitoring, management and reporting requirements.

Post-construction, Wal-Mart will develop a training program, in which employees will be made aware that the target species have been documented in the vicinity. Employees will be trained to report any turtle or Sandhill crane sighting on the site to designated Wal-Mart personnel, who will be properly trained to visually identify the target species. Should either of the target species be identified on the site, the designated personnel will be responsible for reporting identified target species to the IDNR.

If it is determined that the measures taken to minimize Blanding's turtle and Sandhill crane takings are not effective, potential modifications to the conservation plan will be evaluated.

7.0 ADDITIONAL ALTERNATIVES CONSIDERED

The following impact minimization measures were considered, but were not incorporated into the construction plans.

Relocate the proposed development to another site – This proposed site is within the Village of Johnsburg limits and is zoned for business. The current operating Wal-Mart store is located in the adjacent City of McHenry and is undersized. Wal-Mart looked at other store sites in the City of McHenry along busy Route 31 and Route 120, but available lots of sufficient size (50-plus acres) and appropriate zoning were unavailable. This new site is located within Village of Johnsburg limits and has nearby existing potable water, sanitary sewer, electric, telephone, cable and gas utilities. It is actively being marketed by the owner and Village for business development. State Highway Route 31 provides adequate access to site and this commercial business corridor is almost fully developed south of Dutch Creek and the store site on both sides of the roadway. This site is a good location for the Wal-Mart store.

Redesign the site to avoid separating wetlands from adjacent uplands – The pre-existing intersection alignment of Running Brook Farm Boulevard and Route 31, the separate 5-acre LFI parcel at the eastern property boundary, and the presence of 100-year floodplain and floodway along the entire northern portion of the parcel dictated the location of the proposed current layout. To the greatest extent practicable, the store, parking, and drives were shifted toward the southeastern portion of the property to accommodate a potential wildlife and suitable habitat travel corridor constructed across the western and northern portions onsite connecting to natural wetland areas off-site to the north (Dutch Creek riparian community) and to the south (North Gate West wetland complex. However, it is not possible to maintain an uninterrupted corridor from the southern to the northern property boundary without completely losing access to the land west of the development. Under the current proposed development, the use of a roundabout at

the western end of Running Brook Farm Boulevard will reduce the amount of traffic across site, and therefore reduce potential vehicular mortality for wildlife. The proposed culverts and road design have been proposed specifically to promote safe movement of Blanding's turtles after the future extension of Running Brook Farm Boulevard.

Providing a bridge span in lieu of a box culvert – Wal-Mart considered providing a bridge span in lieu of a box culvert for the future proposed Running Brook Farm Boulevard crossing of the turtle corridor and floodplain basin's connection. However, the cost of the bridge would be considerably more than the proposed culvert. Whether done by Wal-Mart or another business development, the economics of the site development costs have to provide an acceptable rate of return for the proposed development. The additional cost of the bridge and fill would not be economically feasible for this development, especially given the minimal benefit to be gained over the proposed box culvert design that specifically addresses Blanding's turtle concerns.

8.0 EFFECTS DETERMINATIONS

Because of the findings of the habitat assessments and the measures proposed to minimize and mitigate for the potential taking (disturbance/harassment) of Blanding's turtles and Sandhill cranes, Wal-Mart does not anticipate that the proposed activity would diminish the likelihood of the survival of either species within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois.

9.0 SCHEDULE

TARGET - **FALL 2009 Start**

- Out to bid - September 21, 2009
- Construction award 3 – 4 weeks later - October 14, 2009
- Contractor mobilization, set up on the site erosion controls, and certify erosion protection is in place (2-3 weeks) - October 21, 2009
- Begin building plan and site grading – 6-8 weeks (weather dependent) - November 1, 2009
- Begin building construction, install on-site utilities - December 1, 2009
- Complete on-site improvements July 28, 2010
- Construct off-site improvements – (concurrent with on-site work) – December 1, 2009 to July 28, 2010

The construction period is generally about nine months from award to possession.

10.0 OTHER APPROVALS

Wal-Mart has submitted a Regional Permit 404/401 Joint Application to the USACE (LRC # 2009-017) and permit application copies were provided to the Illinois Environmental Protection Agency (IEPA), IDNR and USFWS. A Stormwater Watershed Development Permit application to the Village of Johnsburg and McHenry County for this development is being prepared for submittal within the next few weeks.

11.0 FINANCIAL ASSURANCE

Financial assurance for all mitigation activities and programs proposed herein will be provided by the full faith and credit of Wal-Mart Stores, Inc. Wal-Mart Stores, Inc. is public company based in the United States and is currently the world's largest. Wal-Mart operates over 7,800 Wal-Mart stores and Sam's Club locations in 16 markets worldwide employ more than 2 million associates. Wal-Mart's common stock is listed on the New York Stock Exchange under the symbol WMT. Net sales for the first quarter of fiscal year 2009 were approximately $108 billion. Additional financial information concerning Wal-Mart can be accessed at www.walmartstores.com.

12.0 IMPLEMENTING AGREEMENT

There appears to be no need for an implementing agreement at this time. Names and signatures of participating parties and the obligations and responsibilities of parties are attached.

13.0 REFERENCES

Armbruster, M.J. 1987. Habitat suitability index models: greater Sandhill crane. U.S. Fish and Wildlife Service. Biological Reports 82(10.140) 26 pp.

Beringia Natural History Notebook Series. 1992. National Audubon Society. http://www.nps.blea/html/sandhill.htm.

Congdon, J., D.W. Tinkle, G.L. Breitenbach and R.C. van Loben Soils. 1983. Nesting ecology and hatchling success in the turtles *Emydoidea blandingii*. Herpetological 39(4):417-429.

Ernst, C.H, J.E. Lovich and R.W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Institution.

Harding, J.H. 1997. Amphibians and Reptiles of the Great Lakes Region. U. of Mich. Press, Ann Arbor, MI. 378 pp.

Harding, J.H. and J.A. Holman. 1990. Michigan turtles and lizards: a field guide and pocket reference. Michigan State Cooperative Extension Service, East Lansing, MI. 94 pp.

Hoffman, R.H. and G.Y. Belyea. 2001. Sandhill Crane. http://www.michiganaudobon.org/bakersanctuary/crane.htm

Illinois Endangered Species Board. 2008. Proposed additions, deletions, and changes to the Illinois list of threatened and endangered animals. Illinois Endangered Species Board 140th Meeting Chicago, IL. http://www.dnr.state.il.us/ESPB/09/2009_PROPOSED_CHANGES_animals_for_hearing.pdf

February 20, 2009. Additions, Deletions, and Changes to the Illinois List of Endangered and Threatened Species Approved as Final by the Illinois Endangered Species Protection Board at the 141st meeting, February 20, 2009. http://www.dnr.state.il.us/ESPB/2009%20-%20Summary%20of%20ESPB%20Proposed%20Changes%20approved%20as%20final%20at%20141st.pdf

Illinois Natural History Survey. 2006. Emydoidea blandingii – Blanding's turtle. http://www.inhs.uiuc.edu/cbd/herpdist/species/em_blandgin.htm

Lee, Y. 1999. Special animal abstract for *Emys blandingii* (Blandingís turtle). Michigan Natural Features Inventory, Lansing, MI. 3 pp.

Littlefield, C. D., and G. L. Ivey. 2002. Washington State Recovery Plan for the Sandhill Crane. Washington Department of Fish and Wildlife, Olympia, Washington. 71 pages.

Minnesota Department of Natural Resources Division of Ecological Resources. Environmental Review Fact Sheet Series, Blanding's Turtle. http://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/factsheet.pdf. 20 April 2009.

Northern Prairie Wildlife Research Center. 2006. The cranes status survey and conservation action plan Sandhill Crane (*Grus canadensis*). http://www.npwrc.usgs.gov/resource/birds/cranes/gruscana.htm

Nyboer, R.L., J.R. Herkert, and J.E. Ebinger, editors. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 – Animals. Illinois Endangered Species Protection Board, Springfield, Illinois.

Ohio Department of Natural Resources. 2009. Wetland Species Overview. http://www.ohiodnr.com/Home/wild_resourcessubhomepage/ResearchandSurveys/WildlifePopulationStatusLandingPage/WetlandSpeciesOverview/tabid/19368/Default.aspx. Accessed 19 April 2009.

Piepgras, S., T. Sajwaj, M. Hamernick and J.W. Lang. 1998. Blanding's turtle (*Emydoidea blandingii*) in the Brainerd/Baxter region: population status, distribution and management recommendations. Final Report to the Nongame Wildlife Office, Minnestoa DNR, Brainerd, MN. 48 pp.

Sibley, D.A. 2007. The Sibley Field Guide to Birds of Eastern North America. Knopf, New York.

Su, L. 2003. Habitat selection by sandhill cranes, *Grus canadensis tabida*, at multiple geographic scales in Wisconsin (PhD Dissertation). University of Wisonsin, Madison. Madison, WI. 141 p.

Tacha, T.C., S.A. Nesbitt, and P.A. Vohs. 1992. Sandhill Crane (*Grus canadensis*). *In* The Birds of North America, No. 31 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, DC: The American Ornithologists' Union.

Van Dam, B. 1993. Element stewardship abstract for *Emydoidea blandingii* (Holbrook) Blanding's turtle. Michigan Natural Features Inventory, Lansing, MI. 25 pp.

Ward, MP; Semel, B; Herkert, JR. 2008. The Future of Wetland Birds in Northeastern Illinois. Illinois Steward 17(1):23-25.

Wisconsin Department of Natural Resources. 2005. Blanding's turtle (*Emydoidea blandingii*). http://www.dnr.state.wi.us/org/land/er/factsheets/herps/Bldtur.htm