FINAL ALTERNATIVE URBAN AREAWIDE REVIEW UPDATE

RAMSEY COR

FOR THE
CITY OF RAMSEY, MINNESOTA

Original AUAR: June 2003
Update 1: May 2013 (revised July 2013)
Update 2: September 2018

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I. INTRODUCTION AND PURPOSE

The COR (formerly Ramsey Town Center) study area is a 369.5-acre project in the City of Ramsey. The area is bounded by the Burlington Northern Santa Fe (BNSF) railroad on the south, Armstrong Boulevard on the west and Ramsey Boulevard (Highway 56) on the east (see **Figure 1, Appendix A**).

The City of Ramsey adopted the Ramsey Town Center Alternative Urban Areawide Review and Mitigation Plan on June 24, 2003, (original AUAR, Resolution 2002-104) and completed an update to the AUAR in 2013. This AUAR update incorporates this document by reference. Pursuant to Minnesota Rules 4410.3610 Subp. 7, for the AUAR to remain valid as the environmental review document for the area, the document needs to be updated every five years until all development in the study area has received final approval. Since undeveloped areas still remain in the study area and the AUAR will expire in 2018, the purpose of this document is to update the AUAR pursuant to Minnesota Rules.

The preparation of this AUAR update report has been completed according to guidance prepared by the Environmental Quality Board (EQB) and is based on Minnesota Rules 4410.3610, Subp. 4. The mitigation items in the AUAR update follow the standard Environmental Assessment Worksheet (EAW) environmental review topics. When an environmental review topic item is not applicable to this AUAR, it is so stated. Responses to the environmental review topics are only provided when there has been a change since the 2003 AUAR or 2013 AUAR Update. Whenever "no changes" is indicated, refer to the original document as listed above to review the original response.

The 2003 AUAR, 2013 Update, and 2018 Update included an analysis of existing conditions and the preferred development scenario. The AUAR also included the progression of the conceptual designs to reach the preferred development concept. The 2018 AUAR Update is available for review on the City's website at www.cityoframsey.com/planning-division. This report is intended to serve as an update of the AUAR and includes a review of the areas that have and have not developed, an update to the environmental analysis as needed, and a review of the mitigation measures.

The City of Ramsey adopted the 2001 Comprehensive Plan, and subsequently updated the Comprehensive Plan in September 2010 (2030 Comprehensive Plan) and is currently in the process of updating the Plan again (2040 Comprehensive Plan). The Future Land Use element of the Comprehensive Plan shows the AUAR area as primarily "Mixed Use" with smaller areas of "Business Park" and "Commercial". The preferred development scenario is fully compatible with the 2040 Comprehensive Plan.

II. DEVELOPMENT WITHIN THE STUDY AREA

Figure 2 (Appendix A) shows the location of the completed and approved developments in the study area. The developments are listed in **Table 1**. Of the 369.5-acre COR AUAR Area, 144.7 acres have been developed or are approved for development.

Table 1. Summary of Development within Study Area

Development	Activity	Status	Area (ac)	AUAR Update (Year)
Affinity at the COR	174-unit senior housing	Approved	16.61	2018
Casey's Addition	Gas Station	Complete	1.623	2018
COR Parkview Addition	121-unit apartment building	Complete	9.01	2018
COR Stone Brook Academy	Child Care	Complete	4.51	2018
COR Three	Residential	Complete	8.56	2018
Greenway Terrace	54-unit apartment building	Under Construction	3.38	2018
Northgate Addition	Public/Quasi-Public	Complete	1.36	2018
Station 2nd Addition Station	77-unit townshomes	Under Construction	4.86	2018
Sunwood Village	47-unit apartment building	Complete	1.85	2018
Vistas at North Commons	12-lot single family residential development	Approved	3	2018
The Ramsey Municipal Center and Parking Ramp	Public/Quasi-Public	Complete	5.31	2013
The Veterans Administration Clinic	Medical Facility	Complete	2.34	2013
Allina Clinic	Medical Facility	Complete	3	2013
Ramsey Town Center 2nd Addition	103 Units	Complete	7.3	2013
Ramsey Town Center 3rd Addition (Northstar Marketplace Retail)	Retail	Complete	8.92	2013
Ramsey Town Center 7th Addition - Symphony at Town Center	152 Units	Under Construction	9.39	2013
Ramsey Town Center 8th Addition	23 Units	Complete	3.9	2013
Ramsey Town Center 9th Addition	90 Units	Under Construction	7.78	2013
Ramsey Town Center 10th Addition	44 Units	Complete	6.68	2013

PACT Charter School	Public/Quasi-Public	Complete	5.34	2013
NAU Country	Commercial	Complete	1.23	2013
COR ONE (Residence at the COR)	326 Units	Complete	3.03	2013
COR TWO (Sunwood Retail)	Retail	Complete	4.09	2013
COR THREE (North Commons)	17 Units	Complete	4.39	2013
Fountains of Ramsey Convention Center/Banquet Facility	Commercial	Complete	3.14	2013
Midwest Medical Examiner's Office	Medical Facility	Complete	1.22	2013
Draw Park	Public Recreation/Park	Complete	7.79	2013
Rhinestone Commons Park	Public Recreation/Park	Complete	6.31	2013

III. AREAS REMAINING TO BE DEVELOPED

Approximately 224.8 acres remain for development. These areas are also shown on **Figure 2 (Appendix A)**.

Development within the AUAR area is dependent on market forces, but the remaining areas could develop within the next 5-15 years.

IV. UPDATE TO THE ENVIRONMENTAL REVIEW

A. Traffic and Transportation System

Several street improvements have occurred within the AUAR area. These improvements were noted in the AUAR as part of the mitigation measures and are noted in this AUAR update under **Item 21**.

B. Sewer and Water Systems

The City updated the Comprehensive Sewer and Water Plans in 2017. The sewer update did not list any flow projects and referenced the 2012 study. The City reviewed the sewer and water systems in relation to the existing conditions, past development and the AUAR. The City's sewer and water systems can accommodate the development proposed within the AUAR area.

C. Potential Environmental Hazards

Item 9 in the original AUAR included a review of past land use in relation to potential environmental hazards. Item 20 in the original AUAR included a description of the types, amounts, and composition of solid/hazardous wastes and storage tanks. As part of this AUAR Update, the City reviewed current Minnesota (MPCA) Pollution Control Agency and Minnesota Department of Agriculture (MDA) *What's in My Neighborhood* databases

for records of potential contamination. The following table summarizes the listings identified within undeveloped parcels of the study area.

Table 2. Summary of MPCA/MDA Listings

Site ID	Name	Address	Activity
5	Senior Housing Parcel	County Road 116	Brownfields, Voluntary Investigation and Cleanup

A map showing the location of the identified site is included as **Figure 3** in **Appendix A.** The listings associated with Site 5 indicate the presence, or likely presence, of soil and/or groundwater contamination. Mitigation recommendations are outlined in the Mitigation Plan.

In addition to the review of the MPCA database, the city completed Phase I Environmental Site Assessments (ESA) on Parcels 28-32-25-41-0002 (Site 50), 28-32-25-23-0011 and 28-32-25-23-0013 (Site 42). In addition to Phase I ESAs, a Phase II ESA was also completed on parcel 28-32-25-23-0010 (Site 47). Investigations at Sites 42 and 50 did not indicate the presence of environmental hazards. Investigations at Site 47 revealed the presence of environmental hazards above regulatory thresholds in the soil and/or soil gas. This site is shown on **Figure 3** in **Appendix A**. Mitigation recommendations for this site are outlined in the Mitigation Plan.

D. Stormwater Management

Development will be required to meet the stormwater management guidelines of the Lower Rum River Watershed Management Organization (LRRWMO). The LRRWMO adopted new rules in the "3rd Generation Watershed Management Plan" on January 19, 2012. A new stormwater management plan was approved by the City of Ramsey in 2015. The 2015 plan addresses the new LRRWMO requirements and reflects the new COR development plan. The LRRWMO issued a permit for The COR (formerly Ramsey Town Center), which is still active. The 3rd Generation Plan added a requirement for infiltration for new development. This requirement is being implemented by the City of Ramsey. LRRWMO updated their Stormwater Standards in March 2018, primarily focusing on the new infiltration requirement, allowable design storm events (MSE Atlas 14) and modified water quality standards. The City is considering implementation of regional infiltration in conjunction with existing and planned regional facilities, including proposed Lake Ramsey (see **Figure 2, Appendix A**).

E. Ecologically Sensitive Areas

The AUAR included review and analysis of the ecologically sensitive areas within the study area. For this update, the DNR Natural Heritage Database information was updated and is included in **Appendix B.** This update contains additional known occurrences of rare species or natural communities within a one-mile radius of the study area as compared to the data from the original AUAR. The mitigation plan is adequate to

address these sensitive ecological areas and the remaining AUAR analysis remains valid for this update.

IV. MITIGATION SUMMARY AND UPDATE

The mitigation plan from the original AUAR and AUAR Update (2013) has been reviewed and updated based on changes since 2013. The mitigation plan is included in **Appendix C.**

V. AUAR UPDATE REVIEW

This AUAR Update has been reviewed pursuant to Minnesota Rules 4410.3610, Subp. 7. The COR (formerly Ramsey Town Center) AUAR will remain valid for an additional five years beyond the City Council adoption date.

APPENDIX A: Figures

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City of RAMSEY

Figure 1 - AUAR Location

COR AUAR Update
City of Ramsey

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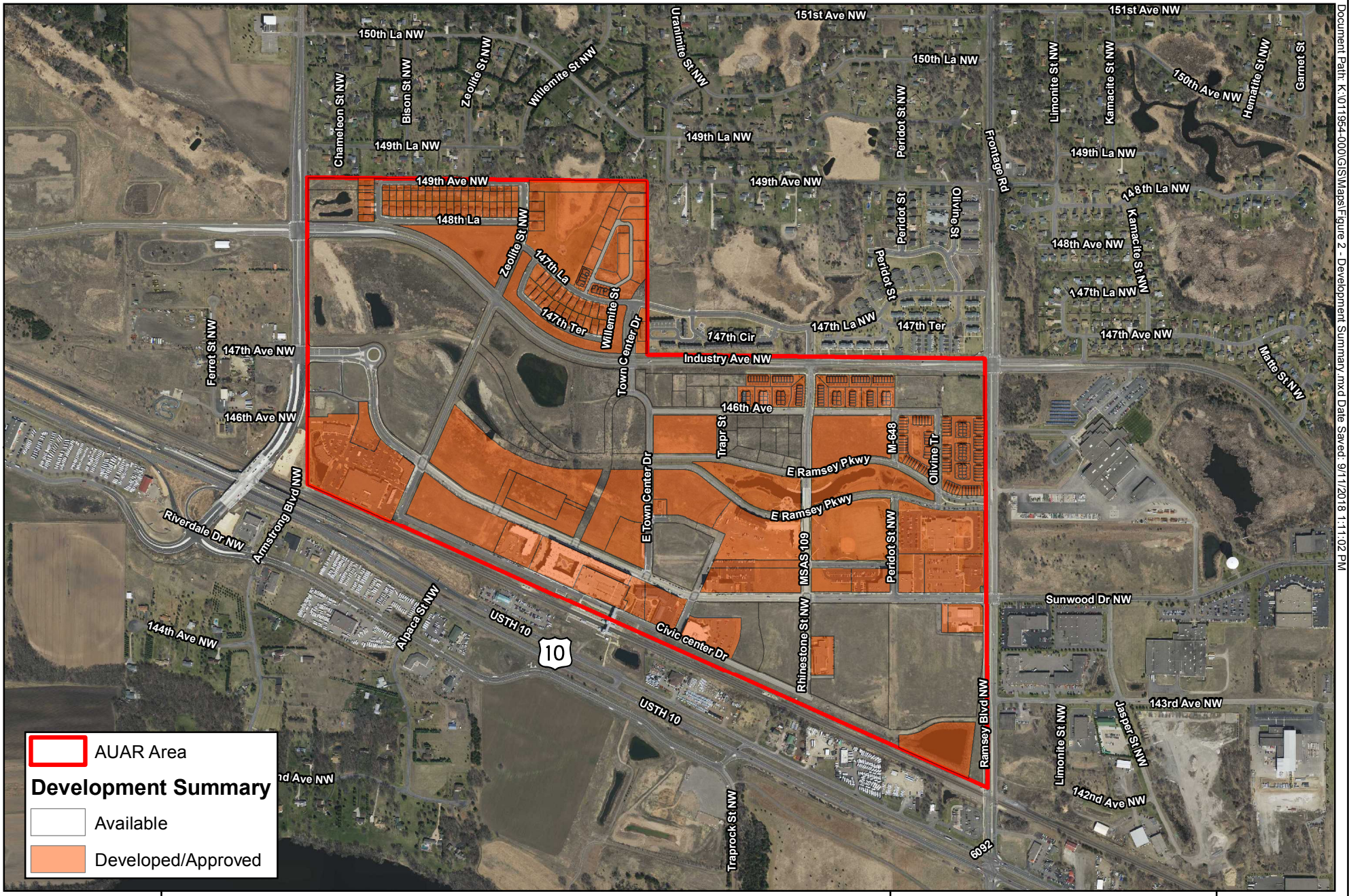
1 inch = 1,253 feet

WSB



City of RAMSEY

Figure 2 - Development Summary

COR AUAR Update
City of Ramsey

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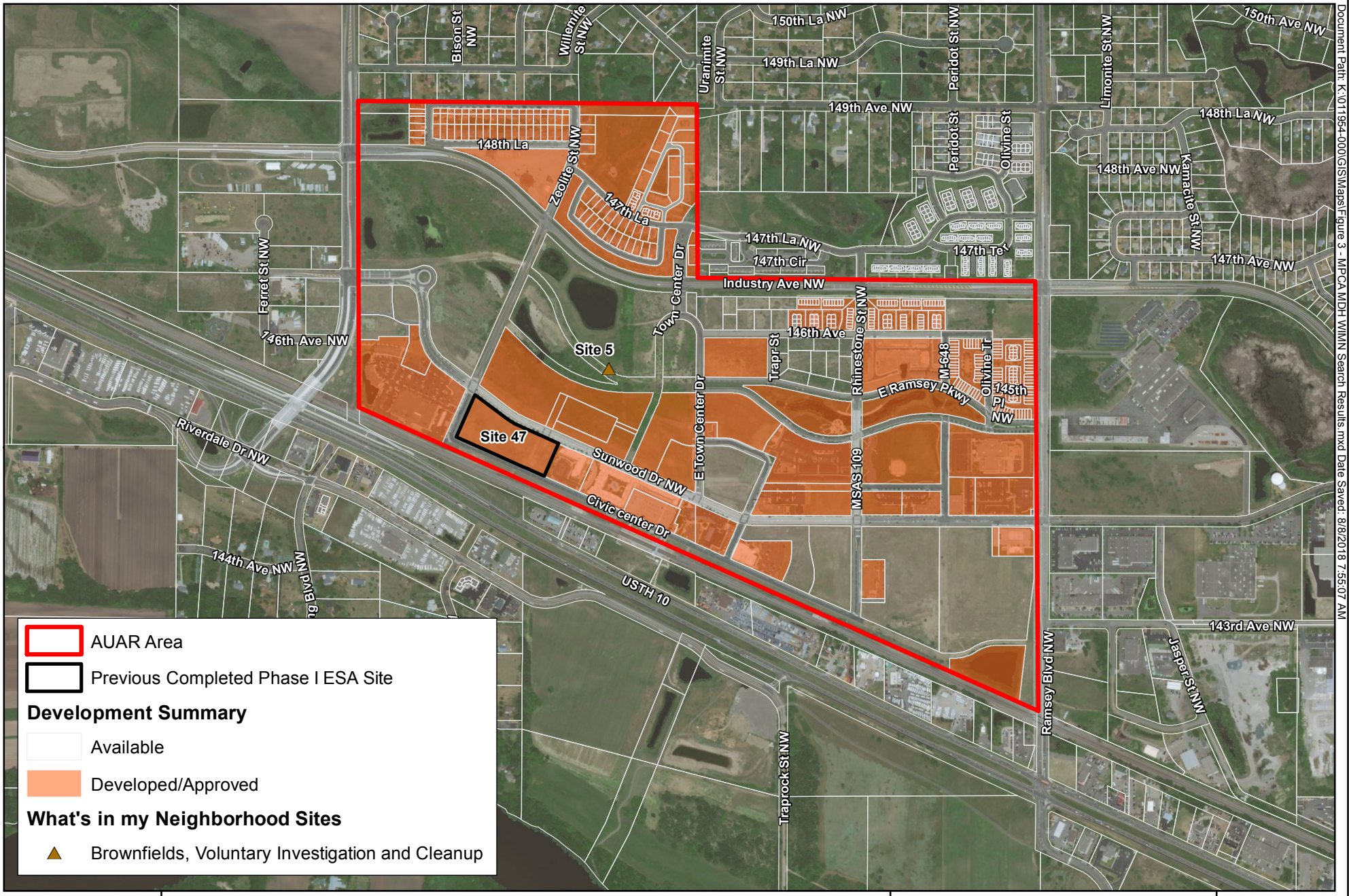
1 inch = 1,000 feet

WSB



Document Path: K:\01954-000\GIS\Maps\Figure 3 - MPCA MDH WIMN Search Results.mxd Date Saved: 8/8/2018 7:55:07 AM

City of RAMSEY

Figure 3 - MPCA/MDH WIMN Search Results

COR AUAR Update
City of Ramsey

N

0 1,000 Feet

1 inch = 1,000 feet

WSB

APPENDIX B: Agency Correspondence

DNR

Alison Harwood

From: Bump, Samantha (DNR) <samantha.bump@state.mn.us>
Sent: Thursday, September 06, 2018 3:54 PM
To: Alison Harwood
Subject: RE: NHIS Review Request for Ramsey COR AUAR Update
Attachments: 2012.06.29 - Std Eb111.pdf; Ebfactsheet2008.pdf; Ebflyer 2012.pdf; DNR Best Practices Erosion Control and Mesh Netting.pdf

Hi Alison,

I have reviewed the NHIS regarding the above project. There are no new records in the vicinity of the project. As such, the Natural Heritage letter dated June 29, 2012 is valid until September 6, 2019.

Thank you for consulting us on this matter. If you have any further questions, please feel free to contact me.

Have a great day,

Samantha Bump
NHIS Review Specialist | Ecological & Water Resources

Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, MN 55155
Phone: 651-259-5091
Email: samantha.bump@state.mn.us
mndnr.gov

DEPARTMENT OF NATURAL RESOURCES

From: Alison Harwood <aharwood@wsbeng.com>
Sent: Wednesday, May 30, 2018 11:38 AM
To: MN_NHIS, Review (DNR) <Review.NHIS@state.mn.us>
Subject: NHIS Review Request for Ramsey COR AUAR Update

Good morning,

Attached please find the NHIS review request form for the 2018 AUAR Update for the Ramsey COR.

If you need additional information to complete your review, please contact me.

Minnesota Department of Natural Resources
Division of Ecological and Water Resources, Box 25
500 Lafayette Road
St. Paul, Minnesota 55155-4025
Phone: (651) 259-5109 E-mail: lisa.joyal@state.mn.us

June 29, 2012 **Correspondence # ERDB 20120400**

Ms. Kendra Lindahl
Landform
105 S 5th Ave
Minneapolis, MN 55401

RE: Natural Heritage Review of the proposed The COR AUAR Update;
T32N R25W Section 18; Anoka County

Dear Ms. Lindahl,

As requested, the Minnesota Natural Heritage Information System (NHIS) has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, the following **rare species *may* be adversely affected** by the proposed project:

- Blanding's turtles (*Emydoidea blandingii)*, a state-listed threatened species, have been reported from the vicinity of the proposed project and may be encountered on site. If Blanding's turtles are found on the site, please remember that state law and rules prohibit the destruction of threatened or endangered species, except under certain prescribed conditions. If turtles are in imminent danger they should be moved by hand out of harm's way, otherwise they should be left undisturbed.

  For your information, I have attached a Blanding's turtle fact sheet that describes the habitat use and life history of this species. The fact sheet also provides two lists of recommendations for avoiding and minimizing impacts to this rare turtle. **Please refer to the first list of recommendations for your project.** If greater protection for turtles is desired, the second list of additional recommendations can also be implemented. In addition, if erosion control blankets will be used, we recommend that they be limited to 'bio-netting' or 'natural-netting' types as the plastic mesh netting can be dangerous to reptiles (please see enclosed fact sheet). The attached flyer should be given to all contractors working in the area.

The Natural Heritage Information System, a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), federally-listed as threatened and state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of

Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

Lisa Joyal
Natural Heritage Review Coordinator

enc. Blanding's Turtle Fact Sheet and Flyer
Erosion Control and Mesh Netting

Environmental Review Fact Sheet Series

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle

(*Emydoidea blandingii*)

Minnesota Status:	Threatened	State Rank[1]:	S2
Federal Status:	none	Global Rank[1]:	G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (e.g., cattails, water lilies) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding's turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, raccoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	**List 2. *Additional* recommendations for areas known to be of state-wide importance to Blanding's turtles.**
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is ***very important*** that the fencing be **removed <u>before August 1st</u>** so the young turtles can escape from the nest when they hatch!

REFERENCES

[1]Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). http://www.natureserve.org/ranking.htm (15 April 2001).

Coffin, B., and L. Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

REFERENCES (cont.)

Moriarty, J. J., and M. Linck. 1994. Suggested guidelines for projects occurring in Blanding's turtle habitat. Unpublished report to the Minnesota DNR. 8 pp.

Oldfield, B., and J. J. Moriarty. 1994. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press, Minneapolis, 237 pp.

Sajwaj, T. D., and J. W. Lang. 2000. Thermal ecology of Blanding's turtle in central Minnesota. Chelonian Conservation and Biology 3(4):626-636.

CAUTION

BLANDING'S TURTLES

MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are state-listed as Threatened and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-308-2641); Grand Rapids (218-327-4518); New Ulm (507-359-6033); Rochester (507-280-5070); or St. Paul (651-259-5764).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

BLANDING'S TURTLES DO NOT MAKE GOOD PETS
IT IS ILLEGAL TO KEEP THIS THREATENED SPECIES IN CAPTIVITY

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Blanding's Turtle Fact Sheet for full recommendations)

- This flyer should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles that are in imminent danger should be moved, by hand, out of harms way. Turtles that are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest and do not allow pets near the nest.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

Compiled by the Minnesota Department of Natural Resources Division of Ecological Resources, Updated March 2008
Endangered Species Environmental Review Coordinator, 500 Lafayette Rd., Box 25, St. Paul, MN 55155 / 651-259-5109

Looming Issue with Plastic Mesh/Netting in Erosion Control Products

Plastic mesh netting is a common material in erosion control products. It is utilized to hold loose fibrous materials in place (EG straw) until vegetation is established. These products have been used extensively and are successful for reducing soil erosion, benefitting both soil health and water quality. Unfortunately there is a negative side of this component: It is increasingly being documented that it poses dangers to reptiles, amphibians, and mowing machinery.

Potential Problems:

- Plastic netting lays on the surface long after other components have decomposed.
- Plastic mesh netting can result in entanglement and death of a variety of reptiles (snakes, frogs, toads, and turtles). Ducklings have also been documented entangled in the netting.
- Road maintenance machinery can snag the plastic mesh and pull up long lengths into machinery, thus binding up machinery and causing damage and/or loss of time cleaning it out.

Suggested Alternatives:

- Do not use in known locations of reptiles or amphibians that are listed as Threatened or Endangered species.
- Limit use where reptiles are likely (near wetlands, lakes, watercourses, or rock outcrops).
- Use rapidly degradable material in all components of erosion control blanket, netting or biologs (fiber rolls) that are to be left on site as part of final stabilization.
- Use types with smaller mesh size (smaller that ½") or use types with non-welded netting.

Areas near wetlands, lakes, watercourses are rock outcrops are likely habitat for reptiles and amphibians and may not be suitable for plastic mesh erosion control materials.

Snakes get caught in the plastic mesh

(http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html)

Preventing Entanglement by Erosion Control Blanket

Plastic mesh netting is a common component in erosion control blanket. It is utilized to hold loose fibrous materials in place (EG straw) until vegetation is established. Erosion control blanket is being utilized extensively and is effective for reducing soil erosion, benefitting both soil health and water quality. Unfortunately there is a negative aspect of the plastic mesh component: It is increasingly being documented that its interaction with reptiles and amphibians can be fatal (Barton and Kinkead, 2005; Kapfer and Paloski, 2011). Mowing machinery is also susceptible to damage due to the long lasting plastic mesh.

Potential Problems:

- Plastic netting remains a hazard long after other components have decomposed.
- Plastic mesh netting can result in entanglement and death of a variety of small animals. The most vulnerable group of animals are the reptiles and amphibians (snakes, frogs, toads, salamanders, turtles). Ducklings, small mammals, and fish have also been observed entangled in the netting.
- Road maintenance machinery can snag the plastic mesh and pull up long lengths into machinery, thus binding up machinery and causing damage and/or loss of time cleaning it out.

Suggested Alternatives:

- Do not use in known locations of reptiles or amphibians that are listed as Threatened or Endangered species.
- Limit use of blanket containing welded plastic mesh to areas away from where reptiles or amphibians are likely (near wetlands, lakes, watercourses, or rock outcrops) or habitat transition zones (prairie – woodland edges, rocky outcrop – woodland edges, steep rocky slopes, etc.)
- Select products with biodegradable netting (preferably made from natural fibers, though varieties of biodegradable polyesters also exist on the market). Biodegradable products will degrade under a variety of moisture and light conditions.
- DO NOT use products that require UV-light to degrade (also called “photodegradable”) as they do not degrade properly when shaded by vegetation.

Solution: Most categories of erosion control blanket and sediment control logs are available in natural net options.

- Specify ‘Natural Netting’ for rolled erosion control products, per MnDOT Spec 3885. See Table 3885-1.
- Specify ‘Natural Netting’ for sediment control logs, per MnDOT Spec 3897

The plastic mesh component of erosion control blanket becomes a net for entrapment.

Literature Referenced

Barton, C. and K. Kinkead. 2005. Do erosion control and snakes mesh? Soil and Water Conservation Society 60:33A-35A.
Kapfer, J.M., and R.A. Paloski. 2011. On the threat to snakes of mesh deployed for erosion control and wildlife exclusion. Herpetological Conservation and Biology 6:1-9.

Environmental Review Fact Sheet Series

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle

(*Emydoidea blandingii*)

Minnesota Status:	Threatened	State Rank[1]:	S2
Federal Status:	none	Global Rank[1]:	G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (e.g., cattails, water lilies) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding's turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, raccoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	**List 2. *Additional* recommendations for areas known to be of state-wide importance to Blanding's turtles.**
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is ***very important*** that the fencing be **removed before August 1st** so the young turtles can escape from the nest when they hatch!

REFERENCES

[1]Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). http://www.natureserve.org/ranking.htm (15 April 2001).

Coffin, B., and L. Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

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Moriarty, J. J., and M. Linck. 1994. Suggested guidelines for projects occurring in Blanding's turtle habitat. Unpublished report to the Minnesota DNR. 8 pp.

Oldfield, B., and J. J. Moriarty. 1994. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press, Minneapolis, 237 pp.

Sajwaj, T. D., and J. W. Lang. 2000. Thermal ecology of Blanding's turtle in central Minnesota. Chelonian Conservation and Biology 3(4):626-636.

CAUTION

BLANDING'S TURTLES

MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are state-listed as Threatened and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-308-2641); Grand Rapids (218-327-4518); New Ulm (507-359-6033); Rochester (507-206-2820); or St. Paul (651-259-5772).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

BLANDING'S TURTLES DO NOT MAKE GOOD PETS
IT IS ILLEGAL TO KEEP THIS THREATENED SPECIES IN CAPTIVITY

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Blanding's Turtle Fact Sheet for full recommendations)

- This flyer should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles that are in imminent danger should be moved, by hand, out of harm's way. Turtles that are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest and do not allow pets near the nest.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

Compiled by the Minnesota Department of Natural Resources Division of Ecological and Water Resources, Updated August 2012
Endangered Species Review Coordinator, 500 Lafayette Rd., Box 25, St. Paul, MN 55155 / 651-259-5109

APPENDIX C: Mitigation Plan

MITIGATION PLAN

The AUAR Mitigation Plan is outlined below. If mitigation items have been revised or updated, they are noted as such below. Red text indicates new items that were not included the original AUAR or previous update.

ITEM 8. PERMITS AND APPROVALS REQUIRED

As projects are proposed, the project proposer will be required to obtain permits and approvals. Projects proposed since the original AUAR have obtained proper approvals. Additional permits that may not be listed here may also be required.

Unit of Government	Type of Application	Status
Federal		
Army Corps of Engineers	Section 404 Permit	Determined not to be "waters of the United States"
State		
Minnesota Environmental Quality Board	Environmental Assessment (AUAR)	Completed 2003 Updated 2013 Updated 2018
Minnesota Board of Soil and Water Resources	Erosion and Sediment Control Plan Approval	To be Applied for
Minnesota Pollution Control Agency	Sanitary sewer connection and wastewater routing	To be Applied for
	NPDES Phase II construction and MS4 (4)	MS4 Permit application submitted 3/10/03; construction permits submitted as needed
State Historic Preservation Office	Historic and archeological site preservation	No significant site found

Unit of Government	Type of Application	Status
Minnesota Department of Natural Resources	Water system infrastructure (wells, water mains, storage)	To be Applied for
Minnesota Department of Transportation	State Highway Access and consistency with standards; applies also to work in the Right of Way	Pre-permit review underway
Minnesota Department of Health	Watermain Extension Approval	To be Applied for
	Sanitary Sewer Extension Permit Approval	To be Applied for
	Well Location and Construction Approval	To be Applied for
Regional		
Lower Rum River WMO	Grading and Erosion Control	To be Applied for
	Storm sewer	To be Applied for
	Wetland alteration (WCA)	To be Applied for
Metropolitan Council	Sanitary Sewer Service Connection Approval	To be Applied for
County		
Anoka County	County Roadway Access Permits, consistency with County Standards	To be Applied for
Local		
City of Ramsey	Site Plan Approval	To be Applied for
	Grading and Erosion Control (1)	To be Applied for*
	Preliminary and final plat approval	To be Applied for
	Obstruction Permit (2)	
	Excavation Permit (3)	

Unit of Government	Type of Application	Status
	Sewer and water connection	To be Applied for
	Building and occupancy permits (multiple)	To be Applied for
	Tree preservation	To be Applied for
Other		
Burlington Northern Santa Fe Railroad	Access Permit (6)	

ITEM 9. LAND USE

Item No.	Mitigation Description	2003 Update	2018 Update
9.1	Assuring the compatibility of development within Ramsey as growth occurs is the primary goal of the comprehensive planning process. Item 27 contains discussion of plan compatibility for a number of other planning documents that cover land in and adjacent to the site. Continued planning efforts will assure that non-compatible uses do not occur as the site develops.	The City's 2030 Comprehensive Plan update was adopted in 2010 after Metropolitan Council review. The City's 2012 Comprehensive Plan Amendment (The COR) was approved by the Metropolitan Council on December 12, 2012. The City will continue to update plans and ordinances as needed to implement the City's vision and goals in compliance with the AUAR.	The City's 2040 Comprehensive Plan has been drafted. Review by Metropolitan Council is expected in December 2018. Adoption is anticipated in early 2019. The City will continue to update plans and ordinances as needed to implement the City's vision and goals in compliance with the AUAR.

ITEM 11. FISH, WILDLIFE, ECOLOGICALLY SENSITIVE RESOURCES

Item No.	Mitigation Description	2013 Update	2018 Update
11.1	Natural Communities: Item 12 of this report addresses wetland mitigation fully. Mitigation for loss of forest/woodland can be accomplished through additional tree planting within some areas of the site listed in Table 10.1 as containing grassland communities. Additional forest/woodland planting can be incorporated into planting plans for the infiltration/wetland system extending south from the COR site to the Mississippi River. The edges of the wetlands and infiltration areas could be established as an oak savanna/woodland natural community.	This mitigation measure is ongoing	No change.
11.2	Wildlife Habitat: Several strategies are proposed to mitigate impacts to wildlife. These include establishing a greenway corridor through the site, wetland restoration and creation and to the extent possible, all culverts and road crossings will be designed to enable upstream or downstream passage of wildlife as they move through the greenway.	This activity has occurred--the greenway corridor has been developed as The Draw park and wetland restoration/creation has taken place. The City will continue to work to implement these measures.	No change.
11.3	Strategies outlined for Wildlife Mitigation generally apply to Blanding's turtles.	The City will continue to work to implement these measures.	No change.

ITEM 12. WATER RESOURCES: WETLANDS

Item No.	Mitigation Description	2013 Update	2018 Update
12.1	Wetland Sequencing - Minnesota Rules 8420, also known as the Wetland Conservation Act (WCA), requires specific steps (sequencing) be taken when evaluating mitigation for unavoidable wetland impacts.	This activity has occurred and will continue to occur. The wetland mitigation plan has been modified from the original AUAR concept but has been permitted in compliance with WCA and this AUAR update reflects those changes.	No change.
12.2	Stormwater Outfall to the Mississippi River: • *Reduce Frequency of Stormwater Discharge, Lower Magnitude of Peak Flow Rates*: The project incorporates a variety of strategies to lower increases in stormwater rate and volume. While all stormwater conveyance features are designed to accommodate the 100-year runoff event without taking infiltration into consideration, on-site retention and infiltration can be incorporated at multiple scales into the development during the detailed design phase for smaller storm retention. Peak flow rates for the 100-year, 24-hour runoff and 100-year, 10-day snowmelt events are 25.1 cfs and 25.3 cfs respectively.	The City will continue to work to implement this measure	The City will continue to work to implement this measure
	• *Oversize Culvert and Reduced Slope at Outfall*: The last section of culvert will be enlarged from 21inches to 36-inches and include an apron and rip-rap to lower velocities and dissipate the energy at the discharge point. This will minimize the potential for	This item has been completed. The outlet to the Mississippi River was installed in 2009.	N/A

	scour and erosion.		
	• *Directional Boring to Install Culvert*: If possible, the culvert will be placed within the river bank by directional boring rather than an open cut. This will reduce the need to remove shoreline vegetation and will minimize the area of disturbance. Erosion control measures will be implemented where soil is disturbed. All disturbed areas will be replanted to native trees, shrubs, grasses and forbs and if appropriate, a temporary cover crop will be established.	This item was completed by the City in 2009.	N/A

ITEM 13. WATER USE

Item No.	Mitigation Description	2013 Update	2018 Update
13.1	Because the COR site is within a DWSMA, special precautions are needed to protect groundwater resources. To make sure this occurs, any discharge of runoff into an area dedicated to infiltration will be pre-treated through such practices as particulate settling, vegetative filtration, skimming, installation of compact, sub-grade treatment (ex. catch basin inserts, cyclonic separators, filters), and various types of pre-treatment soil filtering systems. These practices will be routinely maintained and inspected to make sure these pre-treatment practices do not provide a pathway for contamination of groundwater. Areas that are potential major sources of contamination ("hot-spots") will be identified during construction and special precautions added. These areas would include any location where pollutant spills are more likely to occur (service stations, public works/police/fire fueling operations, significant chemical storage). The City has completed a Wellhead Protection Plan, which was approved by the Minnesota Department of Health in January 2010.	The city will continue to work to implement these measures.	The city will continue to work to implement these measures.
13.2	Within WHPAs, the use of conventional underground storage tanks to store anything other than water is restricted. If underground tanks are utilized in these areas, they must be double-walled with interstitial sensors and a network of monitoring wells must be installed to assess potential groundwater contamination. In addition, an emergency response plan should be developed for the immediate	The city will continue to work to implement these measures.	Little Dukes (located at the intersection of Sunwood Dr. NW and Zeolite St. NW) is an active gas filling station within the study area. This filling station contains underground storage tanks that are double-walled.

	remediation of any spills or leaky tanks.		The city will continue to work to implement these measures.
13.3	When assembling the issues that were to be addressed as part of this AUAR, it was noted by the Anoka Conservation District and by the DNR that there is a possible connection between the increased demand for municipal groundwater and the observed lowering of wetlands in the vicinity of Municipal Wells 3, 4 and 5. Appendix F was prepared to assess the general magnitude of the problem and the solutions required to address the issue. It is now apparent that the wetlands in question experience natural drying during periods of relative low precipitation. The photographic history included as part of the Wetland Delineation report shows wetlands in the vicinity of the COR site disappearing during the mid to late 1980's which is prior to the development of the municipal wells. This same phenomenon occurs again in the mid to late 1990's and prior to the installation of Wells 4 and 5. The evaluation also found, as stated earlier, that drawdown levels in the FIG (Franconia Ironton-Galesville) unit are minimal and, therefore, could not be influencing the wetlands. To verify these finding, however, it is recommended that long term monitoring be performed.	The city will continue to work to implement these measures.	The city installed two monitoring wells near the intersection of Armstrong Blvd and Bunker Lake Blvd. The wells record water levels every 15 minutes. The city will continue to work to implement these measures.
13.4	There is also some concern that increased pumping in the FIG aquifer could impact private wells that pump from this aquifer. Again, the residual drawdown levels in the FIG average 5- to 10-feet during the peak summer pumping period (Appendix F) and recover fully during the Fall, Winter and Spring. Therefore, the radius of influence of the wells will be very small meaning there could be no impacts to private wells developed in the same unit. Before	Permits were secured for previous projects and will be obtained for future projects.	Permits were secured for previous projects and will be obtained for future projects.

	additional wells are constructed, additional appropriations will be applied for through the DNR. This will most likely require both short- and long-term testing and monitoring to verify the above findings. Through this process, the City can insure that there continue to be no impacts on groundwater and surface resources due to their appropriations from the FIG.		

ITEM 14. WATER- RELATED LAND USE MANAGEMENT DISTRICT

ITEM NO.	MITIGATION DESCRIPTION	2013 UPDATE	2018 UPDATE
14.1	The Ramsey 2001 Comprehensive Plan was amended in 2002 and contains the measures needed to effectively implement resource protection for all of the resource protection zones adjacent to the COR site. Although Chapter XI of the Ramsey 2001 Comprehensive Plan contains a thorough set of policies and related actions to protect the natural character of the Critical Area, the Chapter does not contain a specific provision addressing control of noise in this area. The next amendments to the City Plan will add a specific provision to address this specific element in Executive Order 79-19.	The 2030 Comprehensive Plan addressed this issue in Chapter 11 (THE MISSISSIPPI RIVER CRITICAL AREA CORRIDOR/MNRRA). This AUAR update reflects these policies from the 2030 Comprehensive Plan.	N/A

ITEM 15. WATER SURFACE USE

Item No.	Mitigation Description	2013 Update	2018 Update
15.1	Adverse environmental impacts associated with increased small motor and non-motorized boats is not anticipated along the Mississippi River south of the Ramsey Town Center site. In fact, the new Mississippi Regional Park hopes to attract visitors to this portion of the upper River. The use of the park as a formal recreational facility will focus river-related uses to planned areas, and provide resource oversight and supervision of recreational activities.	No Change/No Action Required.	N/A

ITEM 16. EROSION AND SEDIMENTATION

Item No.	Mitigation Description	2013 Update	2018 Update
16.1	Prior to any earth-moving activity on the site, an erosion and sediment control plan will be prepared in accord with the requirements of the City of Ramsey and the LRRWMO. Technical assistance in the preparation of this plan will also be sought from the Anoka Conservation District, the Minnesota Pollution Control Agency and the DNR. The City will be permitted through the Phase II NPDES nonpoint program as a Municipal Separate Storm Sewer System (MS4) operator and will be subject to all of the provisions of that program, including reducing the discharge of pollutants to the maximum extent practicable (MEP) through construction site runoff control. Any construction on the site will also be permitted through MPCA's NPDES general construction permit process.	Permits were secured for past projects and will be obtained for future projects. Future NPDES permits will conform to the LRRWMO 3rd Generation Plan requirements for infiltration for new developments.	Permits were secured for past projects and will be obtained for future projects. Future NPDES permits will conform to the LRRWMO 3rd Generation Plan requirements for infiltration for new developments.

ITEM 17. WATER QUALITY: SURFACE WATER RUNOFF

Item No.	Mitigation Description	2013 Update	2018 Update
17.1	The City will assure that the developer(s) will design and build the final drainage and runoff management system within this overall framework, in compliance with the mandates of the LRRWMO.	*Not addressed.*	The City will continue to work to implement this measure.
17.2	As part of the design process for BMPs, replacement of non-native vegetation with native vegetation will occur whenever practicable and desirable.	*Not addressed.*	The City will continue to work to implement this measure.
17.3	The City of Ramsey has submitted its draft application for a Phase II National Pollutant Discharge Elimination System (NPDES) permit. The unsigned permit was submitted on March 10, 2003 under the MPCA requirements for the program of the U.S. Environmental Protection Agency (EPA). MPCA extended the timeline for receipt of an officially signed permit so that the City could authorize signature through a City Council action. The new deadline for receipt of a signed application is May 9, 2003. After that, the City will need to adopt a Storm Water Pollution Prevention Program (SWPPP). Since the City owns and operates a municipal drainage system, it is subject to the provisions of the Municipal Separate Storm Sewer System (MS4) provisions of the law. Construction activities within the City, and specifically on the Ramsey Town Center site, are also subject to the Phase II General Storm Water Permit for Construction Activity.	This activity has occurred and will continue to occur.	This activity has occurred and will continue to occur.
17.4	The City must identify best management practices (BMPs) and measurable goals associated with each minimum control measure noted above. The City will be given five-	This activity has occurred and will continue to occur.	This activity has occurred and will continue to occur.

	years to develop an effective program after the permit is issued. This period of time coincides with the phased development of the Ramsey Town Center site, which must then include the provisions of the City SWPPP. The City will assure that the provisions of its Program are properly implemented within the Center as development proceeds.		
17.5	Construction within the City of Ramsey is also subject to the provisions of the NPDES Phase II General Storm Water Permit for Construction Activity. This provision is in addition to the construction control measure required under the MS4 permit.	Permits were secured for past projects and will be obtained for future projects.	Permits were secured for past projects and will be obtained for future projects.
17.6	Relationship to Mississippi River TMDL One water quality element of note in the mitigation plan is the need to reduce the negative impact of a discharge to an impaired water under the Total Maximum Daily Load (TMDL) program. The Mississippi River through the City of Ramsey has been listed on the MPCA recommended "303d" list as impaired relative to fecal coliform, PCB and mercury. The PCB and mercury programs are regional in scale and are the subject of regional MPCA and USEPA remediation programs. The discharge of storm water high in fecal coliform, however, is something that the City will need to address. The implementation of nonpoint source pollution control BMPs does not necessarily assure the reduction of fecal coliform. The process for setting a TMDL includes the initiation of a formal study that results in recommendations for control of the pollutant causing the impairment. MPCA has not yet begun this study for the impaired Mississippi River reach; however, once this study begins (currently scheduled for 2004-2006), the City will cooperate to the best of its ability with the MPCA to	The MPCA study is currently underway and it includes the reach in Ramsey. Currently Ramsey is not scheduled to receive a waste load allocation as the reach is classified as a protection watershed. This could change based on future monitoring. The City will continue to cooperate to the best of its ability with the MPCA to reduce the input of fecal coliform to the River.	The Upper Mississippi River Bacteria TMDL Implementation Plan was completed in 2016 and includes the reach in Ramsey. The City of Ramsey did not receive a waste load allocation. The City will continue to cooperate to the best of its ability with the MPCA to reduce the input of fecal coliform to the River.

	reduce the input of fecal coliform to the River.		

ITEM 18. WATER QUALITY: WASTEWATER

Item No.	Mitigation Description	2013 Update	2018 Update
18.1	Both the wastewater flows and the projected loadings from the COR development can be effectively transported and treated by the MCES system. In addition, future development and resulting flows are within the range of those estimated in the City's 2001 Comprehensive Plan, as amended in 2002. Therefore, it does not appear that there is any cause for specific remediation actions. A 30-inch sewer main is recommended to serve the COR. As noted earlier, it will be necessary for the City to update its Comprehensive Sewer Plan, following discussion with MCES on increased allocated capacity. In addition, it will be important to measure and test the wastewater flows from the new development on a periodic basis. This will allow the City and MCES officials to monitor the characteristics of the wastewater generated by the development over time and to address any future unforeseen changes.	The 2030 Comprehensive Plan update includes an update to the Comprehensive Sewer Plan to address these issues. The City has updated the Comprehensive Sewer Plan. Results indicate that there is sufficient capacity in the City's system to accept the wastewater flow from The COR.	The 2040 Comprehensive Plan update includes a Comprehensive Sanitary Sewer Update. Results indicate that there is sufficient capacity in the City's system to accept the wastewater flow from The COR.

ITEM 19. SOIL AND GROUNDWATER CONTAMINATION

Item No.	Mitigation Description	2013 Update	2018 Update
19.1	The high permeability of the soils at the COR are ideal for the implementation of infiltration practices that will manage stormwater runoff, provide flood control and recharge the water table aquifer. However, the high permeability also increases the risk for potential contamination of groundwater resources. In order to mitigate this risk, best management practices (BMPs) and community education programs will be implemented.	This activity has occurred and will continue to occur.	This activity has occurred and will continue to occur.

ITEM 20. SOLID WASTES; HAZARDOUS WASTES; STORAGE TANKS

Item No.	Mitigation Description	2013 Update	2018 Update
20.0	To decrease the amount of solid waste generated within the City, Ramsey maintains the following policies as stated in its 2001 Comprehensive Plan: • Work with the Anoka County Integrated Waste Management Department to develop and implement programs that contribute to waste reduction, resource recovery, recycling and limited landfilling; • Continue to support curbside recycling of reusable waste materials through educational events, promotional events, and volunteer efforts; • Research grants and funding programs through federal, state, and local organizations that support the ―Three R's (reduce, reuse, and recycle); and	The City updated these policies in the 2030 Comprehensive Plan and will continue to work to implement these measures. The City updated the Comprehensive Water Supply and Distribution Plan.	In 2014, State Statute 115A.551 was amended to specify a goal that every metropolitan county recycle 75%, by weight, of the total solid waste generated by 2030. In response, the City has created new and/or additional opportunities for residents to recycle both inorganic and organic materials. The 2040 Comprehensive Plan, Natural Resources Plan chapter, was updated to include this, as well as

	• Continue to pursue and support research efforts in innovative techniques that enhance the environment, provide alternative means of energy, and reduce the waste stream. The implementation of these policies will help to reduce the quantities of solid waste produced at the Town Center		the other previous policies. The City will continue to work to implement these measures.
20.1	Within the WHPA, underground storage tanks and infiltration are not recommended. Should contamination occur due to these or any other practice, alternative water supply sources may be required. Currently the city water towers store an extra amount of water equivalent to meet the supply need for one day. There is also an emergency connection with the City of Anoka for additional water needs. A contingency plan should be developed as part of the next water supply plan update to deal with contamination. These could be coordinated with existing city plans, data, and management procedures, many of which are detailed in the city's Water Supply Plan, WHP Plan, 2001 Comprehensive Plan, and this document. A contingency plan is also required by the State as part of the city's water supply plan (M.S., Section 103G.291, subd.3. As part of its next revision, the City of Ramsey will amend its 1999 Water Supply Plan to include an emergency response element. The amendment will include all of the above components. This will occur prior to applying for a DNR appropriation permit amendment, which would likely trigger the DNR request for emergency plan completion, as well.	These items were completed as part of the Water Element of the 2030 Comprehensive Plan update.	N/A
20.2	The installation of monitoring wells throughout the WHPA would be appropriate to protect the water quality of the	The City will continue to work on this item.	The City will continue to work on this item.

	upper aquifer. Should contamination occur, a network of monitoring wells would help to quickly identify the contaminant source and aid in the quick remediation and possibly reduce the extent of contamination. A monitoring well network would also help to understand the relationship between the pumping in the Franconia-Ironton-Galesville aquifer and the upper aquifer. The extent of any further monitoring will be determined during wellhead protection plan development and State water appropriation permitting.		
20.3	The City reviewed current Minnesota MPCA/MDA What's in My Neighborhood databases for records of potential contamination within undeveloped parcels. Based on the review, one undeveloped site in the study area was determined to have the presence, or likely presence, of soil and/or groundwater contamination. This site is shown on **Figure 3**.	*New Item - Not Addressed*	Completion of a Phase I Environmental Site Assessment at this site is recommended prior to redevelopment.
20.4	Contaminated soils at the BNSF VIC site must be removed per the plan for the summer of 2003. Removal could potentially occur during construction of the multi-modal facility, Hwy 10 improvements, or COR construction.	*New Item - Not Addressed*	BNSF completed contaminated soil removal in this area in 2012.
20.5	Further investigation may be needed to determine the extent, if any, of contamination at the abandoned farmstead. If there is soil or groundwater contamination due to improper handling and storage of chemicals and hazardous substances at this site, appropriate removal and remediation of the contaminated areas may be required.	*New Item - Not Addressed*	No Change.
20.6	Use of underground storage tanks within the WHPA should be discouraged. If underground storage tanks are used to store anything other than water within the WHPA, the tanks must be double-walled and the groundwater around the tank must be appropriately monitored for contamination.	*New Item - Not Addressed*	No Change.

20.7	Phase I ESA for Site 47 consisting of Anoka County Parcel 28-32-25-23-0010 Phase II ESA for Site 47 consisting of Parcel 28-32-25-23-0010	*New Item – Not Addressed*	The City prepared a Phase I ESA report for the site on August 16, 2016. The assessment identified the following Recognized Environmental Concern (REC) associated with the site: 1. Adjacent gas station – Little Dukes located west of the site Based on the location of the gas station, further environmental investigation was recommended. The City completed a Phase II ESA at the site and summarized the results in a report dated October 18, 2016. The Phase II ESA consisted of three soil borings advanced to 4-16 feet below grade and the collection of soil, groundwater, and soil vapor samples. No soil detections were identified above regulatory thresholds. Diesel Range Organics (DRO) were detected in the soil and 1,3-butadiene in the soil gas above established regulatory thresholds. The east third of this site is developed When development is proposed on the remaining portion of the site, further

			investigation into the extent of contamination should be completed. If necessary, the site must be cleaned up to MPCA standards.

ITEM 21. TRANSPORTATION

Item No.	Mitigation Description	2013 Update	2018 Update
21.1	Analysis of the intersection operations indicates that lane additions and installation of intersection channelization and traffic signals would be adequate to mitigate the project impacts at the intersections in the study area. The following roadway widenings are suggested: • Ramsey Boulevard—widen to five lane cross section south of Industry Avenue to provide two through lanes in each direction and a left turn lane/center median.	This item has been completed.	N/A
	• Bunker Lake Boulevard (formerly Industry Avenue)—widen to five lane cross section west of Ramsey Boulevard to provide two through lanes in each direction and a left turn lane/center median.	This item has been partially completed. Bunker Lake Boulevard has been upgraded between Dysprosium Street and Sunfish Lake Boulevard. In addition, the intersections at Ramsey Boulevard (CSAH 56) and Armstrong Boulevard (CSAH 83) have been upgraded. There are two (2) remaining sections to be upgraded and said Improvement Project is included	Bunker Lake Boulevard east of Puma Street is scheduled for improvements in 2018. The segment of Bunker Lake Boulevard between Armstrong Boulevard and Ramsey Boulevard is included in the City's five (5) year Capital Improvement Program for construction in 2022.

		in the City's five (5) year Capital Improvement Program. This Section of Industry Avenue is now called Bunker Lake Boulevard and is being funded through the existing TIF 14 funds.	
21.2	Turn lanes and lane adjustments would be needed at the following intersections: • TH 10 at Armstrong Boulevard—add an eastbound and a westbound through lane on the intersection approaches; add an eastbound and a southbound left turn lane and a southbound right turn lane.	The City will continue to work with MnDOT and Anoka County on this item, including improvement discussed for the Armstrong Interchange. It is the City's understanding that the Metropolitan Council does not support a third lane on Highway 10.	No Change.
	• TH 10 at Ramsey Boulevard—add an eastbound and a westbound through lane on the intersection approaches; add an eastbound and a southbound left turn lane and a westbound right turn lane. A southbound through lane and a northbound left turn lane and northbound through/right lane would need to be added to serve the Rivenwick 3rd Subdivision traffic independent of the project traffic.	The City will continue to work with MnDOT and Anoka County on this item, including improvement discussed for the Armstrong Interchange. It is the City's understanding that the Metropolitan Council does not support a third lane on Highway 10.	No Change.
	• TH 10 at Sunfish Lake Boulevard—add an eastbound and a westbound through lane on the intersection approaches; convert the southbound approach from a through/left turn lane and a right turn lane to through/right turn lane and two left turn lanes (this adds one lane to the approach).	The City will continue to work with MnDOT and Anoka County on this item, including improvement discussed for the Armstrong Interchange. It is the City's understanding that the Metropolitan Council does not support a third lane on Highway	No Change.

		10.	
	• Bunker Lake Boulevard (formerly Industry Avenue) at Ramsey Boulevard—add a southbound right turn lane; eastbound and northbound approaches would be widened by the above recommendations.	This item has been completed.	N/A
	• Sunwood Drive at Bunker Lake Boulevard (formerly Industry Avenue)—modify the shared lanes on the northbound, eastbound and westbound approaches to provide left turn lanes and shared through/right turn lanes	The City will continue to work on this item.	Northbound Bunker Lake Boulevard at Sunwood Drive has been modified to include left and right turn lanes. The City's five (5) year Capital Improvement Program includes a placeholder for a signalization project for the Bunker Lake Boulevard/Sunwood Drive intersection in 2021, but the project is currently unfunded.
21.3	The following stop-controlled intersections would need to be signalized: • Ramsey Boulevard at Bunker Lake Boulevard (formerly Industry Avenue).	This item has been completed (Ramsey Boulevard at Bunker Lake Boulevard).	N/A
	• Armstrong Boulevard at Bunker Lake Boulevard (formerly Industry Avenue).	This item has been completed (Armstrong at Bunker Lake Boulevard).	N/A
	• Bunker Lake Boulevard (formerly Industry Avenue) at Sunfish Lake Boulevard.	This item has been completed.	N/A
	• Ramsey Boulevard at Sunwood Drive.	This item has been completed.	N/A

	• Sunwood Drive at Bunker Lake Boulevard (Industry Avenue).	The City will continue to work on this item. It has been included in the City's capital improvement program (CIP).	The City's five (5) year Capital Improvement Program includes a placeholder for a signalization project for the Bunker Lake Boulevard/Sunwood Drive intersection in 2021, but the project is currently unfunded.
	• Sunwood Drive at Armstrong Boulevard.	This item has been completed, subject to final signal installation.	This item has been completed.
	• NS3 Street at Bunker Lake Boulevard (formerly Industry Avenue).	NS3 Street is proposed to be changed to Center Street and this portion of Industry Avenue has been renamed Bunker Lake Boulevard. The City will continue to work on this item.	NS3 Street has been changed to Center Street. The City will continue to work on this item.
21.4	The left turn volumes from the EW1 parkway (proposed to be renamed Ramsey Parkway) onto both Armstrong and Ramsey Boulevard cannot be accommodated at an acceptable LOS under stop control and require signalization to achieve acceptable operations. However, the close spacing between the intersections of the EW1 parkway and the intersections of Armstrong and Ramsey Boulevard with Industry Avenue limits the potential for the two parkway intersections to be signalized. Accordingly, the parkway intersections should be channelized to provide right-in/right-out and left-in access (¾ access). Left out from the parkway would be prohibited and would redistribute to the north-south streets and to Industry Avenue (these volumes have been included in the mitigated calculations for the other intersections).	The City completed the Preliminary Engineering Report for Sunwood Drive (December 6, 2011) for realignment of the western portion of Sunwood Drive. The revisioning of The COR and the creation of Development Plan 5.03 (adopted as part of the Comprehensive Plan 2011 Major Update) resulted in some of the residential land in the western portion of the project area being converted to commercial/retail in order to provide a better balance of land uses and respond to the current marketplace. Other changes were	These improvements have been completed.

		made in the undeveloped areas, including the creation of Lake Ramsey in the greenway Corridor. This study showed that traffic would increase under this revised scenario by 12.8%. The increased traffic can be accommodated by the improvements previously completed and the improvements planned in the 2011 feasibility study. This work was coordinated with the Armstrong Boulevard and Relocated Sunwood Drive Intersection Improvements Feasibility Report (December 2, 2011). These improvements have been completed. The project combined the Sunwood and EW1 Parkway intersections with Armstrong Boulevard into one fully signalized intersection.	

ITEM 22. VEHICLE RELATED EMISSIONS

Item No.	Mitigation Description	2013 Update	2018 Update
22.1	There are no specific air quality mitigation measures proposed for the Ramsey Town Center Development, because implementation of the project does not result in violation of State or National Air Quality Standards. Carbon monoxide concentrations were modeled along the Highway 10 corridor assuming no road improvements in the project	No change.	No change.

	vicinity. The road improvements discussed in Section 21 would help to reduce carbon monoxide emissions, although they are not required as a result of the air quality analysis.		

ITEM 24. DUST, ODORS, NOISE

Item No.	Mitigation Description	2013 Update	2018 Update
24.1	Noise wall mitigation would not be practical along Industry Avenue. Driveways and street intersections would create gaps in the wall, defeating its purpose. It is suggested that the proposed residential units in Blocks 28, 36, 37, and 38 be designed to minimize noise impacts. The noise around the homes and surrounding areas can be reduced by providing climate-controlled units, increasing wall insulation, and providing common areas on the side of the buildings furthest from Industry Avenue.	The City will continue to work to implement this measure along Bunker Lake Boulevard (formerly Industry Avenue).	The City will continue to work to implement this measure along Bunker Lake Boulevard (formerly Industry Avenue).

ITEM 25. SENSITIVE RESOURCES

Item No.	Mitigation Description	2013 Update	2018 Update
25.1	*Unidentified Resources*. Various circumstances may lead to the discovery of unidentified historic or archeological resources within the project boundaries. When any such new discovery is brought to the attention of the developer or the City, an evaluation of the significance will be conducted, and appropriate management measures will be devised in consultation with SHPO.	This measure will continue to apply.	This measure will continue to apply.

25.2	Although the COR site is not within the geographic area covered by MNRRA, every effort will be made by COR LLC to work with Anoka County Parks, Ramsey Parks and the National Park Service to comply with the policies of these agencies and to minimize or avoid any adverse impacts from development of the COR site.	This measure will continue to apply.	This measure will continue to apply.

ITEM 26. ADVERSE VISUAL IMPACTS

Item No.	Mitigation Description	2013 Update	2018 Update
26.1	Light emissions from commercial and residential areas cannot be avoided because of safety issues and the need for residences and businesses to see clearly at night. City Ordinance 9.11.07 describes any lighting used to illuminate an off-street parking area, sign, or other structure, must be arranged so that the light is deflected away from residential districts and public streets. Bulbs emitting in excess of 3,000 lumens (150 watts) must be arranged so that the light is not visible outside of the property where the light is located. There are several methodologies of acceptable screening methods for these nuisances that can also be used for transitioning from high- to low-density residential or from residential to commercial areas. Screening methods typically include a vegetative barrier no less than five feet high or other natural materials. Applying shields to street and parking lot lamps directs the light to the ground surface where it's wanted, not into the adjacent neighborhood. All of these practices should minimize the impact of the light at the River but will not eliminate it.	The City will continue to enforce the adopted lighting ordinance.	The City will continue to enforce the adopted lighting ordinance.

26.2	The visual impacts of construction on a scale that will occur at COR over several years will be difficult to mitigate, but several measures to minimize the impact will be followed. The most offensive visual characteristics of construction, and possible mitigating actions are: • Soil erosion leading to sediment movement off-site - Item 16 spelled-out a mitigation element to control on-site erosion and off-site sedimentation. • Access streets and roads covered with dirt and gravel/rocks - The erosion and sediment control program will include egress gravel wash pads and will contain a daily sweeping plan for roads affected by construction traffic. • Swirling dust caused by earth-moving activity on dry soil - A water truck will be available on site to spray areas experiencing dust movement. This will be especially critical on the sandy soils prevalent on site. • Construction equipment and temporary trailers - Every effort will be made to screen immobile equipment and to park mobile equipment in a visually sheltered location at the end of the working day. • Exposed soil - One of the essential elements in the erosion and sediment control plan will be rapid stabilization, covering and re-vegetation of exposed soils. Although some exposed soil will be impossible to avoid, every attempt will be made to minimize exposure.	This measure has been followed and will continue to apply.	This measure has been followed and will continue to apply.

ITEM 27. COMPATIBILITY WITH PLANS

Item No.	Mitigation Description	2013 Update	2018 Update
27.1	At this time, the Ramsey 2001 Comprehensive Plan, as amended in 2002, fully addresses the development of the COR site and adequately relates this development to the various other agency plans with which it must comply. However, any change in the project that would lead to deviation in one or more of the plans must be corrected by a plan amendment.	This measure has been followed and will continue to apply. The City adopted the 2030 Comprehensive Plan update in 2010. The City approved a Comprehensive Plan Amendment in 2012, which and approved by the Metropolitan Council. The City has also adopted a Zoning Ordinance Amendment and COR Design Framework (February 28, 2012, amended November 27, 2012) to implement the 2030 Comprehensive Plan Amendment (including the 2012 amendment) and the revised development plan for the AUAR area ("The COR").	This measure has been followed and will continue to apply. The City plans to update its zoning ordinance in 2019 to include the Design Framework for the COR.

ITEM 28. IMPACT OF INFRASTRUCTURE AND PUBLIC SERVICES

Item No.	Mitigation Description	2013 Update	2018 Update
28.1	The major physical infrastructure elements of roads and streets, sanitary sewer, municipal water and storm sewer have all previously been addressed within this AUAR. An evaluation of the social services needed for the COR development indicates that the planning done for the City	No change.	No change.

	has accounted for the growth related to the COR. Police, fire, public works, schools, and related City and postal services will all be impacted by the development. Additional equipment to perform City public works services will be needed. No additional mitigation is needed to meet the expected growth.		

ITEM 30. OTHER POTENTIAL ENVIRONMENTAL IMPACTS

Item No.	Mitigation Description	2013 Update	2018 Update
30.1	No need for mitigation anticipated from the two items identified in the original AUAR (impact of Anoka-Ramsey Landfill to COR and COR land use change from agriculture to urban), but if the need arises during the AUAR review, necessary mitigation will be included here.	No change.	No change.