Appendix E – U.S. Fish & Wildlife Section 7 Consultation Correspondence

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U.S. Fish & Wildlife Services Section 7 Concurrence Email and Attachment December 7, 2017	E-1 thru E-14

Evan Barrett

From: Joshua.Fitzpatrick@faa.gov
Sent: Thursday, December 7, 2017 2:00 PM
To: Evan Barrett
Subject: FW: Lake Elmo Airport ESA Effect Determination
Attachments: OPHI - Presentation for ODOT FAA Workshop.pdf

Evan, below is Section 7 concurrence from USFWS. Please include and reference in EA. If acreages for tree removal increase then I will need to reinitiate consultation.

Also, per below the Service is asking if Lake Elmo would like to be a candidate site for rusty patched bumble bee reintroduction where they dedicate a portion of land to bumble bee restoration efforts. Perhaps we can talk about this at our Tuesday meeting?

Thank you,

Josh Fitzpatrick
Environmental Protection Specialist
FAA Dakota-Minnesota Airport District Office
Joshua.Fitzpatrick@faa.gov
(612) 253-4639

From: Horton, Andrew [mailto:andrew_horton@fws.gov]
Sent: Thursday, December 07, 2017 12:36 PM
To: Fitzpatrick, Joshua (FAA) <Joshua.Fitzpatrick@faa.gov>
Cc: Peter Fasbender <Peter_Fasbender@fws.gov>; Smith, Tamara <tamara_smith@fws.gov>
Subject: Re: Lake Elmo Airport ESA Effect Determination

Josh,

I have reviewed the proposed activities at the Lake Elmo Airport and agree with your determination that the project may affect, but is not likely to adversely affect the northern long-eared bat (*Myotis septentrionalis*). Impacts to the species from the removal of 20-acres of trees at this location are likely to be insignificant or discountable because they will be removed at a time when the northern long-eared bat is not present on the landscape, eliminating the risk of direct mortality. Regarding the rusty patched bumble bee (*Bombus affinis*), consultation is not necessary because the proposed action is located outside of a high potential zone. It is also unlikely that any portion of the airport currently has suitable foraging or nesting habitat. With that said, this property is located within 2-miles of recent rusty patched bumble bee observations and has a considerable land area that could be supportive of conservation efforts for the species. The Service would be interested in any possibility of the airport managing a portion of the property to encourage native flowering species that would provide nectar and pollen sources for populations that may be in the area. We would recommend this, of course, only if it was compatible with the safety requirements and did not interfere with airport operations. I would also like to add that other airports have taken this approach with success and this could be a great opportunity to have a local success story supporting endangered species. More information on one example I came across is included in the attachment.

This concludes consultation under Section 7 of the Endangered Species Act, as amended. Please contact our office if this project changes or new information reveals effects of the action to proposed or listed species or critical habitat to an extent not covered in your original request. Also, please reach out to us if you would like to take this opportunity to support the rusty patched bumble bee. Thank you.

- Andrew

Andrew Horton
U.S. Fish and Wildlife Service
Minnesota/Wisconsin Field Office
4101 American Blvd East
Bloomington, MN 55425-1665
(952) 252-0092, ext. 208

On Fri, Nov 3, 2017 at 10:50 AM, <Joshua.Fitzpatrick@faa.gov> wrote:

Dear Mr. Horton:

The Lake Elmo Airport (Airport) has undertaken an environmental assessment (EA) with the Federal Aviation Administration (FAA) for Airport improvements including:

- Relocate Runway 14/32 to the northeast and extend to the southeast, including all necessary grading, clearing, and runway lighting.
- Construct cross-field taxiway to serve new Runway 14 end.
- Convert existing Runway 14/32 to a partial parallel taxiway and construct other taxiways as needed to support the relocated runway, including taxiway lighting and/or reflectors.
- Extend Runway 04/22 to the northeast and add necessary lighting and taxiway connectors.
- Realign 30th Street North around the new Runway 14/32 runway protection zone to reconnect with Neal Avenue North.
- Construct a connector road.
- Establish non-precision instrument approach procedures to all four runway ends.
- Remove approximately 20 acres of trees.

The attached exhibit illustrates all of the project elements identified in the proposed action.

Lake Elmo Airport is located in Washington County, Minnesota. As of September 18, 2017, there were six federally-listed species under the Endangered Species Act (ESA) with habitat in Washington County. Four of these species are freshwater mussels including the Higgins eye pearlymussel, the Snuffbox, the Spectaclecase, and the Winged mapleleaf. These species contain habitat in either the Mississippi or the St. Croix Rivers, and would not be affected by the proposed action. The FAA made a no effect determination to these four freshwater mussels on November 3, 2017.

The other two ESA listed species are the Northern long-eared bat (NLEB) (listed as threatened) and the Rusty patched bumble bee (listed as endangered).

Common Name	Scientific Name	Federal Status
Northern long-eared bat	*Myotis septentrionalis*	Threatened
Rusty patched bumble bee	*Bombus affinis*	Endangered

Based on the above, the NLEB and Rusty patched bumble bee have potential habitat at or near Lake Elmo Airport, and/or have been documented as occurring within a 2.5-mile radius of the project area. Characteristics, habitat, and mitigation measures associated with each of these species are discussed below.

Northern long-eared bat

The predominant threat to the NLEB is white-nose syndrome; a fungal disease which has eliminated up to 99 percent of NLEB populations in the northeastern United States. White-nose syndrome has been reported in Washington County. During summer, the NLEB typically roosts singly or in colonies under the bark, in cavities or in crevices of living and dead trees. Males and non-reproductive females may also roost in caves and mines during the summer; most hibernate during winter in caves and mines with constant temperatures, high humidity and no air currents. No critical habitat has been designated for this bat. Potential habitat for the NLEB is present within the proposed action area and may be present in areas in which trees will be removed.

The proposed action will require the removal of trees on Airport property for construction of the runway and clearance of associated approach and departure surfaces. Approximately 20 acres of deciduous trees will be cleared in association with the proposed action. The groups of multiple species range in age from saplings, with a diameter at breast height of less than three inches to large, mature trees of 40 feet or more in height. The trees are located along fence rows, within agricultural fields, or in surrounding wetlands. Standing and downed dead trees are also present within these areas. Trees and woody shrubs include, but are not limited to the species listed below.

Trees and Woody Shrubs Observed at Lake Elmo Airport			
Common Name	**Scientific Name**	**Height**	**Habit / Dominant**
Boxelder	*Acer negundo*	40-60 feet	Tree / Yes
Silver maple	*Acer saccharinum*		Tree / No
Redosier dogwood	*Cornus sericea*		Shrub / No
White ash	*Fraxinus americana*		Tree / No
Green ash	*Fraxinus pennsylvanica*	40 feet	Tree / No

Eastern cottonwood	*Populus deltoides*		Tree / No
Quaking aspen	*Populus tremuloides*	Up to 80ft	Tree / No
Black cherry	*Prunus serotina*	Up to 15ft	Tree / No
Burr oak	*Quercus macrocarpa*	50 feet	Tree / Yes
Pin oak	*Quercus palustris*	30-50 feet	Tree / No
Common buckthorn	*Rhamnus cathartica*	Up to 20 feet	Shrub / Yes
Missouri gooseberry	*Ribes missouriense*	Up to 6 feet	Shrub / Yes
Black willow	*Salix nigra*		Tree / No
American black elderberry	*Sambucus nigra ssp. canadensis*	Up to 12 feet	Shrub / Yes
American elm	*Ulmus americana*	40-60 feet	Tree / Yes
Slippery elm	*Ulmus rubra*		Tree / No
Common pricklyash	*Zanthoxylum americanum*	8-10 feet	Shrub / No

The 4(d) rule for the NLEB stipulates that incidental take for projects inside the white-nose syndrome zone is not prohibited. The federal agency can rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific Section 7 responsibilities. The following Avoidance and Minimization Measures (AMMs) from the *Range-Wide Biological Assessment for Transportation Projects for Indiana Bat and Northern Long-Eared Bat* (USFWS/USDOT, April 2015) are proposed for the tree removal activities.

Tree Removal AMM 2 - To avoid and minimize impacts to the NLEB, tree clearing will be completed between October 1 and April 30, which is the dormant season for the bat at this latitude.

Tree Removal AMM 3 - Tree removal will be limited to that specified in project plans. Tree removal limits will be clearly indicated in the field by bright orange flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Tree clearing limitations will be discussed with contractors at the pre-construction meeting to ensure that they understand clearing limits and how they are marked in the field.

Rusty patched bumble bee

Rusty patched bumble bees (*Bombus affinis, (*RPBB)) live in colonies that have an annual cycle. The bees gather pollen and nectar from a variety of flowering plants and prefer tallgrass prairie habitat. Historically its range included 28 states, the District of Columbia, and two provinces in Canada. Since 2000, the RPBB has been reported in only 13 states and one Canadian province. A combination of the loss of habitat and related diversity of flowering plants due to intense farming and general development, along with pesticide use, led to the listing of this species as endangered in January 2017. No critical habitat has been designated for the RPBB, and the airport is in a low potential habitat zone per the USFWS website. There are no areas of tallgrass prairie within the study area, and areas dominated by grasses and flowering forbs are mowed on a regular basis. Therefore, there are no potential vegetation types that provide habitat for the RPBB that would be affected by

the proposed action. The FAA utilized the IPAC website and the species was not identified to be present in the action area.

Biological Resources (including fish, wildlife, and plants)

During multiple days of field work in June 2017 conducted by two Mead & Hunt biologists to identify and delineate wetlands, a variety of plant and animal species were identified within the study area including insects, arachnids, birds, mammals, amphibians, and wetland and upland vegetation. Birds identified within the study area included, but were not limited to, American crows, red-winged blackbirds, bluejays, chickadees, vireos, swifts/swallows, and multiple sparrow species. One female white-tailed deer was observed and photographed. Frogs were observed in wetland areas. Wetland vegetation is documented in the wetland data sheets and related report completed in September 2017. Upland herbaceous vegetation was dominated by Kentucky bluegrass, red clover, dandelion, oxeye daisy, yarrow, thistle and plantains. Areas with these dominant plants are frequently mowed and maintained. No bald or golden eagles were observed during the field work.

Based on the information described above the FAA has made a may affect, not likely to adversely affect ESA determination to both the NLEB and RPBB. The FAA requests concurrence from the USFWS on both of these determinations.

If you have any questions or concerns, please let me know.

Thanks,

Josh Fitzpatrick

Environmental Protection Specialist

FAA Dakota-Minnesota Airport District Office

Joshua.Fitzpatrick@faa.gov

(612) 253-4639

Pollinator Habitat at Airports

Scott Lucas
Ohio Department of Transportation
presenting on behalf of :
Ohio Pollinator Habitat Initiative

What is the Ohio Pollinator Habitat Initiative?

- Ohio Pollinator Habitat Initiative (OPHI) began in 2015.
- The purpose of the initiative:
  - Create and improve pollinator habitat across the State of Ohio.
  - Increase and improve pollinator conservation and awareness.
- The motto is: “All you can, where you can.”
- The group has a large number of partners.

Partners

- Pheasants Forever
- Ohio Division of Wildlife
- US Fish and Wildlife Service
- Ohio Department of Agriculture
- Various Soil and Water Conservation Districts
- And many more...

Why would you want to plant pollinator habitat at an airport?

- Reduce the number of large bird strikes with planes
  - Large birds like Canada geese and different species of gulls tend to avoid tall grass
- Reduction in carbon footprint
  - Prairies absorb about 1 metric ton of carbon per acre according to experts.
- Save mowing costs
  - Once established, prairies only need mowed once a year
- Last but not least, create habitat for pollinators

What are the costs for establishing a warm season grass pasture?

The initial cost of establishing a warm season grass pasture per acre estimates[16]:

- Seed costs: $240/acre[17]
- Site prep (tillage): $8-20/acre (average = $14/acre)
- Site prep (herbicide): $3-13/acre (average = $8/acre)
- Seeding costs $10-50/acre (average = $30/acre)
- Weed management $8-27/acre (average = $18/acre)
- ***TOTAL COSTS $310/acre***

[16] Iowa State University Extension and Outreach, "Incorporating Prairies into Multifunctional Landscapes." August 2011.

[17] Estimated price of $240/acre for seed provided by Pheasants Forever.

Are there grants available for planting pollinator habitat?

Opportunities for receiving grants could be available through:

- NOAA's grant program
  - https://grantsonline.rdc.noaa.gov/flows/home/Login/LoginController.jpf
- Partnerships with not-for-profit organizations
  - Not-for-profit organizations can apply for grants that for-profit organizations cannot apply for
- Ohio EPA Educational Program
  - http://www.epa.ohio.gov/oeef/EnvironmentalEducation.aspx
- OPHI has resources available for project specific grant programs
  - http://www.ophi.info/

Who has planted pollinator plots at airports?

The Dayton International Airport has multiple plantings:

- 270 acres of tall Native Warm Season Grass Prairies
- Switchgrass Plots
- Agricultural fields
- Airfield turf

Who do I contact if I want to look into planting pollinator habitat at my airport?

Dayton International Airport plantings:

Mike Cross at 937-623-8343

MCross@flydayton.com

ODOT's involvement in pollinator plantings:

Scott Lucas at 614-644-6603

Scott.Lucas@dot.ohio.gov

OPHI statewide:

Marci Lininger at 614-416-8993 ex: 27

Marci_Lininger@fws.gov

Thank you for your time.

Appendix F – Minnesota DNR Natural Heritage Information System (NHIS) Materials

Content	Page
Minnesota Department of Natural Resources NHIS Letter and Attachments September 11, 2017	F-1 thru F-12

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

September 11, 2017
Correspondence # ERDB 20170278-0002

Mr. Evan Barrett
Mead & Hunt, Inc.
7900 West 78th Street, Suite 370
Minneapolis, MN 55439

RE: Natural Heritage Review of the proposed Lake Elmo Airport Improvements,
T29N R20W Sections 18 & 19; Washington County

Dear Mr. Barrett,

As requested, the Minnesota Natural Heritage Information System 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, rare features have been documented within the search area (for details, please visit the Rare Species Guide at http://www.dnr.state.mn.us/rsg/index.html for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

State-listed Species

- Blanding's turtles (*Emydoidea blandingii*), a state-listed threatened species, have been reported in the vicinity of the proposed project and may be encountered on site. Blanding's turtles use wetlands as well as upland areas up to and over a mile distant from wetlands. Uplands are used for nesting, basking, periods of dormancy, and traveling between wetlands. Factors believed to contribute to the decline of this species include collisions with vehicles, wetland drainage and degradation, and the development of upland habitat. Any added mortality can be detrimental to populations of Blanding's turtles, as these turtles have a low reproduction rate that depends upon a high survival rate to maintain population levels.

  This project has the potential to impact this rare turtle through direct fatalities or habitat disturbance/destruction due to dewatering, excavation, fill, or other construction activities associated with the project. Actions to avoid or minimize disturbance to this state-protected turtle may include, but are not limited to, the following recommendations:

  - Avoid Type 2 & 3 wetlands,
  - To avoid any incidental takings, avoid filling or dewatering wetlands during the winter,
  - Implement stringent sediment and erosion control methods,
  - Use wildlife-friendly erosion control methods (see enclosed fact sheet),
  - Monitor for turtles during construction and report any sightings to the DNR,

- Refer to the first list of recommendations in the enclosed Blanding's Turtle Fact Sheet. If greater protection for turtles is desired, the second list of recommendations can be implemented as well.
- If further assistance is needed regarding the Blanding's turtle, please contact the DNR Regional Nongame Specialist, Erica Hoaglund, at 651-259-5772 or Erica.Hoaglund@state.mn.us.

The attached flyer should be given to all contractors working in the area. If Blanding's turtles are encountered on 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 must be moved by hand out of harm's way, otherwise they are to be left undisturbed.

Federally Protected Species

- The rusty patched bumble bee (*Bombus affinis*), a federally-listed endangered species, was documented within two and a half miles of the proposed project. The rusty patched bumble bee typically occurs in grasslands and urban gardens with flowering plants from April through October. This species nests underground in abandoned rodent cavities or in clumps of grasses. Please reference the guidance at the following website to determine if the project has the potential to impact this protected species: https://www.fws.gov/midwest/endangered/insects/rpbb/guidance.html.

Environmental Review and Permitting

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance..

- Please include a copy of this letter in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), 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. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

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 the project description provided on the NHIS Data Request Form. Please contact me if project details change or for an updated review if construction has not occurred within one year.

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. If you have not done so already, please contact your DNR Regional Environmental Assessment Ecologist to determine whether there are other natural resource concerns associated with the proposed project (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,

Samantha Bump
Natural Heritage Review Specialist
Samantha.Bump@state.mn.us

Enc. Blanding's Turtle Fact Sheet & Flyer
Wildlife Friendly Erosion Control
Rusty Patched Bumble Bee Fact Sheet

Cc: Becky Horton
Leslie Parris
Erica Hoaglund

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.

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.

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 (507-206-2820); 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

Rusty Patched Bumble Bee
Bombus affinis

The U.S. Fish and Wildlife Service listed the rusty patched bumble bee as endangered under the Endangered Species Act. Endangered species are animals and plants that are in danger of becoming extinct. Identifying, protecting and recovering endangered species is a primary objective of the U.S. Fish and Wildlife Service's endangered species program.

What is a rusty patched bumble bee?

Appearance: Rusty patched bumble bees live in colonies that include a single queen and female workers. The colony produces males and new queens in late summer. Queens are the largest bees in the colony, and workers are the smallest. All rusty patched bumble bees have entirely black heads, but only workers and males have a rusty reddish patch centrally located on the back.

Habitat: Rusty patched bumble bees once occupied grasslands and tallgrass prairies of the Upper Midwest and Northeast, but most grasslands and prairies have been lost, degraded, or fragmented by conversion to other uses. Bumble bees need areas that provide nectar and pollen from flowers, nesting sites (underground and abandoned rodent cavities or clumps of grasses), and overwintering sites for hibernating queens (undisturbed soil).

Illustrations of a rusty patched bumble bee queen (left), worker (center), and male (right) by Elaine Evans, The Xerces Society.

Photo courtesy of Christy Stewart

Reproduction: Rusty patched bumble bee colonies have an annual cycle. In spring, solitary queens emerge and find nest sites, collect nectar and pollen from flowers and begin laying eggs, which are fertilized by sperm stored since mating the previous fall. Workers hatch from these first eggs and colonies grow as workers collect food, defend the colony, and care for young. Queens remain within the nests and continue laying eggs. In late summer, new queens and males also hatch from eggs. Males disperse to mate with new queens from other colonies. In fall, founding queens, workers and males die. Only new queens go into diapause (a form of hibernation) over winter - and the cycle begins again in spring.

Feeding Habits: Bumble bees gather pollen and nectar from a variety of flowering plants. The rusty patched emerges early in spring and is one of the last species to go into hibernation.

Why conserve rusty patched bumble bees?

As pollinators, rusty patched bumble bees contribute to our food security and the healthy functioning of our ecosystems. Bumble bees are keystone species in most ecosystems, necessary not only for native wildflower reproduction, but also for creating seeds and fruits that feed wildlife as diverse as songbirds and grizzly bears.

Bumble bees are among the most important pollinators of crops such as blueberries, cranberries, and clover and almost the only insect pollinators of tomatoes. Bumble bees are more effective pollinators than honey bees for some crops because of their ability to "buzz pollinate." The economic value of pollination services provided by native insects (mostly bees) is estimated at $3 billion per year in the United States.

It needs a constant supply and diversity of flowers blooming throughout the colony's long life, April through September.

Range: Historically, the rusty patched bumble bee was broadly distributed across the eastern United States and Upper Midwest, from Maine in the U.S. and southern Quebec and Ontario in Canada, south to the northeast corner of Georgia, reaching west to the eastern edges of North and South Dakota. Its range included 28 states, the District of Columbia and 2 provinces in Canada. Since 2000, this bumble bee has been reported from only 13 states and 1 province: Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, Wisconsin – and Ontario, Canada.

Why is the rusty patched bumble bee declining?

Habitat loss and degradation: Most prairies and grasslands of the Upper Midwest and Northeast have been converted to monoculture farms or developed areas, such as cities and roads. Grasslands that remain tend to be small and isolated.

Intensive farming: Increases in farm size and technology advances improved the operating efficiency of farms but have led to practices that harm bumble bees: increased use of pesticides, loss of crop diversity resulting in flowering crops being available for only a short time, loss of hedgerows with flowering plants, and loss of legume pastures.

Disease: Pathogens and parasites may pose a threat, although their prevalence and effects in North American bumble bees are not well understood.

Pesticides: The rusty patched bumble bee may be vulnerable to pesticides. Pesticides are used widely on farms and in cities and have both lethal and sublethal toxic effects. Bumble bees can absorb toxins directly through their exoskeleton and through contaminated nectar and pollen. Rusty patched bumble bees nest in the ground and may be susceptible to pesticides that persist in agricultural soils, lawns and turf.

Global climate change: Climate changes that may harm bumble bees include increased temperature and precipitation extremes, increased drought, early snow melt and late frost events. These changes may lead to more exposure to or susceptibility to disease, fewer flowering plants, fewer places for queens to hibernate and nest, less time for foraging due to high temperatures, and asynchronous flowering plant and bumble bee spring emergence.

What is being done to conserve rusty patched bumble bees?

U.S. Fish and Wildlife Service: Several Service programs work to assess, protect, and restore pollinators and their habitats. Also, the Service works with partners to recover endangered and threatened pollinators and pollinator-dependent plants. Concern about pollinator declines prompted formation of the North American Pollinator Protection Campaign, a collaboration of people dedicated to pollinator conservation and education. The Service has a Memorandum of Understanding with the Pollinator Partnership to work together on those goals. The Service is a natural collaborator because our mission is to work with others to conserve, fish, wildlife, and plants and their habitats.

Other Efforts: Trusts, conservancies, restoration groups and partnerships are supporting pollinator initiatives and incorporating native plants that support bees and other pollinators into their current activities. For example, the USDA Natural Resource Conservation Service is working with landowners in Michigan, Minnesota, Montana, North Dakota, South Dakota, and Wisconsin to make bee-friendly conservation improvements to their land. Improvements include the practices of planting cover crops, wildflowers, or native grasses and improved management on grazing lands.

Research: Researchers are studying and monitoring the impacts of GMO crops and certain pesticides on pollinators. Efforts by citizen scientists and researchers to determine the status of declining bee species are underway throughout the United States.

What can I do to help conserve the rusty patched bumble bee?

Garden: Grow a garden or add a flowering tree or shrub to your yard. Even small areas or containers on patios can provide nectar and pollen for native bees.

Native plants: Use native plants in your yard such as lupines, asters, bee balm, native prairie plants and spring ephemerals. Don't forget spring blooming shrubs like ninebark and pussy willow! Avoid invasive non-native plants and remove them if they invade your yard. For more information on attracting native pollinators, visit www.fws.gov/pollinators/pdfs/PollinatorBookletFinalrevWeb.pdf.

Natural landscapes: Provide natural areas - many bumble bees build nests in undisturbed soil, abandoned rodent burrows or grasss clumps. Keep some unmowed, brushy areas and tolerate bumble bee nests if you find them. Reduce tilling soil and mowing where bumble bees might nest. Support natural areas in your community, county and state.

Minimize: Limit the use of pesticides and chemical fertilizer whenever possible or avoid them entirely. Pesticides cause lethal and sublethal effects to bees and other pollinators.

Appendix G – USDA NRCS Farmland Conversion Impact Rating Form AD-1006

Content	Page
USDA Natural Resources Conservation Service Email, Letter, and Form AD-1006 May 11, 2018	G-1 thru G-5
USDA Natural Resources Conservation Service Letter and Form AD-1006 November 14, 2017	G-6 thru G-11

Evan Barrett

From: Nath, Daniel - NRCS, Rochester, MN <daniel.nath@mn.usda.gov>
Sent: Friday, May 11, 2018 1:16 PM
To: Evan Barrett
Cc: Wohlers, Michelle - NRCS, Farmington, MN
Subject: RE: Lake Elmo Airport EA/EAW - Request for Updated Farmland Conversion Impact Rating
Attachments: Farmland Conversion Impact Rating Form AD1006.pdf; Lake_ElmoB.pdf

R. Evan,

Please see the attached revised AD-1006 and response.

Dan Nath, CPSS
USDA/NRCS
Resource Soil Scientist
507 289 7454 x3583
1485 Industrial Dr. NW
Rochester, MN 55901
CR policy

From: Evan Barrett [mailto:Evan.Barrett@meadhunt.com]
Sent: Wednesday, May 09, 2018 8:34 PM
To: Nath, Daniel - NRCS, Rochester, MN <daniel.nath@mn.usda.gov>
Subject: Lake Elmo Airport EA/EAW - Request for Updated Farmland Conversion Impact Rating

Mr. Nath,
Thank you for your attached November 14, 2017, letter enclosing two farmland conversion impact rating forms associated with proposed improvements at Lake Elmo Airport. The Federal Aviation Administration (FAA) and the Metropolitan Airports Commission (MAC) published a Draft EA/EAW for the project on February 26, 2018, which included the findings contained on these forms. The comment period for the Draft EA/EAW closed on April 19, 2018. MAC staff are considering comments received from government agencies and the general public on the Draft EA/EAW as the MAC makes its determination on the need for an EIS under the Minnesota Environmental Policy Act.

In response to the Draft EA/EAW, we received correspondence from the Minnesota Department of Agriculture stating the following:

"The MDA recommends that the EA/EAW address the acreage or impact of severed, triangulated or isolated farmland resulting from the proposed alignment of 30th Street potentially impacting the parcel located in southwest corner of 30th Street and Neal Avenue as indicated in Alternative B. The impact may be farming remnants that are difficult from a practical standpoint. There may be problems of getting to the field and once there, problems of maneuvering farm equipment on the field. Also, smaller fields that are oddly shaped may be less valuable than fields of typical dimension and size. The parcels of farmland should be identified by location and acreage. Any loss of that farmland should be included in the farmland conversion impact rating."

To respond to the MDA's comments, Mead & Hunt has recalculated the Site B acreages in Part III and the Site B site assessment criteria in Part IV on the attached revised Form AD-1006. Below is a summary of the changes Mead & Hunt made to Parts III and VI:

- The total farmland acres to be converted indirectly under Part III have been increased from 7.59 to 28.82. The additional 21.23 acres encompass MAC-owned property currently in agricultural production south of the proposed realigned segment of 30th Street North. This area may not be suitable for row crop production following project implementation per MDA's comment. The area has been added to the indirect farmland impact area shapefile in the zip file attached to this email.
- The site assessment score for criterion 1 (Area in Non-Urban Use) under Part VI has been updated to reflect U.S. Census-designated urbanized areas within a one-mile radius of airport property.
- The site assessment score for criterion 2 (Perimeter in Non-Urban Use) under Part VI has been updated to reflect land use designations depicted on 2016 Baytown Township and West Lakeland Township land use maps.
- The site assessment score for criterion 8 (Creation of Non-Farmable Farmland) under Part VI has been updated to reflect the larger indirect conversion of 28.82 acres.

We request your assistance in re-calculating Parts II, IV, V, and VII for Site B so we may include updated scores in the final EA/EAW. Please complete the form and return to me via e-mail. Feel free to contact me directly if you have any questions regarding the project or the updated Form AD-1006. Thank you for your assistance!

R. Evan Barrett, AICP | Planner, Aviation Services
Mead & Hunt, Inc | 7900 West 78th Street, Suite 370 | Minneapolis, MN 55439
Main: 952-941-5619 | Mobile: 612-597-4262 | Direct: 952-641-8820
evan.barrett@meadhunt.com | www.meadhunt.com

United States Department of Agriculture

Natural Resources Conservation Service
1485 Industrial Dr NW
Rochester, MN 55901

Phone: (507) 289-7454

Fax: (507) 289-3742

May 11th, 2018

R. Evan Barrett, AICP, Mead & Hunt, Inc
7900 West 78th St. Ste. 370
Minneapolis, MN 55439

Re: Farmland Conversion Impact Rating Form for Lake Elmo Airport

Dear Mr. Barrett,

Please see the revised AD-1006 for the Lake Elmo Airport expansion alternative b. Part V has changed along with others as I have received updated information since November.

If you have any questions, please contact me via e-mail or at the above number.

DANIEL NATH Digitally signed by DANIEL NATH
Date: 2018.05.11 13:13:46 -05'00'

Dan Nath, CPSS
Resource Soil Scientist
Rochester, MN

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 5/4/2018	
Name of Project Lake Elmo Airport		Federal Agency Involved Federal Aviation Administration	
Proposed Land Use Public Airport Runway		County and State Washington County, Minnesota	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 5/9/2018	Person Completing Form: D. Nath
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 3,504	Average Farm Size 134
Major Crop(s) Corn, Soybeans	Farmable Land In Govt. Jurisdiction Acres: 66.32 % 179,385	Amount of Farmland As Defined in FPPA Acres: 53.07 % 143,548	
Name of Land Evaluation System Used LE part of LESA	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 5/11/2018	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		42.27		
B. Total Acres To Be Converted Indirectly		28.82		
C. Total Acres In Site		71.09		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland		56.15		
B. Total Acres Statewide Important or Local Important Farmland		0.41		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.0315		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		33.33		
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		75		

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)		8		
2. Perimeter In Non-urban Use	(10)		8		
3. Percent Of Site Being Farmed	(20)		20		
4. Protection Provided By State and Local Government	(20)		0		
5. Distance From Urban Built-up Area	(15)		0		
6. Distance To Urban Support Services	(15)		0		
7. Size Of Present Farm Unit Compared To Average	(10)		10		
8. Creation Of Non-farmable Farmland	(10)		10		
9. Availability Of Farm Support Services	(5)		5		
10. On-Farm Investments	(20)		0		
11. Effects Of Conversion On Farm Support Services	(10)		0		
12. Compatibility With Existing Agricultural Use	(10)		0		
TOTAL SITE ASSESSMENT POINTS	160	0	61	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	0	75	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	61	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	0	136	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

United States Department of Agriculture

Natural Resources Conservation Service
330 Elton Hills Dr NW
Rochester, MN 55901

Phone: (507) 289-7454

Fax: (507) 289-3742

November 14th, 2017

R. Evan Barrett, AICP, Mead & Hunt, Inc
7900 West 78th St. Ste. 370
Minneapolis, MN 55439

Re: Farmland Conversion Impact Rating Form for Lake Elmo Airport

Dear Mr. Barrett,

The purpose of the Farmland Protection Policy Act (FPPA) as you are aware is to minimize the extent that federal programs contribute to the unnecessary and irreversible conversion of prime and important farmland to non-agricultural uses. The FPPA requires federal agencies involved in projects that may convert farmland to determine whether the proposed conversion is consistent with the FPPA.

Upon reviewing the area of this project, I found that there is Prime Farmland in the proposed project area. This project does not qualify for any exemptions. I contacted the national leader of the FPPA in D.C. questioning what level of conversion is considered a conversion under the FPPA. The map provided shows indirect conversion which is considered partial conversion as the area will no longer be used in row crop production, but will be used for hay production.

As per guidance, I am returning two AD1006's. One considers the indirect sites as a conversion, and the other considers the indirect sites as not converted. Attached in the e-mail are shapefiles and below are maps showing the areas adapted from the ones that I received. Please take a look at them and ensure the change in footprint is accurate.

If you have any questions, please contact me via e-mail or at the above number.

DANIEL NATH Digitally signed by DANIEL NATH
Date: 2017.11.14 11:35:09 -06'00'

Dan Nath, CPSS
Resource Soil Scientist, USDA-NRCS
Rochester, MN

United States Department of Agriculture

Natural Resources Conservation Service
330 Elton Hills Dr NW
Rochester, MN 55901

Phone: (507) 289-7454

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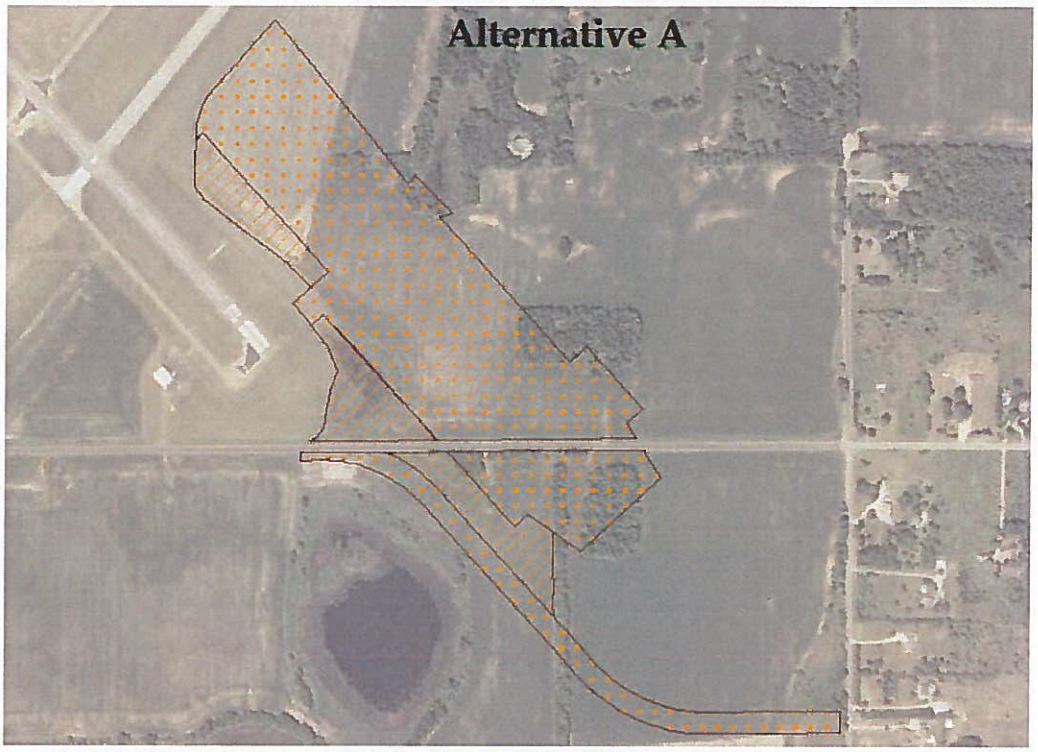

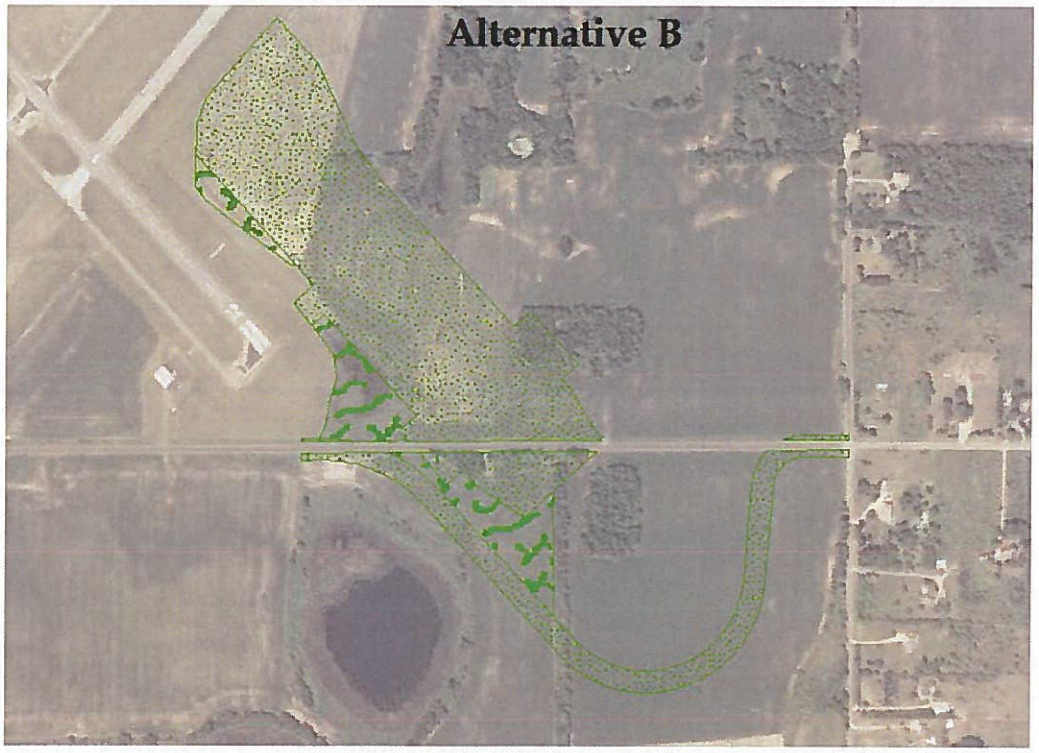

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 10/19/2017	
Name of Project Lake Elmo Airport		Federal Agency Involved Federal Aviation Administration	
Proposed Land Use Public Airport Runway, City/County Designation		County and State Washington County, Minnesota	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 11/2/2017	Person Completing Form: D. Nath
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☐	Acres Irrigated 50,372	Average Farm Size 246
Major Crop(s) Corn, Soybeans	Farmable Land In Govt. Jurisdiction Acres: 66.32 % 179385	Amount of Farmland As Defined in FPPA Acres: 53.07 % 143548	
Name of Land Evaluation System Used LE part of LESA	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 11/14/2017	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	46.45	42.28		
B. Total Acres To Be Converted Indirectly	9.76	7.59		
C. Total Acres In Site	56.21	49.87		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	50.86	49.46		
B. Total Acres Statewide Important or Local Important Farmland	1.32	0.41		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0291	0.0260		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	33.33	33.33		
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	75	77		

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	4	4		
2. Perimeter In Non-urban Use	(10)	0	0		
3. Percent Of Site Being Farmed	(20)	20	20		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	0	0		
6. Distance To Urban Support Services	(15)	0	0		
7. Size Of Present Farm Unit Compared To Average	(10)	10	10		
8. Creation Of Non-farmable Farmland	(10)	5	4		
9. Availability Of Farm Support Services	(5)	5	5		
10. On-Farm Investments	(20)	0	0		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	0	0		
TOTAL SITE ASSESSMENT POINTS	160	44	43	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	75	77	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	44	43	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	119	120	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 10/19/2017	
Name of Project Lake Elmo Airport		Federal Agency Involved Federal Aviation Administration	
Proposed Land Use Public Airport Runway, City/County Designation		County and State Washington County, Minnesota	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 11/2/2017	Person Completing Form: D. Nath
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☐ NO ☐	Acres Irrigated 50,372	Average Farm Size 246
Major Crop(s) Corn, Soybeans	Farmable Land In Govt. Jurisdiction Acres: 66.32 % 179385	Amount of Farmland As Defined in FPPA Acres: 53.07 % 143548	
Name of Land Evaluation System Used LE part of LESA	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 11/14/2017	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	46.45	42.28		
B. Total Acres To Be Converted Indirectly	0	0		
C. Total Acres In Site	46.45	42.28		
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	43.54	41.1		
B. Total Acres Statewide Important or Local Important Farmland	1.32	0.41		
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0250	0.0231		
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	31.63	23.16		
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	79	81		

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	4	4		
2. Perimeter In Non-urban Use	(10)	0	0		
3. Percent Of Site Being Farmed	(20)	20	20		
4. Protection Provided By State and Local Government	(20)	0	0		
5. Distance From Urban Built-up Area	(15)	0	0		
6. Distance To Urban Support Services	(15)	0	0		
7. Size Of Present Farm Unit Compared To Average	(10)	10	10		
8. Creation Of Non-farmable Farmland	(10)	5	4		
9. Availability Of Farm Support Services	(5)	5	5		
10. On-Farm Investments	(20)	0	0		
11. Effects Of Conversion On Farm Support Services	(10)	0	0		
12. Compatibility With Existing Agricultural Use	(10)	0	0		
TOTAL SITE ASSESSMENT POINTS	160	44	43	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	79	81	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	44	43	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	123	124	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

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(For Federal Agency)

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Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

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Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
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$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

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NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix H – Phase I Environmental Site Assessment Report

Content	Page
Phase I Environmental Site Assessment Report September 2017	H-1 thru H-218

Phase I Environmental Site Assessment

Runway 14/32 Relocation and Associated Improvements

Lake Elmo Airport (21D)

3275 Manning Avenue, Box 2
Lake Elmo, MN 55042

Prepared for

Metropolitan Airports Commission

6040 28th Avenue South
Minneapolis, MN 55450-2799

Prepared by

Mead & Hunt

www.meadhunt.com

September 2017

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Summary

Mead & Hunt, Inc. (Mead & Hunt) has completed a Phase I Environmental Site Assessment (ESA), according to American Society for Testing and Materials (ASTM) E 1527-13, for the proposed relocation and extension of the primary runway (Runway 14/32) and associated improvements on Lake Elmo Airport (Airport) property. This ESA was completed as part of a Federal Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA). Mead & Hunt services are authorized by the Metropolitan Airports Commission (MAC), the project sponsor, under Contract No. 111-1-027, Authorization No. 37377 PS. This summary is intended as an overview of the Phase I ESA for the convenience of the reader. The complete report must be reviewed in its entirety prior to making decisions regarding the Airport property.

A. Proposed Project Activities

Owned and operated by the MAC, the Airport is located in Washington County, approximately 12 miles east of the downtown Saint Paul business district. The Airport encompasses approximately 640 acres of land on 14 separate parcels within Baytown and West Lakeland Townships and is roughly bounded by Manning Avenue on the west, the Union Pacific Railroad on the north, Neal Avenue on the east, and 30th Street on the south. The Airport has two paved runways: a primary runway (Runway 14-32) is 2,849 feet long by 75 feet wide, and the crosswind runway (Runway 04-22) is 2,496 feet long by 75 feet wide. A location map illustrating the proposed project area is included in Appendix A.

The project proposes improvement of approximately 142 acres of existing airport property. Improvements include a new runway, extension of existing runways, relocation of 30th Street N., construction of a new connector road, and miscellaneous other airport improvements. Proposed improvements are depicted in Appendix B.

B. Findings

The following finding of an environmental nature associated with the existing Airport property were identified during the Phase I ESA:

- The Baytown Township groundwater, which exists below the Airport, is contaminated. The plume of contaminated groundwater is approximately 5 miles long and covers approximately 7 square miles. The area of the Site includes predominantly low-density residences and agricultural land, but also includes Lake Elmo Airport and parts of the cities of Lake Elmo and Bayport. The primary source of the contamination was a metal working facility that operated from 1940 to 1968 at 11325 Stillwater Boulevard N. in Lake Elmo, which is located within 1 mile to the west of the Airport.[1]

  This Site was listed on the State Superfund Permanent List of Priorities List in 1988 and added to the Federal National Priorities List in 1994. The site has been consistently monitored and regulated since the 1980s. Following an initial Remedial Investigation/Feasibility Study by the

[1] Third Five-Year Review Report For Baytown Township Groundwater Plume Superfund Site Washington County, Minnesota, U.S. Environmental Protection Agency, March 28, 2017. 4.

MAC, the Minnesota Pollution Control Agency (MPCA) identified the primary source area and assumed responsibility for further work at the Site.

Groundwater is located more than 25 feet below the ground surface at the Airport. The dominant groundwater flow direction under the airport is east toward the St. Croix River. The contaminated groundwater plume is located primarily in the Prairie du Chien Aquifer, the Jordan Sandstone Aquifer and, in certain areas, the Tunnel City Aquifer, all located more than 50 feet below the ground surface. The proposed project is not expected to be impacted as a result.

C. Recommendations

Based on this Phase I ESA, Mead & Hunt recommends no additional investigation in regard to the proposed project.

1. Introduction

In 2016, the project sponsor completed a Long-Term Comprehensive Plan (LTCP) for the Airport, which identified key objectives to address failing infrastructure, enhance safety, and improve operational capacity at the Airport. Based on the nature of the proposed actions, implementation of the LTCP requires a Federal EA developed in accordance with Federal Aviation Administration (FAA) policies and procedures detailed in FAA Order 1050.1F (and related documents) for compliance with NEPA and Council on Environmental Quality (CEQ) regulations. Mead & Hunt conducted this Phase I ESA using ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process as part of the EA.

A. Purpose

The purpose of the Phase I ESA is to identify, pursuant to ASTM E 1527-13, *recognized environmental conditions* (RECs) in connection with the property.

ASTM defines the term *recognized environmental condition* as the presence or likely presence of hazardous substances or petroleum products on the property under conditions that are indicative of an existing release, a past release, or a material threat of a release of hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the site. The term does not include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies.

B. Detailed Scope of Services

This ESA was completed in accordance with ASTM International Standard E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, and U.S. Environmental Protection Agency (USEPA) All Appropriate Inquires (AAI) regulations under 40 CFR Part 312.

This report summarizes the results of Mead & Hunt's investigation of the proposed project area, visual non-invasive reconnaissance of the project area and adjoining properties, federal and state database reviews, and interviews, as applicable. Limitations, deviations, and significant gaps (if identified) are evident from reviewing the applicable scope of services and the report text. No other environmental issues will be assessed beyond the scope of ASTM E1527 in connection with this ESA.

C. Proposed Project Actions

The 2016 LTCP recommends implementation of the following proposed project actions:

- Relocate Runway 14/32 by shifting it 615 feet to the northeast and extending it 3,500 feet, including all necessary grading, clearing, and runway lighting.

- Realign 30th Street North around the new Runway 32 Runway Protection Zone (RPZ) and reconnect it to the existing intersection with Neal Avenue.

- Construct a new cross-field taxiway to serve the new Runway 14 end, including taxiway lighting and/or reflectors.

- Convert existing Runway 14/32 to a partial parallel taxiway and construct other taxiways as needed to support the relocated runway, including taxiway lighting and/or reflectors.

- Reconstruct Runway 4/22 and extend it to 2,750 feet, including necessary lighting and taxiway connectors.

- Establish a new non-precision approach to Runway 14 end and upgrade existing Runway 4 approach to RNAV (GPS).

Appendix C illustrates areas of proposed ground-disturbing activities.

D. Significant Assumptions

A significant assumption used in evaluating potential impacts to the subject property is that information acquired from the public record and interviews is accurate and reliable.

E. Limitations and Exceptions

This Phase I ESA was conducted using ASTM E 1527-13. The findings of this report are applicable and representative of conditions encountered at the property on the date of this assessment, and may not represent conditions at a later date.

The review of public records was limited to that information that was available to Mead & Hunt at the time this report was prepared. Interviews with local and state government authorities were limited to those people that Mead & Hunt was able to contact during the preparation of this report. Information was derived from *reasonably ascertainable* and *practically reviewable* sources in compliance with Mead & Hunt's understanding of the standards set forth by ASTM E 1527-13.

The history of the property could not consistently be documented at approximately five-year intervals because standard historical sources with that information were not reasonably ascertainable.

F. Special Terms and Conditions

This Phase I ESA was conducted in accordance with Work Authorization #37633 PS with the MAC, dated March 1, 2017.

G. User Reliance

The resulting report is provided for the sole use of the Airport and its assignees. Use of this report by any third parties will be at such party's sole risk except when granted under written permission by Mead & Hunt. Any such authorized use or reliance by third parties will be subject to the same work authorization under which the work was conducted for the Airport.

Additional party's use and reliance on the report will be subject to the same rights, obligations, and limitations imposed on the MAC by our Work Authorization. However, the total liability of Mead & Hunt to all parties of the Phase I ESA shall be limited to the remedies and amounts as provided in the Work Authorization as a single contract. The additional party's use and reliance on the report shall signify the additional party's agreement to be bound by the proposal and contract that make up the Work Authorization between Mead & Hunt and the MAC.

According to standards set forth by ASTM 1527-13, components of the Phase I ESA will expire 180 days from the date of completion of that component and may therefore require updating if the date of property acquisition exceeds this time period. The dates of completion for pertinent components are as follows:

Component	**Date of Completion**
Site Reconnaissance	May and June 2017
Environmental Database Search	August 2017

2. Physical Setting

This section summarizes the physical environment in which the Airport operates that may be useful in determining potential RECs or the potential hazard posed by identified RECs.

A. Location

Lake Elmo Airport is located in Washington County, approximately 12 miles east of the downtown Saint Paul business district. The Airport encompasses approximately 640 acres of land on 14 separate parcels within Baytown and West Lakeland Townships and is roughly bounded by Manning Avenue on the west, the Union Pacific Railroad on the north, Neal Avenue on the east, and 30th Street on the south.

B. Current Ownership and Use of the Property

The property is currently owned and operated by the MAC. In 2014 the Airport had over 200 based aircraft and accommodated approximately 26,000 total aircraft operations.[2]

C. Site and Vicinity Description

Residences, dating from the late nineteenth century to the 2000s, are adjacent to the airport along with a handful of late-nineteenth-century farmsteads. Three access roads provide entry to the airport: two from Manning Avenue and one from 30th Street. The main access road is located off Manning Avenue and is signed as 33rd Avenue N., in the approximate center of the airport property.

D. Descriptions of Roads, Structures, and Other Improvements on the Site

The airport features two runways: a primary runway (Runway 14-32) extending in a northwest-southeast orientation, and a cross wind runway (Runway 4-22) extending in a northeast-southwest orientation (see Figure 1). Taxiways, lights, and navigational aids are located along both runways.

The airport has approximately 128 hangars in three groups, identified as Hangar Areas 1-3 in Figure 1. Hangar Areas 1 and 2, which consist of historic-age and modern hangars, are located adjacent to Manning Avenue and are separated by 33rd Avenue N. Hangar Area 3 consists of modern hangars, constructed from 1990 to the present, and is located in the northwest quadrant adjacent to the Union Pacific rail line.

Valters Aviation serves as the airport's fixed-base operator (FBO) and is located in a one-story building at the north end of the property near the railroad corridor. The Lake Elmo MAC maintenance building is located at the east end of the airport's main access road, off Manning Avenue. An irregularly shaped one-story building is located southwest of the maintenance building. A one-story maintenance building is located near the southern end of the property and is accessed via 30th Street. Appendix D includes photographs of on-site structures.

[2] Metropolitan Airports Commission, "Lake Elmo Airport 2035 Long Term Comprehensive Plan," i.

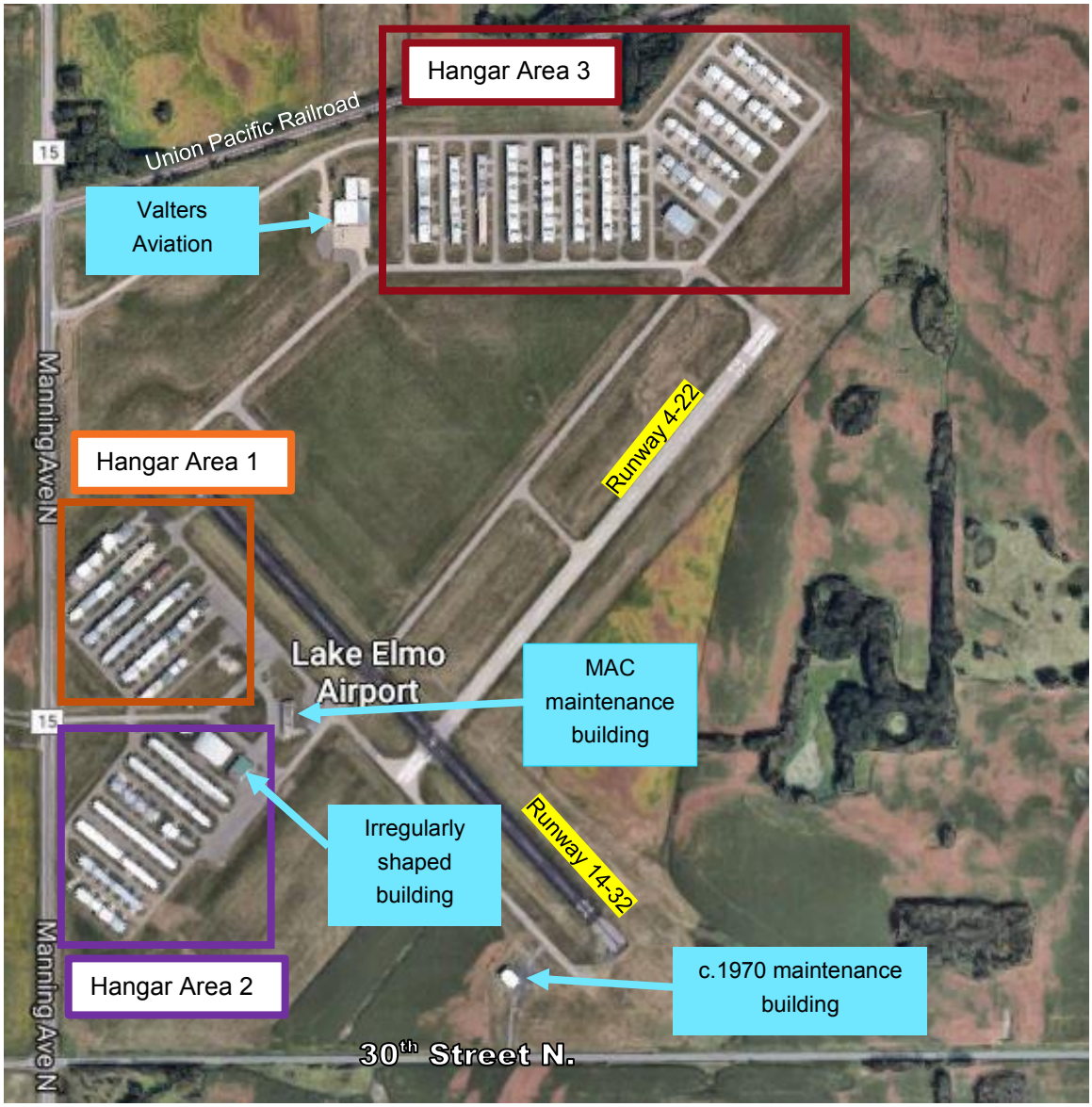


Figure 1. Current aerial of Lake Elmo Airport.

E. Topography

Portions of the Airport property are under row-crop cultivation east of Runway 4/22. Scattered woodlands and wetlands appear in this area. Undeveloped infield areas to the west of Runway 4/22 consist of grasses and forbs mown or hayed on a regular basis. The airfield is generally flat with little elevation change; the eastern side is somewhat higher at approximately 930 feet (NAVD 1988), gently sloping to the west and south to about 920 feet at the Airport entrance on Manning Avenue. See Appendix E for a detailed topographic map.

F. Hydrogeology and Geology

Surface drainage flows generally from northeast to southwest as it moves under 30th Street and Manning Avenue via numerous culverts, and toward Lake Elmo, approximately 1 mile west of the Airport. Within Airport property, the main southerly drainage conveys flows to a depressional shallow marsh wetland and

seasonally flooded basin near the Runway 32 end north of 30th Street. This wetland is connected hydrologically to a larger depressional shallow marsh south of 30th Street via a culvert. The area south of 30th Street is cultivated; however, prior to construction of the road these two wetlands were likely physically connected. A Federal Emergency Management Agency (FEMA) Firmette map indicating the floodplain is included in Appendix F.

Airport lands not in agricultural production are actively managed by regular mowing or periodic haying. On the west side (uncultivated areas) of the Airport most vegetation is dominated by a mix of grasses and forbs consisting of Kentucky blue grass, orchard grass, red clover, common yarrow, milkweed, and Canada thistle. Farm fields on the east side of Runway 4/22 and south of 30th Street were under cultivation. Isolated woodlands and depressional areas appeared undisturbed.

G. Soils Data

Most of the Airport is covered by three soils: well drained Antigo silt loams (0 to 2 percent slopes and 2 to 6 percent slopes) and moderately well drained Crystal Lake silt loam (1 to 3 percent slopes). Typical soil profiles for Antigo silt loams (49 and 49B) show a dark grayish brown (10YR 4/2) silt loam over a brown (10YR 5/3) silt loam. Crystal Lake silt loam (449) also shows a dark grayish brown (10YR 4/2) silt loam in the A horizon; however, underlying this is a light brownish gray (10YR 6/2) silt loam with few fine prominent yellowish red (5YR 4/6) masses of iron accumulation. Antigo silt loams and their minor components are non-hydric while Crystal Lake silt loam contains a minor component, Barronett silt loam at three percent, which is hydric.

Depressional areas are generally covered by hydric soils from the poorly drained Auburndale series and by ponded, very poorly drained Aquolls and Histosols. A very dark grayish brown (10YR 3/2) silt loam covers a grayish brown (10YR 5/2) silt loam with many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in a typical soil profile for the Auburndale series. Areas mapped as Aquolls and Histosols are rated as hydric.

Soils present in the project area are summarized in Table 1 and soils mapping is presented in Appendix G.

Table 1. Summary of Soils Present

Map unit symbol	Map unit name	Soil Unit Component Percentage	Landform	Hydric Status
49	Antigo silt loam, 0 to 2 percent slopes	Antigo/ minor comp. 80/20	Terraces, flats	No
49B	Antigo silt loam, 2 to 6 percent slopes	Antigo/ minor comp. 80/20	Terraces, flats, hillslopes	No
153B	Santiago silt loam, 2 to 6 percent slopes	Santiago/ minor comp. 90/10	Moraines	No
155B	Chetek sandy loam, 0 to 6 percent slopes	Chetek/ minor comp. 90/10	Outwash plains	No
155C	Chetek sandy loam, 6 to 12 percent slopes	Chetek/ minor comp. 90/10	Pitted outwash plains	No

Table 1. Summary of Soils Present

Map unit symbol	Map unit name	Soil Unit Component Percentage	Landform	Hydric Status
155D	Chetek sandy loam, 12 to 25 percent slopes	Chetek/ minor comp. 90/10	Pitted outwash plains	No
189	Auburndale silt loam, 0 to 2 percent slopes	Auburndale/ minor comp. 85/15	Ground moraines	Yes
266	Freer silt loam	Freer/ minor comp. 90/10	Moraines	No
367B	Campia silt loam, 0 to 8 percent slopes	Campia/ minor comp. 90/10	Lake plains	No
449	Crystal Lake silt loam, 1 to 3 percent slopes	Crystal Lake/ minor comp. 90/10	Lake plains	No
452	Comstock silt loam	Comstock/ minor comp. 90/10	Lake plains	No
1055	Aquolls and Histosols, ponded	Histosols/Aquolls 50/50	Depressions on moraines	Yes

3. Site Reconnaissance

Environmental Professionals with Mead & Hunt conducted site reconnaissance in May and June 2017 to observe the current uses of the site, adjoining properties, and properties in the surrounding area, as well as the geologic, hydrogeologic, and topographic conditions of the site and the surrounding area. Photographs were taken of various portions of the subject site to document existing conditions (see Appendix D).

A. Methodology and Limiting Conditions

The property was observed by walking the perimeter and by systematically traversing the project area to provide an overlapping field of view where accessible.

A vehicular tour of the area was made to confirm the nearby land use. The tour involved viewing nearby properties from publicly accessible areas. Observation was limited to areas visible in the line of sight from the subject property or public roadways. Mead & Hunt did not enter adjacent properties.

B. Perimeter Observations

Land south of 30th Street is a mixture of agricultural land and wetland. Some farmsteads existing since at least the 1930s and some rural residential homes built between 1994 and 2003 are present along Manning Avenue south of 30th Street. Similar conditions exist east of Neal Avenue, where cultivated agricultural area and some wetland exists. Rural residential and agrarian land uses are present further east. North of the rail line, rural residences exist both north and south of 40th Street and some light manufacturing and warehousing exist to the northwest. West of Manning Avenue, a new single-family residential development is under construction. Very little to no commercial or non-residential or agricultural land uses exist within one-half mile of the airport property.

No evidence of underground storage tanks (USTs), aboveground storage tanks (ASTs), stained soils, stressed vegetation, landfilling, or foul odors were noted. No pits were identified on the property or immediate vicinity. No monitoring wells were found on the property.

C. On-Site Observations

On-site observations revealed two active fuel locations: one at the MAC maintenance building and one at the Valters Aviation building (see Appendix D for photos of on-site structures). Additionally, several monitoring wells and a used oil facility were located adjacent to the MAC maintenance building. The 1970s maintenance building, located off 30th Street, appears to have once had a fueling operation. Other observations include miscellaneous propane tanks associated with individual hangars, as well as miscellaneous septic tanks associated with individual buildings and hangars.

4. Records Review

A. Historical Use Development of the Airport and Periphery

In 1949 the MAC purchased 160 acres of farmland for development as the Lake Elmo Airport. At its officially opening in 1951, the Airport had two runways: a northwest-southeast 2,300-foot-long paved runway (Runway 13-31, which became Runway 14-32 in 1999), and a northeast-southwest 2,400-foot-long sod runway (Runway 3-21, which became Runway 04-22 in 1999). Not long after its construction, private individuals and small companies began developing hangars and support buildings on-site. Hangars, including the nine original T-hangars, were constructed in Hangar Area 1, off of Manning Avenue (see Figure 1 in Section 2.D).

In 1966 the MAC expanded the Airport by purchasing an additional 470 acres of farmland in Baytown and West Lakeland Townships. The following year it lengthened Runway 13-31 to 2,600 feet and relocated, extended, and paved Runway 3-21 to 2,500 feet.[3] In the coming decade the MAC constructed support buildings, including a maintenance facility and navigational aids. Private hangar and FBO development continued on the west side of the Airport.

By the 1990s development shifted to the northern quadrant of the Airport (Hangar Area 3). Several modern box hangars were built in this area at that time to accommodate growing demand for aircraft storage. Former FBOs dissolved, leaving Mayer Aviation as the sole FBO. The company was subsequently replaced by the current FBO, Valters Aviation, in 2003. The most recent MAC-initiated Airport improvements came in in the early 1990s, when it extended Runway 13-31 to its current length of 2,849 feet.

Today the Airport is one of two airports within Washington County, the other being the Daniel A. DePonti Memorial Airport. The Lake Elmo Airport is used by local businesses, private pilots, and the Civil Air Patrol. It supports 150 buildings and houses 189 aircraft as of October 2016.[4]

(1) Aerial Photographs

Aerial photography taken between 1938 and 2015 was reviewed to observe previous conditions and development of the property, as well as immediately adjacent properties. Images are included in Appendix H.

The earliest photograph of the area, taken in 1938, shows the general vicinity of the Airport mostly under cultivation, with Manning Avenue, 30th Street, and the railroad in their current configuration. Several farmsteads are located around the perimeter of present-day Airport property, located primarily south of 30th Street or north of the railroad. Two farmsteads were present at the northwest corner of the 30th Street and Neal Avenue intersection in 1938. These farmsteads were present in 1964 but abandoned by 1992, and reversion to forest had nearly closed the tree canopy in these locations.

[3] Metropolitan Airports Commission, "Lake Elmo Airport 2035 Long Term Comprehensive Plan," 1–4.

[4] Goodman, "Historic Airports in Washington County," 8.

The Airport was constructed around 1951-1952 and, with the exception of the airfield area (located near the intersection of Manning Avenue and 30th Street), the surrounding lands remained largely in agricultural production in 1953. By 1957 hangars were being developed on the west side of the Airport with further hangar development seen in 1964, at which point the current configuration of runways and taxiways was all but set.

Between 1964 and 1992 development occurred to the north of 40th Street and south of 30th Street. The north side hangar development was well under way by the early 1990s and largely built out by 1992.

The pattern of agricultural use, both row cropping and forage production, in areas east of the airfield and south of 30th Street within Airport property, observed since the airport's construction, continues to the present and reflects conditions encountered at the time of field work in 2017.

(2) Land Use

Washington County has adopted an overlay district for the Airport to control the type and extent of land development adjacent to and near the Airport. In general, the surrounding land uses are compatible with the Airport. Historical and existing land use is primarily agricultural. There has been residential development in recent years that is getting closer to Airport property, most recently the development of the agricultural property directly to the west of the airport with approximately 320 single-family residential homes at a density of approximately 2 to 2.5 units per acre. Other developing areas are primarily single-family estate (residential) with 16 dwelling units per 40 acres.[5]

By 1992 development north of 40th Street included some light manufacturing and warehousing as well as a gas station on the corner of Stillwater Boulevard and Manning Avenue. Little to no other types of land use development (e.g., commercial, industrial, office) have been observed around the immediate vicinity of the airport.

B. Standard Environmental Record Sources

Previously reported hazardous materials sites were identified based on a review of federal and state agency records and online databases for potential hazardous materials contamination sites in accordance with ASTM standards. The following databases were searched:

- Minnesota Pollution Control Agency
  - Closed Landfill Program
    - https://www.pca.state.mn.us/waste/closed-landfill-program
  - Storage tanks
    - https://www.pca.state.mn.us/waste/storage-tanks
  - Wastewater data browser
    - https://www.pca.state.mn.us/data/wastewater-data-browser
  - What's in My Neighborhood
    - https://www.pca.state.mn.us/data/whats-my-neighborhood

[5] Metropolitan Airports Commission, "Lake Elmo Airport 2035 Long Term Comprehensive Plan," 2–19.

- Envirofacts, U.S. Environmental Protection Agency
  - https://oaspub.epa.gov/enviro/enviroFACTS.quickstart?ve=11,45.004043,-92.879780&pSearch=Lake%20Elmo,%20Minnesota&miny=44.95709000000008&minx=-92.92677999999998&maxy=45.05109000000007&maxx=-92.83277999999999

- Washington County, Minnesota, Hazardous Waste
  - https://www.co.washington.mn.us/621/Hazardous-Waste

The following findings are based on data obtained from regulatory database searches and reviews of other available information. Federal and state database searches returned 14 records associated with parcels located on or within one-quarter mile of the Airport. Records for sites within one-quarter mile include registered ASTs and USTs, hazardous waste generators, brownfield sites, and stormwater permit sites. An additional three records within one mile of the Airport were determined to be outside of the project area and, based on the type of record, are not expected to be of significance for this report. A list of sites identified is included in Table 2. A corresponding map is included in Appendix I. Available site reports are provided in Appendix J.

Table 2. Sites Located Within the Vicinity of Proposed Project Activities

Site Number	Type	Status	Search Radius	Reference
1	Sewage Treatment Facility – Municipal SDS Permit	Active	0.5 mi	Bay-Lake Reserve WWTP
2	Construction Stormwater Permit	Active	0.25 mi	Heritage Farm
3	Hazardous Waste	Inactive	Target Property	MAC – Lake Elmo Airport
	Industrial Stormwater Permit	Inactive		
	Industrial Stormwater Permit	Active		
	Aboveground Storage Tanks	Active		
	Underground Storage Tanks	Active		
4	Hazardous Waste	Inactive	Target Property	Valters Aviation Inc.
	Petroleum Leak Site	Inactive		
5	Underground Storage Tanks	Inactive	Target Property	Valters Aviation
6	Brownfield Investigation and Cleanup	Active	0.25 mi	Village Park Preserve
7	Construction Stormwater Permit	Inactive	Target Property	2009 Lake Elmo Airport Pavement Rehab
8	Industrial Stormwater Permit	Inactive	Target Property	Lake Elmo Airport
9	Hazardous Waste	Inactive	Target Property	Hangar 27E at Lake Elmo
10	Industrial Stormwater Permit	Active	Target Property	Valters Aviation Service Station Inc.
	Industrial Stormwater Permit	Inactive		
11	Hazardous Waste	Active	Target Property	Walters Aviation
12	Petroleum Brownfield Investigation and Cleanup	Inactive	0.25 mi	River Country Coop Holiday
	Petroleum Remediation Leak Site	Inactive		

Table 2. Sites Located Within the Vicinity of Proposed Project Activities

Site Number	Type	Status	Search Radius	Reference
	Underground Storage Tanks	Active		
13	Underground Storage Tanks	Inactive	0.25 mi	Abandoned Gas Station
14	Underground Storage Tanks	Inactive	0.25 mi	Abandoned Service Station
15	Brownfield Investigation and Cleanup	Inactive	0.5 mi	Bruggeman
	Brownfield Investigation and Cleanup	Active		
	Brownfield Investigation and Cleanup	Active		
16	Stormwater Construction (Closed Landfill)	Inactive	1 mi	Washington County Landfill
17	Groundwater Contamination	Active	Target Property	Baytown Township GW Contamination Site

5. Interviews

A. Interview with Owner

An interview was conducted the with the Airport maintenance manager. He confirmed the source of groundwater contamination to be known to be off-site. He also provided a history of some of the previous FBO's on site but did not identify any other potentially hazardous materials concerns associated with those FBO's or other sites. An interview memorandum is provided in Appendix K.

B. Interview with Occupants

The owner of Site 9 was interviewed regarding their hazardous waste permit. According to the owner, the permit was required when they purchased the site, which contained several barrels of used aluminum surface materials they were required to dispose of. The site was thus listed as a one-time generator. See Section 6.A for more information.

C. Interview with Local Government Officials

No individual local government officials were interviewed as no record results were determined to warrant additional information from local officials.

D. Interviews with Others

Interviews with individuals at the MPCA were conducted relating to individual site records. Aside from brief information provided on Site 4 (see Section 6), no information other than that readily obtainable through the online database was provided, so interview memorandums are not included in Appendix K.

6. Evaluation

A. Findings

The Phase I ESA was completed in accordance with ASTM International Standard E1527, Standard Practice for *Environmental Site Assessments: Phase I Environmental Site Assessment Process* and USEPA AAI regulations under 40 CFR Part 312. This report summarizes the results of Mead & Hunt's investigation of the subject property and database review. No other environmental issues are assessed beyond the scope of ASTM E1527 in connection with this Phase I ESA.

Findings are listed below by site. Each site listed is an individual database record. Multiple records may exist for one location, for instance the general Airport property. However, each site was evaluated individually.

Site 1, Bay-Lake Reserve WWTP, is a domestic influent waste monitoring station with a State Disposal System permit. The site location is more than one-half mile from any proposed project activities. While this site is regulated, it has no records of previously reported hazardous materials incidents. No evidence of contamination from the site was identified. Therefore, no additional investigations are warranted at this location.

Site 2 is listed as an active construction stormwater permit site for agricultural operations. The permit was issued in the late 1990s for creation of a pond on-site. Stormwater permits are required to control erosion and limit pollution (e.g., runoff of sediment) during and after construction. While this site is regulated, it has no records of previously reported hazardous materials incidents and is not expected to be impacted by proposed project activities. No evidence of contamination from the site was identified. Therefore, no additional investigations are warranted at this location.

Site 3 is the MAC – Lake Elmo Airport. The site is listed for hazardous waste generation (inactive), an inactive industrial stormwater permit, an active stormwater permit, and both inactive and active ASTs and USTs. The inactive tanks were removed in the 1980s. The active tanks are a 2,500-gallon underground diesel tank and a 250-gallon aboveground used oil tank. Locations of these tanks can be seen in the photos in Appendix D. Monitoring stations surrounding these tank locations are also visible in the photos. This site is regulated and has no records of previously reported hazardous materials incidents. It is not expected to be impacted by proposed project activities. No evidence of contamination from the site was identified. Therefore, no additional investigations are warranted at this location.

Site 4, Valters Aviation, is listed as inactive for hazardous waste and an inactive petroleum remediation leak site. According to an interview with Stacy VanPatten with the MPCA, this site was closed in 1993 after remediation consisting of soil extraction and thermal treatment. The exact location could not be determined. This site has been closed and cleanup of the leak was completed. Residual contamination is not expected at this site, so no additional investigations are warranted at this location.

Site 5, Valters Aviation, is listed with USTs. The record indicates that two 4,000-gallon underground gasoline tanks were removed in 1995 and one 10,000-gallon underground tank containing aviation

gasoline remains active on site. It is assumed this tank is located on the terminal ramp adjacent to the Valters Aviation building, as seen in the site photos in Appendix D. This site is regulated and has no records of previously reported hazardous materials incidents. It is not expected to be impacted by proposed project activities. No evidence of contamination from the site was identified. Therefore, no additional investigations are warranted at this location.

Site 6 is the active Village Park Preserve Voluntary Brownfield Investigation and Cleanup site located within one-quarter mile to the west of the Airport. Voluntary sites are non-petroleum sites. This site was investigated and closed in 2014 for the purposes of sale, financing, or redevelopment. This site is regulated and has no records of previously reported hazardous materials incidents. It is not expected to be impacted by proposed project activities. No evidence of contamination from the site was identified. Therefore, no additional investigations are warranted at this location.

Site 7 is listed for a Construction Stormwater Permit for the 2009 pavement rehabilitation project at the Airport. The site is currently inactive. No additional investigations are warranted for this site.

Site 8 is the Lake Elmo Airport, which is listed as an Inactive Industrial Stormwater Permit for monitoring effluent from airport maintenance activities (e.g., runoff of de-icing materials). This site is regulated and no specific evidence of contamination from the site was identified. Therefore, no additional investigations are warranted for this site.

Site 9 is listed as an inactive hazardous waste site for Hanger 27E. A permit was obtained at the time of sale in regard to disposal of used surfacing materials containing aluminum. The permit was required and listed the site as a one-time generator. No additional hazardous materials concerns are associated with this site, and no evidence of contamination from the site was identified. Therefore, no additional investigations are warranted for this site.

Site 10 is Valters Aviation and corresponds with Sites 4 and 5. This site is listed as both active and inactive Industrial Stormwater Permits. The active permit is for monitoring effluent from airport maintenance activities (e.g., runoff of de-icing materials). This site is regulated and no specific evidence of contamination from the site was identified. Therefore, no additional investigations are warranted for this site.

Site 11 contains an active Hazardous Waste Generator, listed as Walters Aviation. Hazardous waste includes substances that are corrosive, explosive, toxic, and-or fire hazards. Very Small Quantity Generators produce 220 pounds or less of hazardous waste, and less than 2.2 pounds of acute hazardous waste per month. Businesses in this classification require a license. This site is regulated and no specific evidence of contamination from the site was identified. Therefore, no additional investigations are warranted for this site.

Sites 12 – 14 are associated with an active gas station located within one-quarter mile to the northwest of the Airport. This site contains six active USTs containing gasoline and diesel. No issues associated with the active tanks has been reported. This site also contains records for an inactive Petroleum Remediation Leak Site and a Petroleum Brownfield Investigation and Cleanup from a previous UST leak.

The previous leak was closed in 2001 after more than 10 years of remediation and investigation. The record of the leak, associated with sites 12-14, is located more than one-quarter mile from any proposed project activities. While it may be a potential source of contamination, there is no evidence that contamination from the site has extended beyond the parcel boundary. Based on the current project activities, no additional work is warranted.

Site 15, Bruggeman, is a Brownfield Investigation and Cleanup site located within one-half mile west of the Airport. Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers, or local governments to voluntarily investigate and clean up land for sale, financing, or redevelopment. Bruggeman is a non-petroleum brownfield site associated with current and future residential development. No additional hazardous materials concerns are associated with this site, and no evidence of contamination from the site was identified. Therefore, no additional investigations are warranted for this site.

Site 16 is associated with the closed Washington County Landfill site located more than 2 miles west of the Airport. This site is monitored for residual groundwater contamination which extends to within one mile of the Airport. Due to the depth of groundwater at the Airport, this site is not expected to pose a concern for proposed project activities. Therefore, no additional investigations are warranted for this site.

Site 17 is listed as the Baytown Groundwater Contamination site, which covers the Airport. The site federally regulated Superfund Site consists of a contaminated groundwater plume covering about 7 square miles, including the Airport. A former metal working facility located more than a mile west of the Airport, in the city of Lake Elmo, is the primary source of the site's contamination. Treatment of private and public drinking water, source area treatment, and groundwater monitoring are ongoing.

According to the USEPA's Third Five-Year Review Report (see Appendix J) dated March 2017, Trichloroethylene (TCE) was found in groundwater in the area of the Lake Elmo Airport at concentrations up to 138 micrograms per liter (pg/L) in the Prairie du Chien Dolomite aquifer and up to 62 pg/L in the Jordan Sandstone aquifer. TCE was also found in residential drinking water wells, including at concentrations up to 86 pg/L in a residential well located approximately 700 feet east of the Airport. These levels exceeded the State drinking water standards and the Federal Maximum Contaminant Level (MCL) and present an unacceptable risk to those using groundwater as a source of drinking water. The Record of Decision (ROD) also documented the presence of low levels of carbon tetrachloride (CCl4) in groundwater at the Site.

In 2015 the MPCA investigated potential vapor intrusion risk of the site with the most potential for vapor intrusion risk. Two soil gas surveys, one located in the city of Bayport and one area located near the Airport, found very low levels of several volatile contaminants, which is common in many developed areas. However, the sampling confirmed that none exceeded MPCA or USEPA health-based screening levels for residential properties.

The Airport is located at approximately elevation 920 to 930. According to the USEPA's report, groundwater is located at approximately elevation 875 to 885 in the area of the Airport. Furthermore, the Prairie du Chien Aquifer, the highest elevation of the contaminated aquifers, is located at a depth of

approximately elevation 850. Proposed project activities are not expected to reach a depth that would encounter groundwater. While the site poses potentially hazardous materials concerns for vapor intrusion, the site is regulated and monitored and recent sampling has confirmed that no volatile contaminants have exceeded State or Federal health-based screening levels. Previous Airport development has not been precluded as a result of known contamination. Therefore, no additional investigation is warranted.

B. Data Gaps

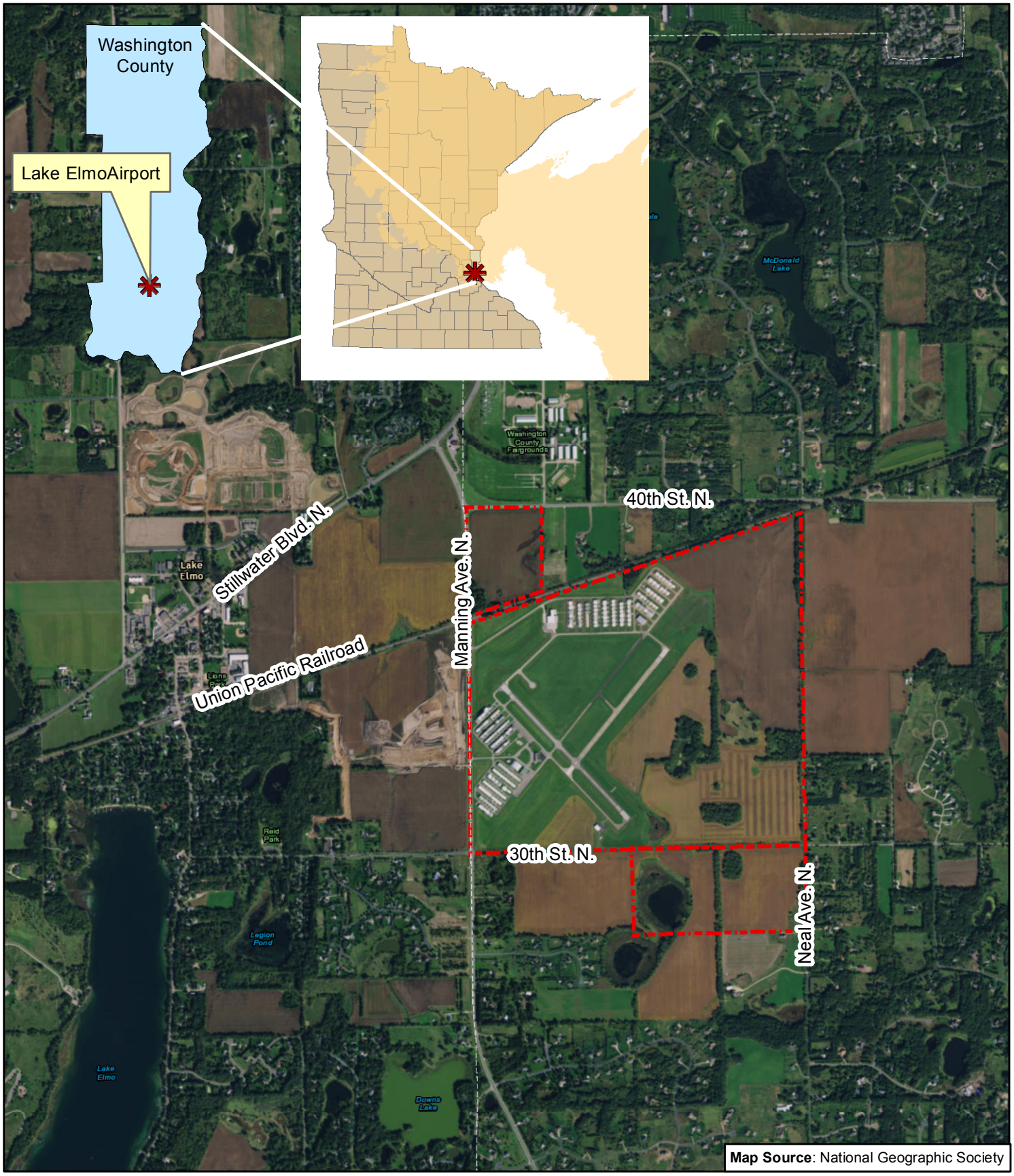
Historical sources were not reviewed in five-year intervals because the sources to achieve that level of documentation were not readily available. However, given the consistent land use between the available sources, this data gap is not considered to be significant.

7. Conclusions & Recommendations

Mead & Hunt has performed a Phase I ESA of the Lake Elmo Airport property located in Washington County, Minnesota, in conformance with our understanding of the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in Section 1.D of this report. This assessment has revealed evidence of RECs in connection with the subject property.

Based upon information provided, and proposed project activities, Mead & Hunt recommends that no further environmental assessments are warranted.

Appendix A. Project Location Map



Project Location

LAKE ELMO AIRPORT
Proposed Runway 14/32 Relocation
and Associated Improvements

Legend

Airport Boundary

LRR Subregion: K

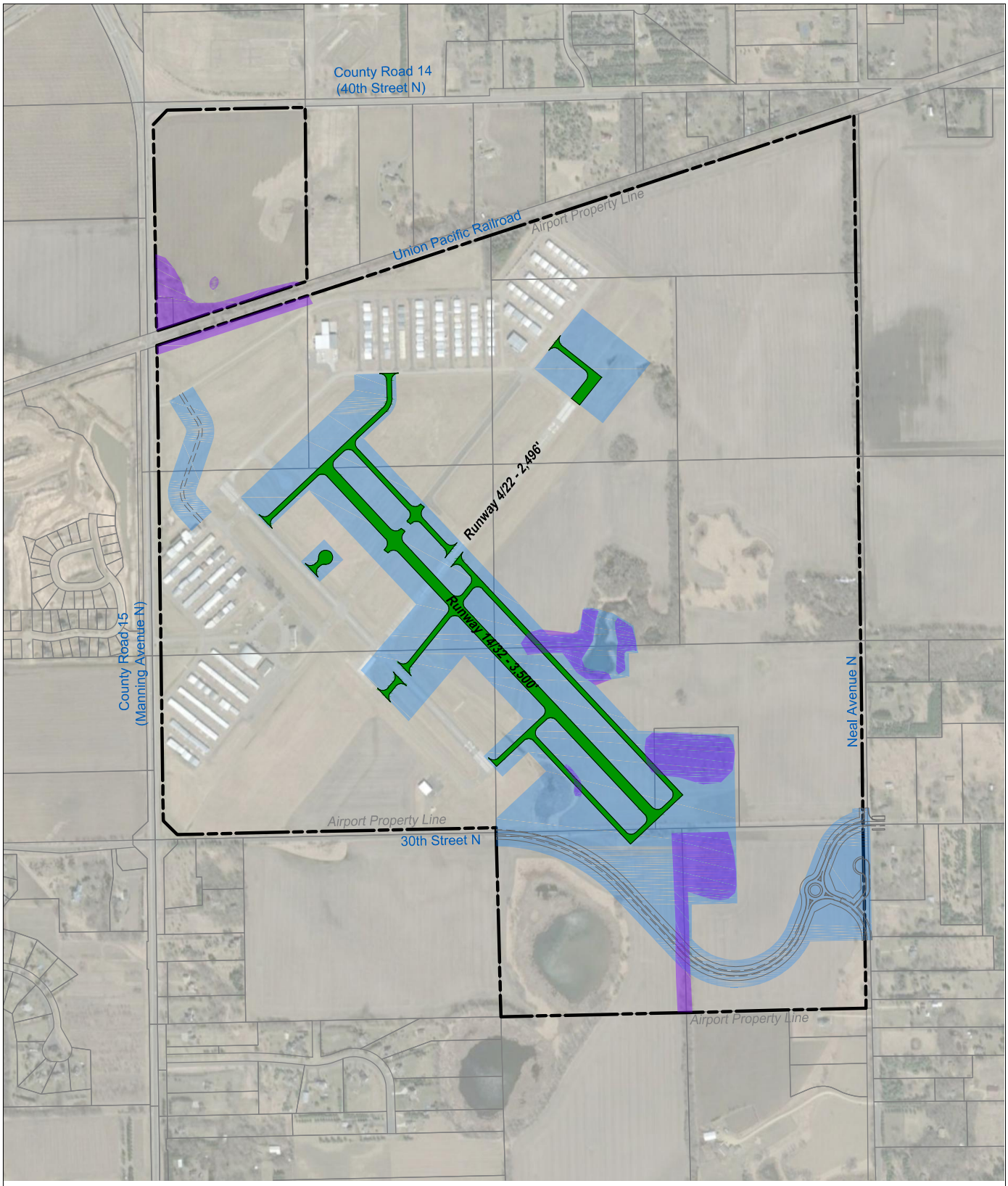
0.25 0.125 0 0.25 0.5 Miles

N

Project Location

T29N, R20W, S18 and S19
Baytown and West Lakeland Townships
Washington County, MN
LRR Subregion: K
USACE Regional Supplement: NC/NE
Area = 130.1 acres

Appendix B. Proposed Project Activities Exhibit



LAKE ELMO AIRPORT
AIRFIELD IMPROVEMENTS

PROJECT AREA

2838700-161542.02
07/13/2017

Mead & Hunt

EXHIBIT 1

7/25/2017 2:38:28 PM
X:\2838700\161542.02\TECHNREPORTS\CULTURAL\MAPS\OVERALL AIRPORT EXHIBIT.DWG

Appendix C. Area of Ground Disturbance Exhibit

SERVICE ROAD

CONNECTOR ROAD

COUNTY ROAD 15 (MANNING AVENUE N)

NEAL AVENUE N

254'

RWY 4-22 2496' 5'

RWY 14-32

RWY 14-32 3500' 5'

30

30

0 300 600

N

LAKE ELMO AIRPORT

AREAS OF GROUND DISTURBANCE

2838700-161542.01
01/10/2017

EXHIBIT 1

1/ /2017 4:57:50 PM
X:\2838700\161542.011\TECH\CAD\GROUND DISTURBANCE EXHIBIT.DWG

Appendix D. Photographs of On-site Structures

Union Pacific Railroad at intersection with Manning Avenue N.

Union Pacific Railroad at intersection with 40th Street N.

Valters Aviation Building, view facing northeast.

UST and fuel pump at Valters Aviation Building.

c.1980 Lake Elmo MAC maintenance building, view facing southeast.

Diesel fuel pump and UST at MAC Maintenance Building.

Monitoring wells adjacent to MAC maintenance building and Diesel UST.

Used Oil Facility adjacent to MAC Maintenance Building.

c.1960 irregularly shaped building, possibly a former FBO building, view facing west.

c.1970 south maintenance building, view facing southwest.

Historic-age T-hangar, view facing south.

Historic-age Box and Quonset hangars, view facing south.

Historic-age Quonset hangars, view facing southwest.

Large c.1970 Quonset Hangar, view facing north.

Modern box hangars, view facing southeast.

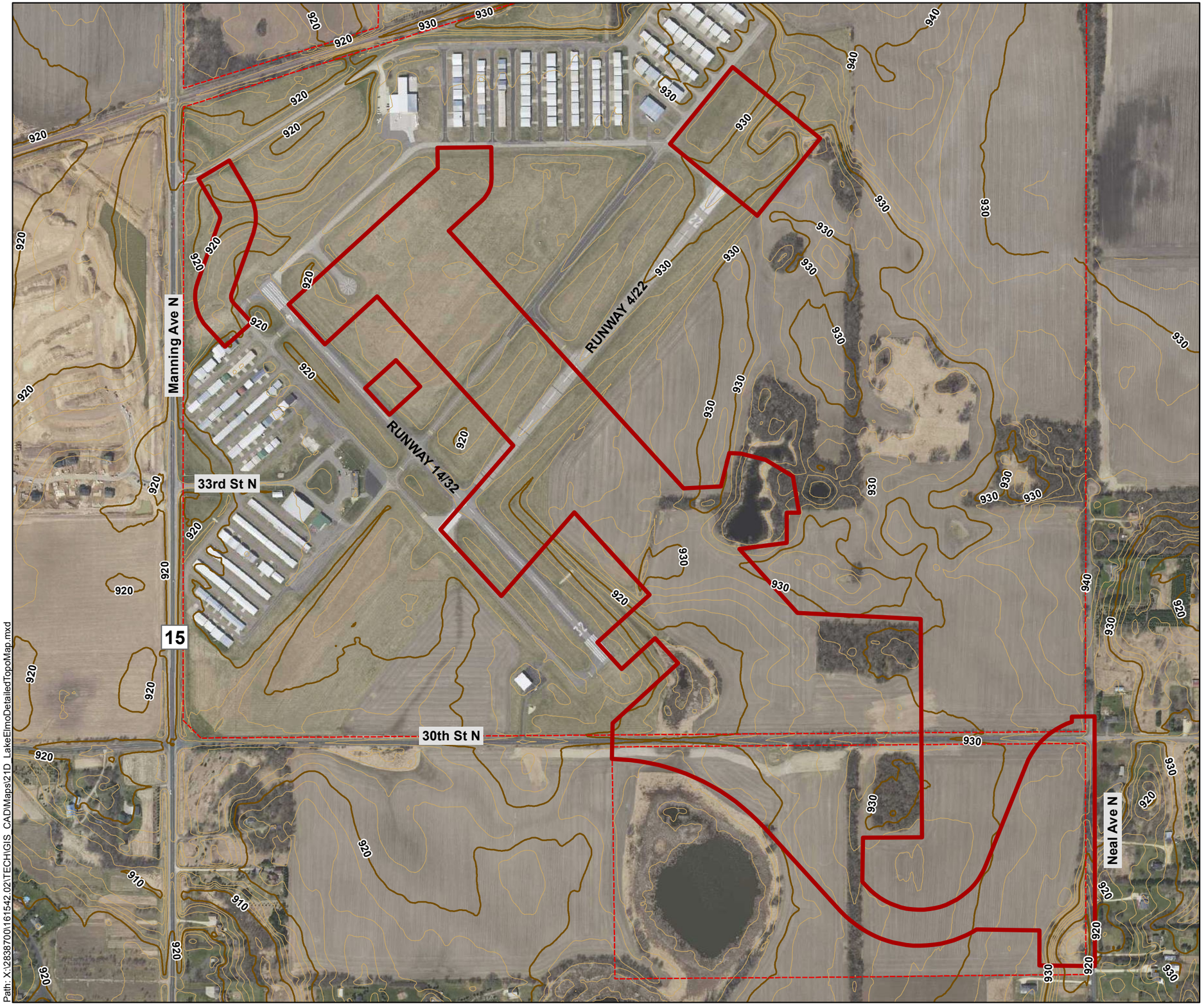
Modern box hangar, view facing southwest.

Appendix E. Topography Map

Detailed Topography Map

LAKE ELMO AIRPORT

Proposed Runway 14-32 Runway Shift



Legend

- Area of Interest
- Airport Property Boundary

Contour Elevation

- Index Contour
- Intermediate Contour

N

0 150 300 600 900 1,200 Feet

Note: Contour interval is 2 feet.

Project Information

T29N, R20W, S18 and S19
City of Lake Elmo
Washington County, MN
Area of Interest = 130.1 acres
Field work conducted:
June 5 - 9, 2017

Image Source: MnGEO WMS Image Service, Washington County (2016 color 7-county)

Contour Source:
Minnesota Geospatial Commons,
Minnesota Elevation Mapping Project
Twin Cities Metro Region 2011

Mead & Hunt

Path: X:\283870\161542.02\TECH\GIS_CADMaps\21D_LakeElmoDetailedTopoMap.mxd

Appendix F. FEMA Floodplain Map

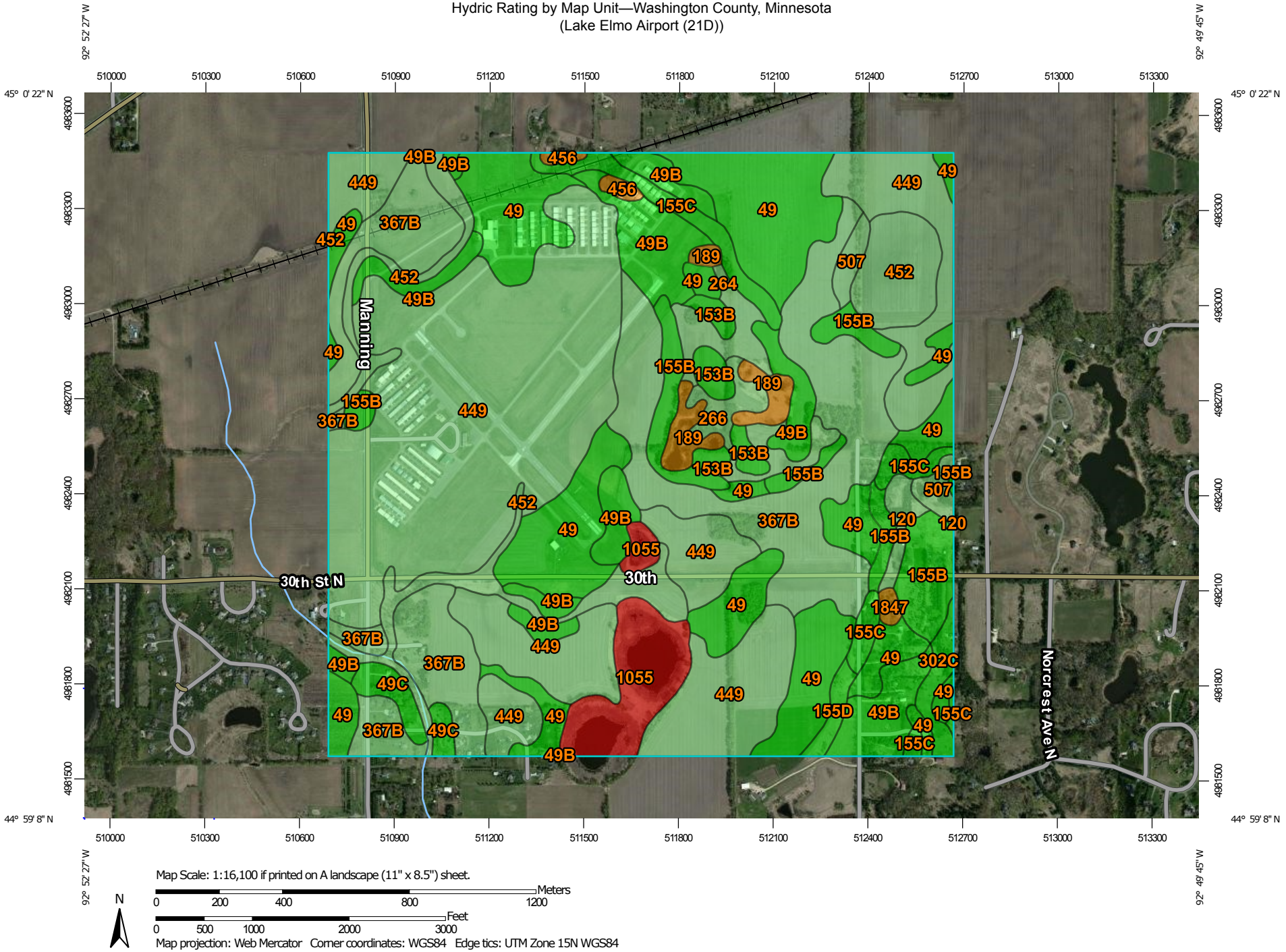
FEMA's National Flood Hazard Layer (Official)

Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available: http://tinyurl.com/j4xwp5e

USGS The National Map: Orthoimagery | National Geospatial-Intelligence Agency (NGA); Delta State University; Esri | Print here instead: http://tinyurl.com/j4xwp5e Support: FEMAMapSpecialist@riskmapcds.com | USGS The National Map: Orthoimagery

Appendix G. NRCS Soils Data

Hydric Rating by Map Unit—Washington County, Minnesota
(Lake Elmo Airport (21D))



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Minnesota
Survey Area Data: Version 11, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2012—Apr 26, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Washington County, Minnesota (MN163)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
49	Antigo silt loam, 0 to 2 percent slopes	0	166.4	17.8%
49B	Antigo silt loam, 2 to 6 percent slopes	0	68.2	7.3%
49C	Antigo silt loam, 6 to 15 percent slopes	0	8.9	1.0%
120	Brill silt loam	5	5.4	0.6%
153B	Santiago silt loam, 2 to 6 percent slopes	0	11.3	1.2%
155B	Chetek sandy loam, 0 to 6 percent slopes	0	39.3	4.2%
155C	Chetek sandy loam, 6 to 12 percent slopes	0	21.7	2.3%
155D	Chetek sandy loam, 12 to 25 percent slopes	0	4.2	0.5%
189	Auburndale silt loam, 0 to 2 percent slopes	95	12.5	1.3%
264	Freeon silt loam, 2 to 6 percent slopes	3	11.0	1.2%
266	Freer silt loam	5	14.2	1.5%
302C	Rosholt sandy loam, 6 to 15 percent slopes	0	6.6	0.7%
367B	Campia silt loam, 0 to 8 percent slopes	2	147.0	15.7%
449	Crystal Lake silt loam, 1 to 3 percent slopes	3	320.6	34.3%
452	Comstock silt loam	4	53.9	5.8%
456	Barronett silt loam	92	2.8	0.3%
507	Poskin silt loam	3	8.3	0.9%
1055	Aquolls and Histosols, ponded	100	31.4	3.4%
1847	Barronett silt loam, sandy substratum	90	1.7	0.2%
Totals for Area of Interest			**935.5**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

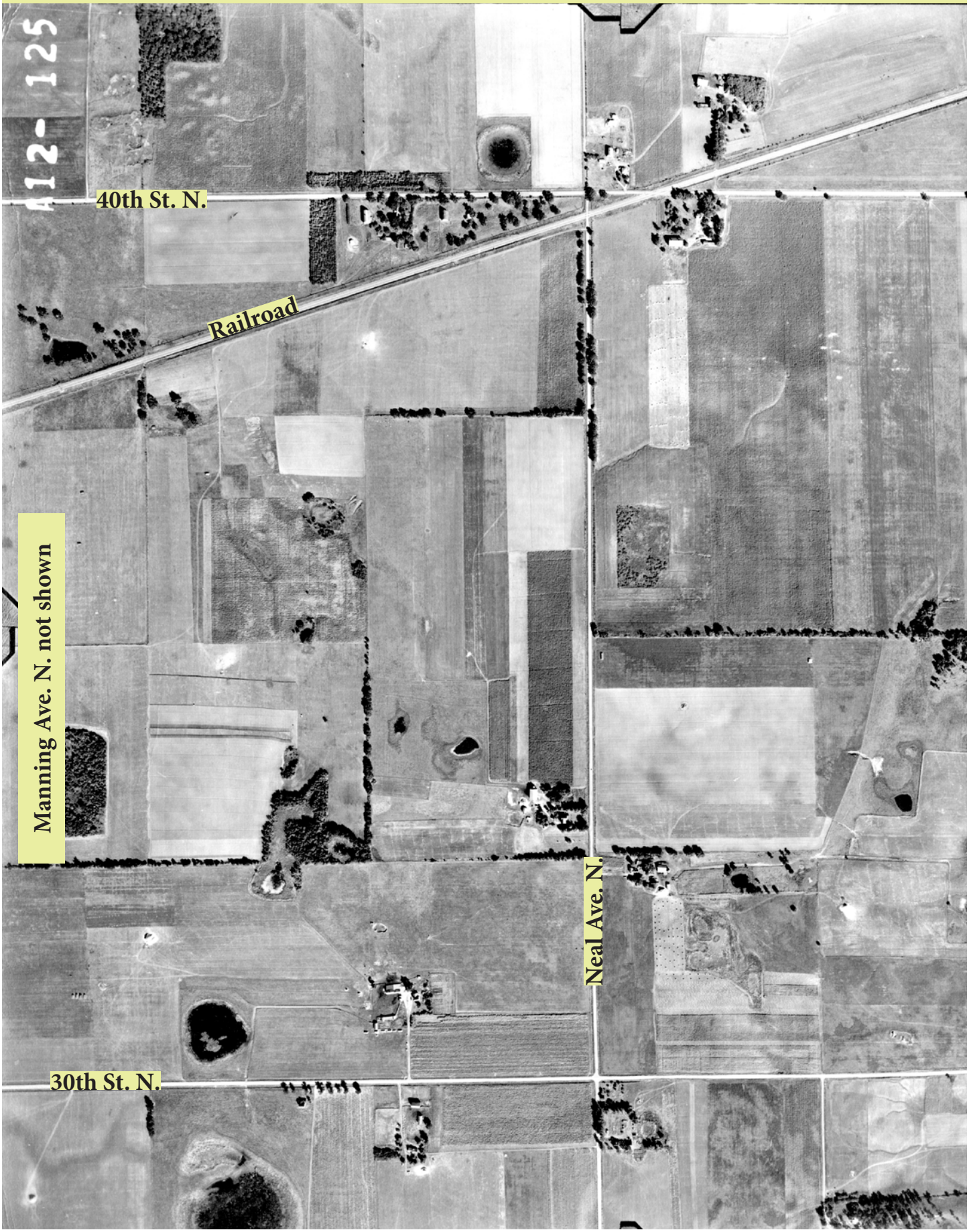
Component Percent Cutoff: None Specified

Tie-break Rule: Lower

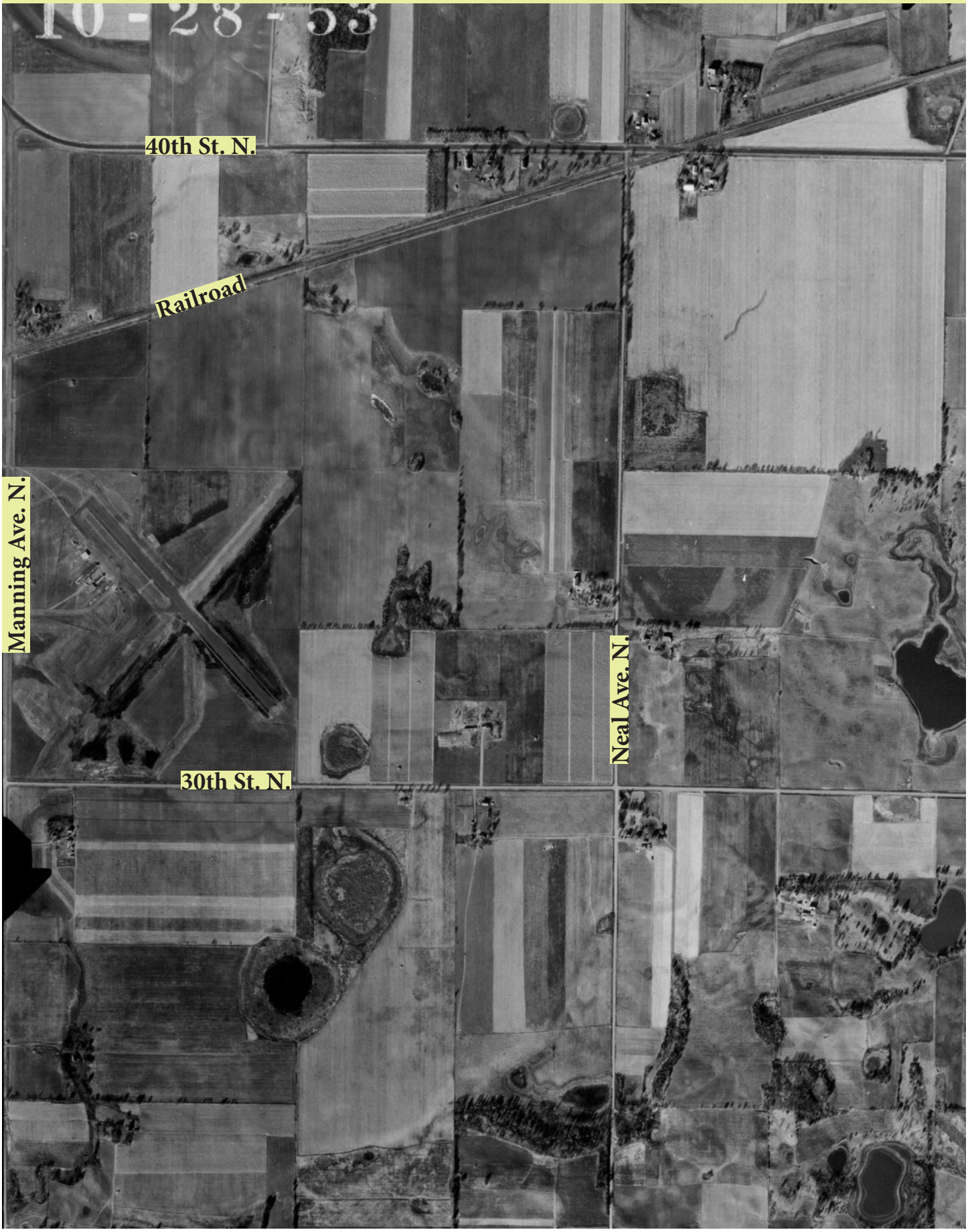
Appendix H. Historic Aerials

1938

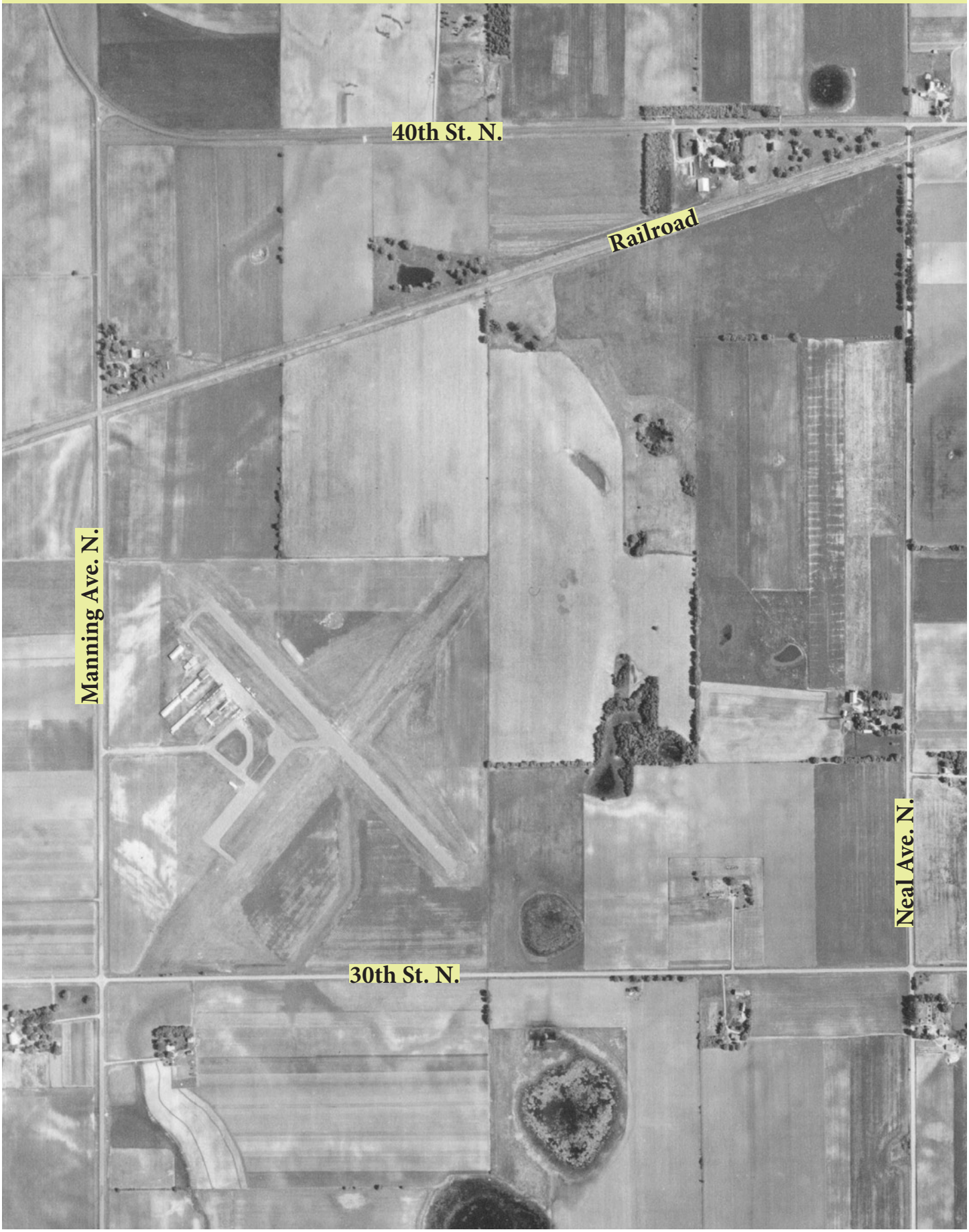
1945


A12- 125
40th St. N.
Railroad
Manning Ave. N. not shown
Neal Ave. N.
30th St. N.

1953

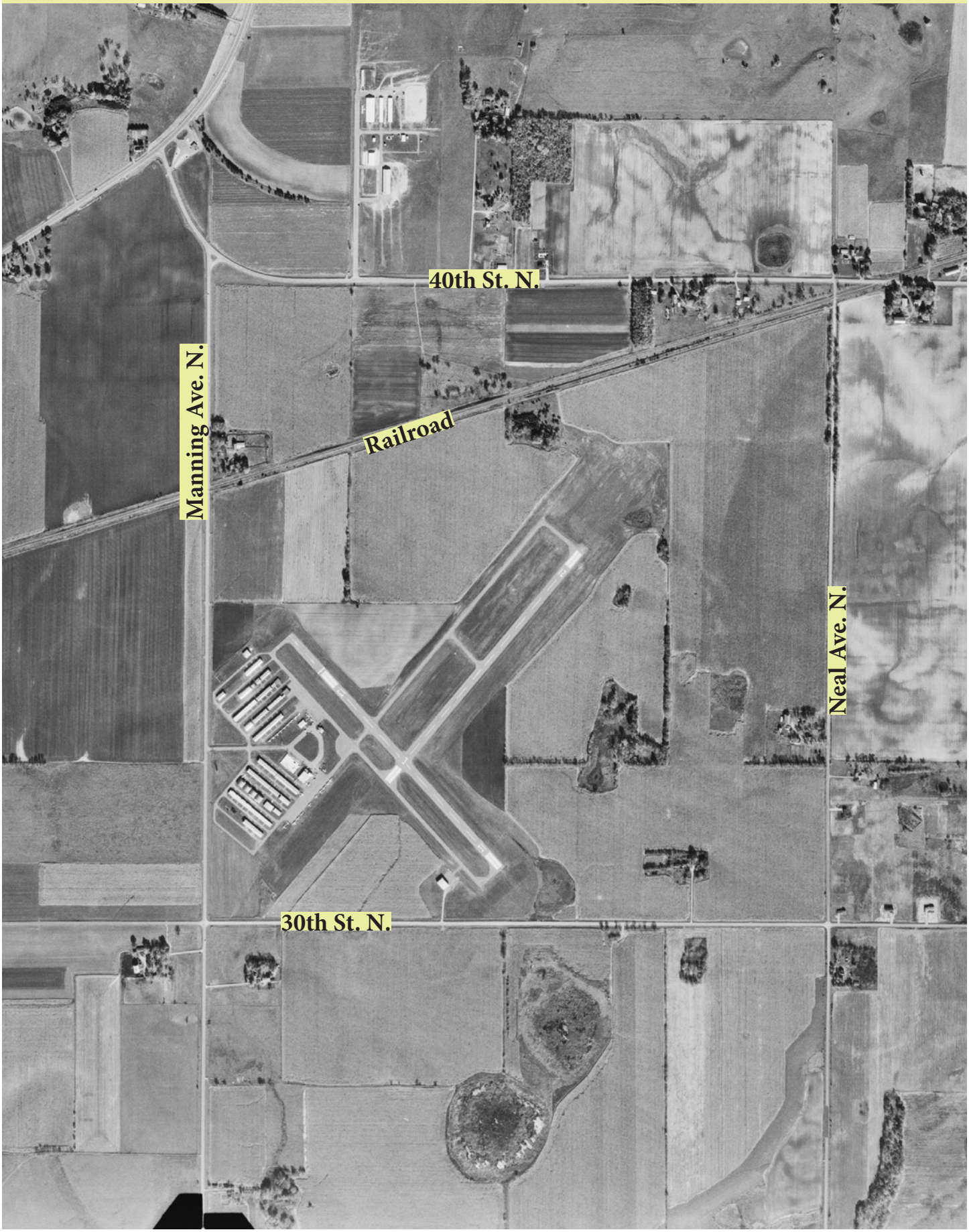


1957



1964

1972

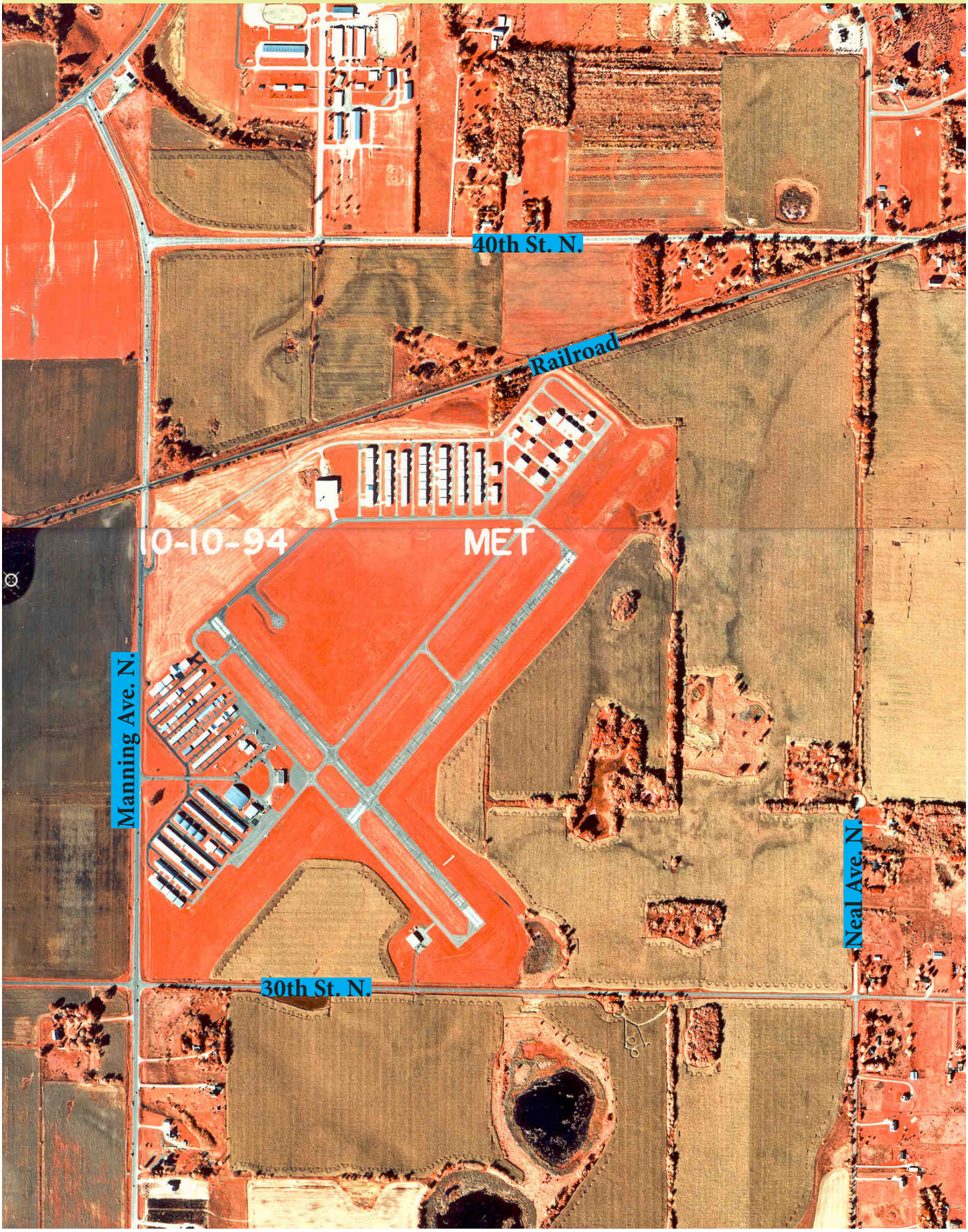


1980

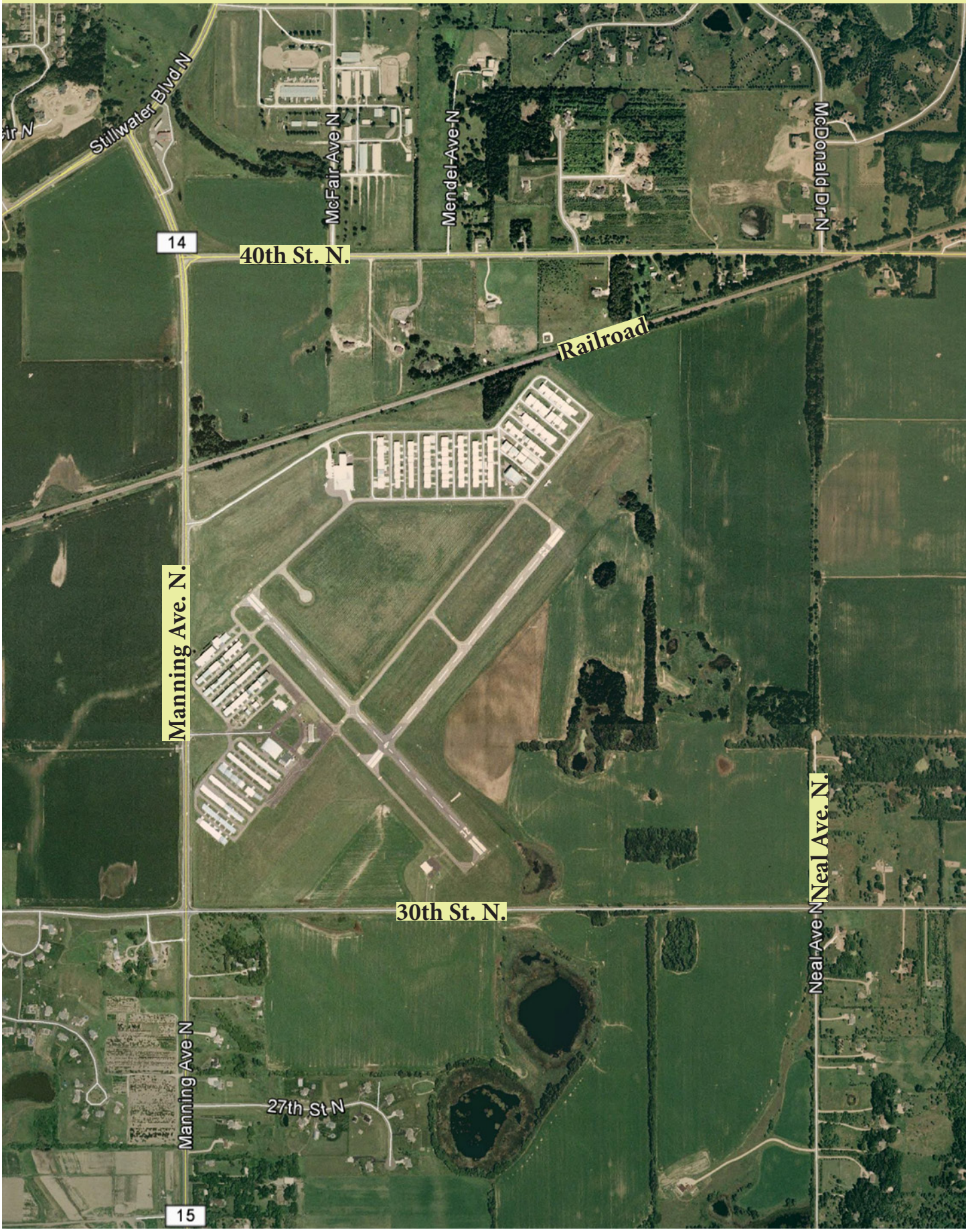
1992


Stillwater Blvd N
McFair Ave N
Mendel Ave N
McDonald Dr N
14
40th St N
40th St. N.
Manning Ave. N.
Railroad
Neal Ave. N.
30th St. N.
Neal Ave N
Manning Ave N
27th St N
15

1994


40th St. N.
Railroad
10-10-94
MET
Manning Ave. N.
Neal Ave. N.
30th St. N.

2003


Stillwater Blvd N
McFair Ave N
Mendel Ave N
McDonald Dr N
14
40th St. N.
Railroad
Manning Ave. N.
Neal Ave. N.
30th St. N.
Neal Ave N
Manning Ave N
27th St N
15

2006


44th St N
Stillwater Blvd N
McFair Ave N
Mendel Ave N
McDonald Dr N
14
40th St. N.
Railroad
Manning Ave. N.
30th St. N.
Neal Ave. N.
Manning Ave N
27th St N
15

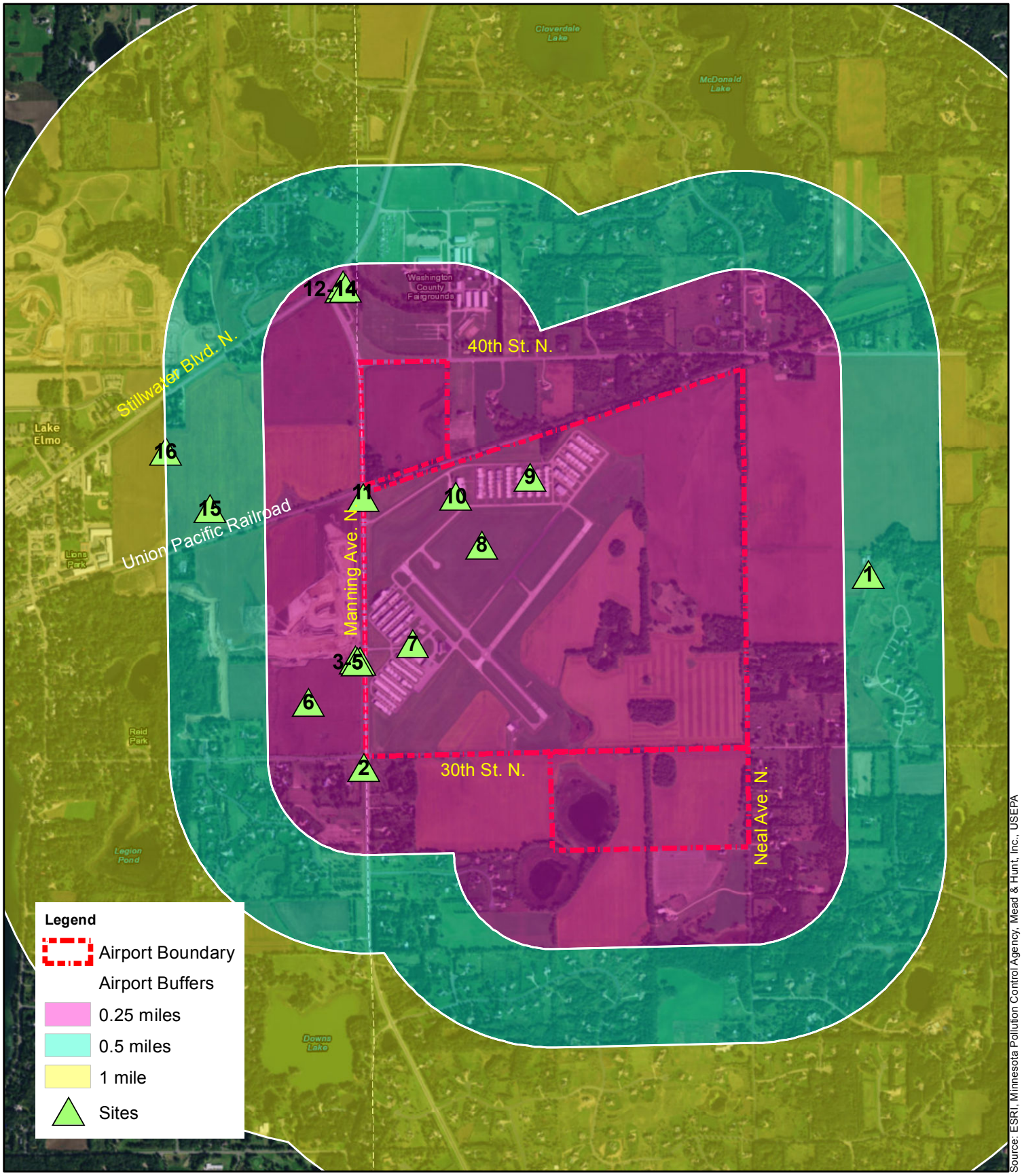
2010


44th St N
Stillwater Blvd N
McFair Ave N
Mendel Ave N
McDonald Dr N
14
40th St. N.
Railroad
Manning Ave. N.
Neal Ave. N.
30th St. N.
Manning Ave N
Neal Ave N
27th St N
15

2015


44th St N
McDonald Dr Ct N
Little Bluestem Trn
5
McFair Ave N
Mendel Ave N
McDonald Dr N
40th St. N.
14
Railroad
Manning Ave. N.
15
30th St. N.
Neal Ave. N.
Neal Ave N
Manning Ave N
27th St N

Appendix I. Potentially Hazardous Materials Sites Map



Potenially Hazardous Materials Site Locations

LAKE ELMO AIRPORT

Proposed Runway 14/32 Relocation and Associated Improvements

0.25 0.125 0 0.25 0.5 Miles

N

Project Location

T29N, R20W, S18 and S19
Baytown and West Lakeland Townships
Washington County, MN
LRR Subregion: K
USACE Regional Supplement: NC/NE
Area = 130.1 acres

Appendix J. Database Search Results: Site Reports

Site 1

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Bay Lake Reserve WWTP

Location:	3280 Norman Ave N Stillwater, MN 55082 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99895
Longitude:	-92.83670
Coordinate Collection Method:	Address Matching House Number
Currently Active?	Yes
Industry Classification:	Sewage Treatment Facilities
Institutional controls:	No

Search w

Activity Overview

Water Quality

Wastewater - MN0067164 - Municipal SDS Permit

Bay Lake Reserve WWTP

Status: Active

Municipal wastewater facilities primarily process wastewater from sewage. These include city wastewater treatment, sanitary districts, wayside rest areas, national or state parks, mobile home parks, and resorts. Facilities that discharge directly to surface water require a NPDES/SDS permit, whereas those that do not may require an SDS permit.

Events

Event	Start	End
Administrative Change	10/01/2015	12/31/2023
Permit Reissuance	07/31/2013	09/30/2015
Permit Issuance	06/18/2004	07/30/2013

Inspections

Inspection Type	Inspection Date
WW Compliance Evaluation Inspection	12/10/2015
WW Compliance Evaluation Inspection	07/10/2008
WW Compliance Evaluation Inspection	05/23/2006
WW Compliance Evaluation Inspection	08/25/2005
WW Compliance Evaluation Inspection	05/11/2004

Enforcement Activities

Case Type	Net Penalty	Discovery Date	Action Date	Closure Date
Letter of Warning	None	03/07/2014	03/01/2016	04/15/2016
APO - Nonforgivable	$1,250	05/11/2004	06/11/2004	07/07/2004

Links to Additional Data Sources

- Wastewater data browser

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Kaitlin Jamieson	651-757-2306	Wastewater Compliance Staff

Alternate Name

Alternate Name or ID	Description
95803	MPCA Agency Interest ID
MN0067164	Wastewater Permit Number

Owners

Owner or Primary Contact:

Bay Lake Reserve Homeowner's Association

Tony Grosso

Former Owner or Primary Contact:

Bay Lake Baytown LLC

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 2

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Heritage Farm

Location:	30th St N & Manning Ave Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99210
Longitude:	-92.86289
Coordinate Collection Method:	Address Matching House Number
Currently Active?	Yes
Institutional controls:	No

Search w

Activity Overview

Stormwater

Construction Stormwater - C00004457

Heritage Farm

Status: Active

When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, streams and wetlands. Stormwater permit requirements are designed to control erosion and limit pollution during and after construction.

Events

Event	Start	End
Coverage Issuance	07/08/1997	08/01/2018

Links to Additional Data Sources

- CSW Online Permit Data - CSC00004457

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Rachel Parlin	651-757-2118	Const Stormwater Data Management

Alternate Name

Alternate Name or ID	Description
C00004457	Construction Stormwater Preferred ID
5768	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Donna Herzfeld

Herzfeld Inc

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Minnesota Pollution Control Agency

21-Aug-17

Donna Herzfeld,Herzfeld Inc
15050 30th St N
Stillwater, MN 55082

RE: NPDES/SDS General Stormwater Permit for Construction Activity (MNR100001) Application
Permit ID Number: C00004457
Project Name: Heritage Farm

The Heritage Farm Protection CSW project has been granted coverage by the Minnesota Pollution Control Agency (MPCA) under the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Stormwater Permit (Permit) for Construction Activity. Permit coverage is effective for this project on Fri Sep 04, 1998.

You are required to comply with the terms of the Permit to prevent erosion and control sediment from your site with the procedures established in your Stormwater Pollution Prevention Plan (SWPPP). You are also required to upgrade your SWPPP and erosion prevention and sediment control Best Management Practices (BMPs) as site and weather conditions dictate throughout the entire term of the project.

Once all construction activity has been completed at this project, you must submit a Notice of Termination (NOT) form to the MPCA within 30 days of meeting the conditions outlined in Part II (C) of the permit. Please check the MPCA website (http://www.pca.state.mn.us/water/stormwater) or call to request an NOT form and fact sheet.

Please save this letter for your records. If you have any questions about permit coverage for this project, please contact the Construction Stormwater Program at 651-757-2119 or toll free at 800-657-3804.

Site 3

EPA United States Environmental Protection Agency

Envirofacts

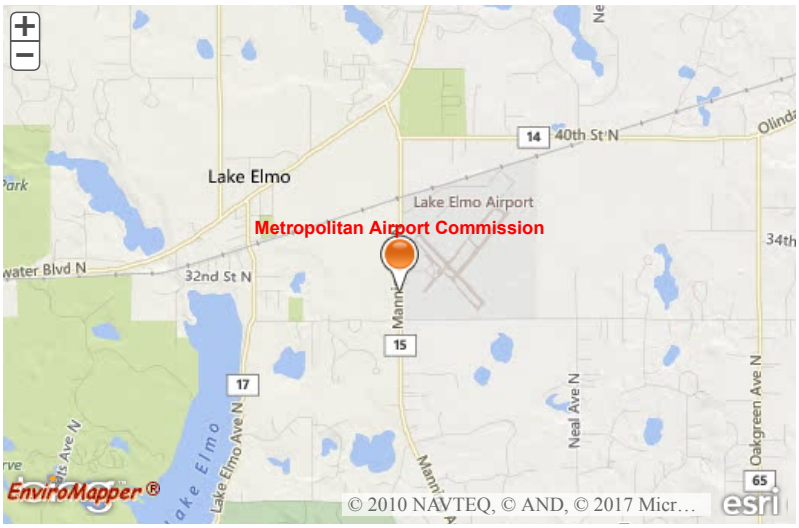
Search Results

METROPOLITAN AIRPORT COMMISSION
3275 MANNING AVE N
LAKE ELMO, MN 55042-9681

Multisystem Links

- EF Overview
- Search
- Model
- Contact Us

Report an Error



**You can navigate within the map with your mouse.*

EPA Facility Information

This query was executed on AUG-18-2017

RCRAInfo

HANDLER ID: MN0000448662

LIST OF NAICS CODES AND DESCRIPTIONS

NAICS CODE	NAICS DESCRIPTION
481111	SCHEDULED PASSENGER AIR TRANSPORTATION

HANDLER / FACILITY CLASSIFICATION

HANDLER TYPE	LAND DISPOSAL	INCINERATOR	BOILER AND OR INDUSTRIAL FURNACE	STORAGE	TREATMENT

HANDLER TYPE
Not in a universe

No Process Information is available for the facility listed above.

Additional Information can be obtained from Resource Conservation and Recovery Information RCRAInfo Search.

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

MAC - Lake Elmo Airport

Location:	3275 Manning Ave N Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99599
Longitude:	-92.86326
Coordinate Collection Method:	Address Matching House Number
Currently Active?	Yes
Industry Classification:	Scheduled Passenger Air Transportation
Institutional controls:	No

Search w

Activity Overview

Hazardous Waste

Hazardous Waste - MN0000448662

MAC - Lake Elmo Airport

Status: Inactive

Events

Event	Start	End
Notif of Regulated Waste	05/18/2017	

Links to Additional Data Sources

- HW Generator License Application Data - MN0000448662

Stormwater

Industrial Stormwater - A00000138

MAC - Lake Elmo Airport

Status: Inactive

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Events

Event	Start	End
Coverage Reissuance	05/08/2002	04/05/2010
Coverage Issuance	06/11/1999	04/05/2010

Links to Additional Data Sources

- ISW Online Permit Data - A00000138

Industrial Stormwater - MNR0539X5

MAC - Lake Elmo Airport

Status: Active
At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Events

Event	Start	End
Administrative Change	12/09/2015	04/05/2020
Coverage Issuance	04/05/2015	12/08/2015

Links to Additional Data Sources

- ISW Online Permit Data - MNR0539X5

Tanks

Aboveground Tanks - TS0004289

MAC - Lake Elmo Airport

Status: Active
An aboveground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Events

Event	Start	End
Registration Received	02/08/1993	02/08/1993

Inspections

Inspection Type	Inspection Date
AT Inspection	12/19/2012
AT Inspection	12/22/2009
AT Inspection	08/21/2006

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Underground Tanks - TS0004289

MAC - Lake Elmo Airport

Status: Active

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Events

Event	Start	End
UST Ten-Day Adv Notice	05/04/2000	
Registration Received	09/11/1991	09/11/1991
Registration Received	05/07/1986	05/07/1986

Inspections

Inspection Type	Inspection Date
UT Inspection	04/27/2016
UT Inspection	12/19/2012
UT Inspection	12/22/2009
UT Inspection	08/21/2006

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Chris Bashor	651-757-2215	Aboveground Tanks Compliance Staff
Regina Small	651-757-2382	Hazardous Waste Data Management
Melissa Wenzel	651-757-2816	Ind Stormwater Compliance Staff
Rachel Parlin	651-757-2118	Ind Stormwater Data Management
Jacob Mueller	651-757-2862	Underground Tanks Compliance Staff

Alternate Name

Alternate Name or ID	Description
MN0000448662	Hazardous Waste Preferred ID
A00000138	Industrial Stormwater Preferred ID
MNR0539X5	Industrial Stormwater Preferred ID
8039	MPCA Agency Interest ID
TS0004289	Underground Tanks Preferred ID

Owners

Owner or Primary Contact:

Met Council Environmental Services

Metropolitan Airports Commission

Former Owner or Primary Contact:

Dick Keinz

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Related Topics: Envirofacts

FRS

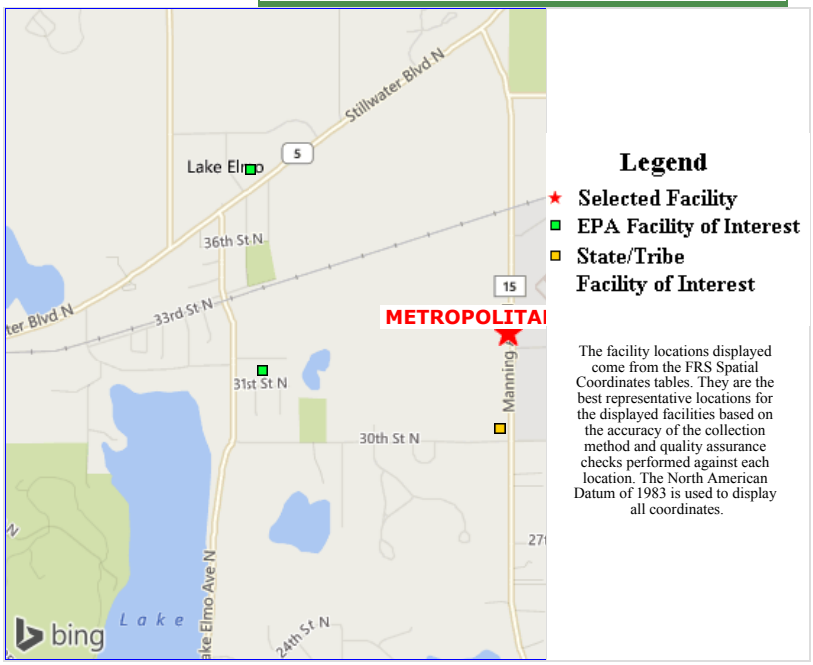
FRS Facility Detail Report

METROPOLITAN AIRPORT COMMISSION

EPA Registry Id:
110008823880
3275 MANNING AVE N
LAKE ELMO, MN
55042-9681

Facilty Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model



Environmental Interests

Information System	System Facility Name	Information System Id/Report Link	Environmental Interest Type	Data Source	La Up Da
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	MAC LAKE ELMO AIRPORT	MN0000448662	UNSPECIFIED UNIVERSE (N)	RCRAINFO	10/
MINNESOTA - PERMITTING, COMPLIANCE, AND ENFORCEMENT INFORMATION MANAGEMENT SYSTEM	MAC - LAKE ELMO AIRPORT	8039	STATE MASTER	MN-TEMPO	

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Facility Coordinates Viewer Environmental Justice Map Viewer Watershed R

Standard Industrial Classification Codes (SIC)

Data Source	SIC Code	Description	Primary
MN-TEMPO	4512	AIR TRANSPORTATION, SCHEDULED	

Facility Codes and Flags

EPA Region:	05
Duns Number:	
Congressional District Number:	04
Legislative District Number:	56
HUC Code/Watershed:	07030005 / LOWER ST. CROIX
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Alternative Names

Alternative Name	Source of Data
MAC LAKE ELMO AIRPORT	NOTIFICATION (RCRA)

Organizations

No Organizations returned.

National Industry Classification Syst

Data Source	NAICS Code	Description
RCRAINFO	481111	SCHEDULED PASSENGER AIR
MN-TEMPO	481111	SCHEDULED PASSENGER AIR

Facility Mailing Addre

Affiliation Type	Delivery Point	City N
FACILITY MAILING ADDRESS	3275 MANNING AVE N	LAKE

Contacts

Affiliation Type	Full Name	Office Phone
REGULATORY CONTACT	GREG FRIES	6512244306

Query executed on: AUG-18-2017

Last updated on September 24, 2015

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

12/09/2015

Jeff Nawrocki

N/A, N/A N/A

RE: NPDES/SDS Industrial Stormwater General Permit Application
Permit ID Number: MNR0539X5
Facility Name: MAC - Lake Elmo Airport
Facility Address: 3275 Manning Ave N Lake Elmo, MN 55042

Dear ,

The Minnesota Pollution Control Agency (MPCA) has received and approved your application for permit authorization for industrial stormwater.

Industrial Activities authorized under this permit

Industrial Activity	Industrial Subsector	Industrial Sector
4581 Airports, Flying Fields, and Airport Terminal Services	S2 Airports using < 100,000 gal. glycol-based de/anti-icing chemicals and/or annual. Avg.of < 100 tons urea.	S Air Transportation Facilities
4581 Airports, Flying Fields, and Airport Terminal Services (S2)	S2 Airports using < 100,000 gal. glycol-based de/anti-icing chemicals and/or annual. Avg.of < 100 tons urea.	S Air Transportation Facilities

Read and follow all applicable permit requirements. For a copy of the permit in its entirety go to: www.pca.state.mn.us/industrialstormwater/. There is also additional information about the Industrial Stormwater Multi-Sector General Permit including Frequently Asked Questions, a SWPPP template and checklist, the BMP Guidebook, the Sampling Guidance Manual, and many more guidance materials there.

If you have questions contact the Industrial Stormwater Program by email: iswprogram.pca@state.mn.us or call the Stormwater Hotline at 651-757-2119 or 800-657-3804 (non-metro only).

MINNESOTA POLLUTION CONTROL AGENCY

Leaks and tanks site dashboard

New search

MAC - Lake Elmo Airport

Site ID	TS0004289
Location	3275 Manning Ave N Lake Elmo, Minnesota 55042 Washington County
Tank Count	4 tanks are (or were) located at this site.

Tank number	Install date	Registration date	Tank capacity	Tank status	Stored product	Above or underground
001	01/01/1976	05/07/1986	2000	Removed	Diesel	Underground
002	01/01/1976	05/07/1986	2000	Removed	Gasoline	Underground
003	09/11/1991	09/11/1991	2500	Active	Diesel	Underground
1001	11/01/1992	02/08/1993	250	Active	Used Oil	Aboveground

Site 4

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Valters Aviation Inc

Location:	3275 Manning Ave N Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99599
Longitude:	-92.86328
Coordinate Collection Method:	Address Matching House Number
Currently Active?	No
Industry Classification:	Other Support Activities for Air Transportation
Institutional controls:	No

Search w

Activity Overview

Hazardous Waste

Hazardous Waste - MND077629509

Valters Aviation Inc

Status: Inactive

Events

Event	Start	End
Notif of Regulated Waste	05/18/2017	

Links to Additional Data Sources

- HW Generator License Application Data - MND077629509

Investigation and Cleanup

Petroleum Remediation - LS0004513 - Leak Site

Valters Aviation Inc

Status: Inactive

Leak sites are locations where a release of petroleum products has occurred from a tank system. Leak sites can occur from aboveground or underground tank systems as well as from spills at tank facilities.

Events

Event	Start	End
General Information Reviewed	01/13/1993	01/15/1993
Site Closed	01/13/1993	01/15/1993
Thermal Treatment Soil Batch Approved	09/16/1992	09/16/1992
Excavation Report Reviewed	03/12/1992	03/13/1992
Soil Corrective Action Plan Reviewed	03/12/1992	03/13/1992
Responsible Party Determined	09/19/1991	09/19/1991
Standard Letter Issued	09/19/1991	09/19/1991
Leak Reported	09/11/1991	09/11/1991
Leak Discovered	09/10/1991	09/10/1991

Inspections

Inspection Type	Inspection Date
REM Field Work Notification	09/17/2014

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Regina Small	651-757-2382	Hazardous Waste Data Management

Alternate Name

Alternate Name or ID	Description
4513	Former Leak Site Preferred ID
MND077629509	Hazardous Waste Preferred ID
LS0004513	Leak Site Preferred ID
38032	MPCA Agency Interest ID
MND077629509	Previous Name

Owners

Owner or Primary Contact:

There are no records of owner or primary contact names.

Former Owner or Primary Contact:

Valters Aviation Inc

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 5

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Valters Aviation

Location:	3275 Manning Ave N Lake Elmo Airport Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00225
Longitude:	-92.86273
Coordinate Collection Method:	Address Matching House Number
Currently Active?	No
Institutional controls:	No

Search w

Activity Overview

Tanks

Underground Tanks - TS0019223

Valters Aviation

Status: Inactive

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Events

Event	Start	End
UST Ten-Day Adv Notice	05/04/2007	
UST Ten-Day Adv Notice	05/04/2007	
Registration Received	05/01/1997	05/01/1997
Registration Received	04/17/1995	04/17/1995
Registration Received	06/01/1988	06/01/1988

Inspections

Inspection Type	Inspection Date
UT Inspection	06/02/2016
UT Inspection	05/31/2013
UT Inspection	06/02/2010
UT Inspection	05/23/2007
UT Inspection	08/21/2006
UT Inspection	03/11/1998

Enforcement Activities

Case Type	Net Penalty	Discovery Date	Action Date	Closure Date
Citation Warning		06/02/2010	06/09/2010	07/15/2010
APO - Combination	$6,750	08/21/2006	12/08/2006	06/14/2007

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Jacob Mueller	651-757-2862	Underground Tanks Compliance Staff

Alternate Name

Alternate Name or ID	Description
111969	MPCA Agency Interest ID
19223	Previous Name
19223	Previous Name
TS0019223	Underground Tanks Preferred ID

Owners

Owner or Primary Contact:

Gatis Valters
Kurt A. Nowacki
Mayer Aviation
Valters Aviation

Former Owner or Primary Contact:

Edward Myer
Kurt A. Nowacki
Mayer Aviation

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

MINNESOTA POLLUTION CONTROL AGENCY

Leaks and tanks site dashboard

New search

Valters Aviation

Site ID	TS0019223
Location	3275 Manning Ave N Lake Elmo, Minnesota 55042 Washington County
Tank Count	4 tanks are (or were) located at this site.

Tank number	Install date	Registration date	Tank capacity	Tank status	Stored product	Above or underground
001	07/01/1978	04/17/1995	4000	Removed	Gasoline	Underground
002	07/01/1978	04/17/1995	4000	Removed	Gasoline	Underground
003	06/01/1988	06/01/1988	10000	Active	Aviation gasoline	Underground
004						Underground

Site 6

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Village Park Preserve

Location:	See location description Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99443
Longitude:	-92.86596
Coordinate Collection Method:	Digitized - MPCA internal mapping application
Currently Active?	Yes
Institutional controls:	No

Search w

Activity Overview

Investigation and Cleanup

Brownfields - VP32130 - Voluntary Investigation and Cleanup

Village Park Preserve

Status: Active

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both. Non-petroleum brownfields are called Voluntary Investigation and Cleanup sites.

Events

Event	Start	End
Site Closed	12/18/2014	12/18/2014
Technical Assistance Letter Issued	12/10/2014	12/18/2014
Application/Notification/Registration Received	12/10/2014	12/10/2014
Completeness Determined	12/10/2014	12/10/2014

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

No program contact has been designated for this site.

Alternate Name

Alternate Name or ID	Description
VP32130	Brownfields Preferred ID
VP32130	Former Brownfields VIC Preferred ID
188829	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Village Park Preserve

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 7

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

2009 Lake Elmo Airport Pavement Rehab

Location:	3275 Manning Ave N Lake Elmo Airport Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99667
Longitude:	-92.86028
Coordinate Collection Method:	GPS - Other
Currently Active?	No
Institutional controls:	No

Search w

Activity Overview

Stormwater

Construction Stormwater - C00027652

2009 Lake Elmo Airport Pavement Rehab

Status: Inactive

When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, streams and wetlands. Stormwater permit requirements are designed to control erosion and limit pollution during and after construction.

Events

Event	Start	End
Coverage Issuance	05/25/2009	04/02/2010
Coverage Termination	05/25/2009	04/02/2010

Links to Additional Data Sources

- CSW Online Permit Data - CSC00027652

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Rachel Parlin	651-757-2118	Const Stormwater Data Management

Alternate Name

Alternate Name or ID	Description
C00027652	Construction Stormwater Preferred ID
131822	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

There are no records of owner or primary contact names.

Former Owner or Primary Contact:

Metropolitan Airports Commission

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 8

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Lake Elmo Airport

Location:	3275 Manning Ave Box 2 Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99976
Longitude:	-92.85682
Coordinate Collection Method:	Digitized - Permit Application Map
Currently Active?	Yes
Institutional controls:	No

Search w

Activity Overview

Stormwater

Industrial Stormwater - MNR0534YY

Lake Elmo Airport

Status: Inactive

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Events

Event	Start	End
Coverage Issuance	08/06/2010	08/27/2017

Links to Additional Data Sources

- ISW Online Permit Data - MNR0534YY

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Melissa Wenzel	651-757-2816	Ind Stormwater Compliance Staff
Rachel Parlin	651-757-2118	Ind Stormwater Data Management

Alternate Name

Alternate Name or ID	Description
MNR0534YY	Industrial Stormwater Preferred ID
138059	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Metropoliltan Airports Commission

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

08/06/2010

Mike Harder
6040 28th Ave S
Minneapolis, MN 55450

RE: NPDES/SDS Industrial Stormwater General Permit Application
Permit ID Number: MNR0534YY
Facility Name: Lake Elmo Airport
Facility Address: 3275 Manning Ave Box 2 Lake Elmo, MN 55042

Dear ,

The Minnesota Pollution Control Agency (MPCA) has received and approved your application for permit authorization for industrial stormwater.

Industrial Activities authorized under this permit

Industrial Activity	Industrial Subsector	Industrial Sector
4581 Airports, Flying Fields, and Airport Terminal Services	S2 Airports using < 100,000 gal. glycol-based de/anti-icing chemicals and/or annual. Avg.of < 100 tons urea.	S Air Transportation Facilities

Read and follow all applicable permit requirements. For a copy of the permit in its entirety go to: www.pca.state.mn.us/industrialstormwater/. There is also additional information about the Industrial Stormwater Multi-Sector General Permit including Frequently Asked Questions, a SWPPP template and checklist, the BMP Guidebook, the Sampling Guidance Manual, and many more guidance materials there.

If you have questions contact the Industrial Stormwater Program by email: iswprogram.pca@state.mn.us or call the Stormwater Hotline at 651-757-2119 or 800-657-3804 (non-metro only).

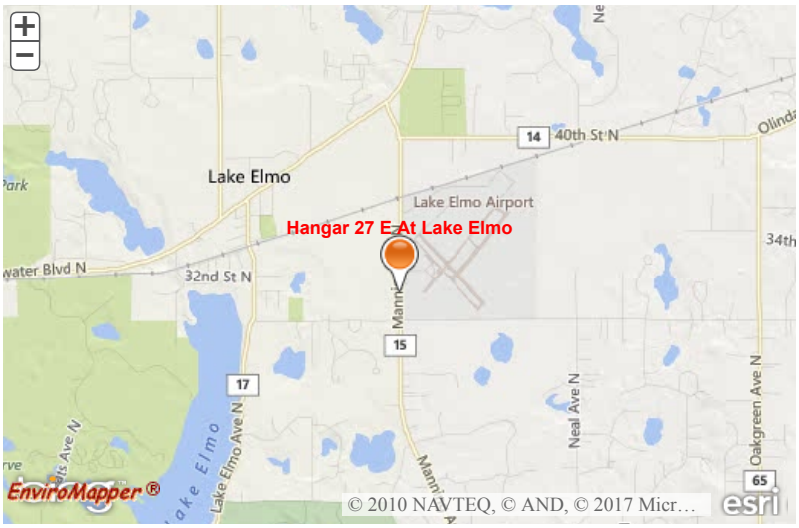
Site 9

EPA United States Environmental Protection Agency

Envirofacts

Search Results

HANGAR 27 E AT LAKE ELMO
3275 MANNING AVE N HANGAR 27E
LAKE ELMO, MN 55042



*You can navigate within the map with your mouse.

EPA Facility Information

This query was executed on AUG-18-2017

Multisystem Links

- EF Overview
- Search
- Model
- Contact Us

Report an Error

RCRAInfo

HANDLER ID: MNS000305248

LIST OF NAICS CODES AND DESCRIPTIONS

NAICS CODE	NAICS DESCRIPTION
336413	OTHER AIRCRAFT PARTS AND AUXILIARY EQUIPMENT MANUFACTURING
336411	AIRCRAFT MANUFACTURING

HANDLER / FACILITY CLASSIFICATION

HANDLER TYPE	LAND DISPOSAL	INCINERATOR	BOILER AND OR INDUSTRIAL FURNACE	STORAGE	TREATMENT

HANDLER TYPE
Conditionally Exempt Small Generator

No Process Information is available for the facility listed above.

Additional Information can be obtained from Resource Conservation and Recovery Information RCRAInfo Search.

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Hangar 27E @ Lake Elmo

Location:	3275 Manning Ave N Hangar 27E Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00276
Longitude:	-92.85410
Coordinate Collection Method:	Digitized - Permit Application Map
Currently Active?	Yes
Industry Classification:	Aircraft Manufacturing Other Aircraft Parts and Auxiliary Equipment Manufacturing
Institutional controls:	No

Search w

Activity Overview

Hazardous Waste

Hazardous Waste - MNS000305248

Hangar 27E @ Lake Elmo

Status: Inactive

Events

Event	Start	End
Application/Notification/Registration Received	02/16/2017	02/16/2017
Application/Notification/Registration Received	07/08/2016	07/08/2016

Links to Additional Data Sources

- HW Generator License Application Data - MNS000305248

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Regina Small	651-757-2382	Hazardous Waste Data Management

Alternate Name

Alternate Name or ID	Description
MNS000305248	Hazardous Waste Preferred ID
213338	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Nicholas P Krueger

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Related Topics: Envirofacts

FRS

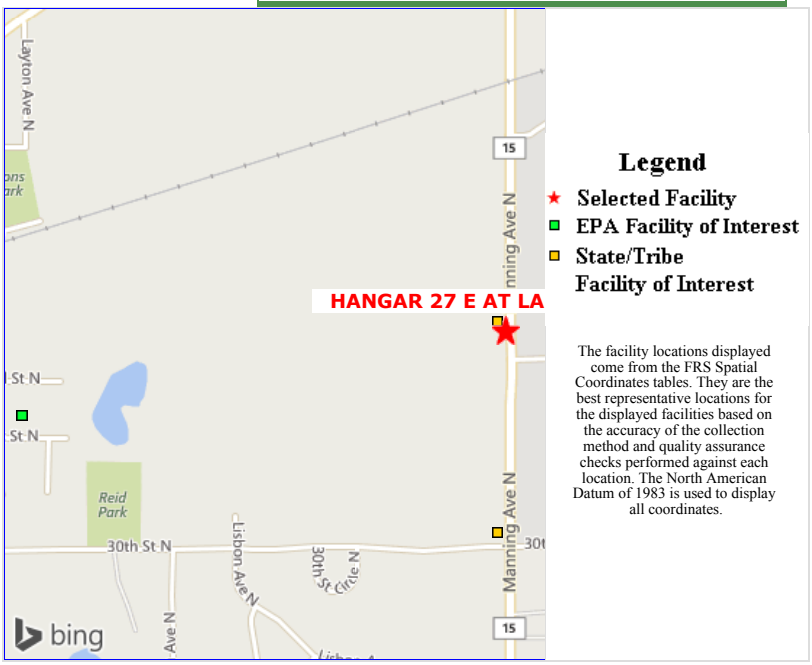
FRS Facility Detail Report

HANGAR 27 E AT LAKE ELMO

EPA Registry Id:
110069462021
3275 MANNING AVE N HANGAR 27E
LAKE ELMO, MN
55042

Facilty Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model



Environmental Interests

Information System	System Facility Name	Information System Id/Report Link	Environmental Interest Type	Data Source	Last Date
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	HANGAR 27 E AT LAKE ELMO	MNS000305248	CESQG (Y)	RCRAINFO	10/05

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Facility Coordinates Viewer Environmental Justice Map Viewer Watershed R

Standard Industrial Classification Codes (SIC)

No SIC Codes returned.

Facility Codes and Flags

EPA Region:	05
Duns Number:	
Congressional District Number:	04
Legislative District Number:	
HUC Code/Watershed:	07030005 / LOWER ST. CROIX
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Alternative Names

No Alternative Names returned.

Organizations

No Organizations returned.

National Industry Classification Syst

Data Source	NAICS Code	Description
RCRAINFO	336411	AIRCRAFT MANUFACTURING.
RCRAINFO	336413	OTHER AIRCRAFT PARTS AND AUXI MANUFACTURING.

Facility Mailing Addre

No Facility Mailing Addresses returned.

Contacts

Affiliation Type	Full Name	Office P
REGULATORY CONTACT	NICHOLAS P KRUEGER	651-255-

Query executed on: AUG-18-2017

Last updated on September 24, 2015

Site 10

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Valters Aviation Service Station Inc.

Location:	3275 Manning Ave N Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00211
Longitude:	-92.85785
Coordinate Collection Method:	Digitized - Permit Application Map
Currently Active?	Yes
Institutional controls:	No

Search w

Activity Overview

Stormwater

Industrial Stormwater - MNR053C3J

Valters Aviation Service Station Inc.

Status: Active

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Events

Event	Start	End
Coverage Issuance	04/05/2015	04/05/2020

Links to Additional Data Sources

- ISW Online Permit Data - MNR053C3J

Industrial Stormwater - MNR0537TK

Valters Aviation Service Station Inc.

Status: Inactive

At industrial sites, stormwater may come into contact with harmful pollutants such as toxic metals, oil, grease and de-icing salts. Industrial stormwater permits are designed to limit the contaminants that reach surface and groundwater.

Events

Event	Start	End
Coverage Issuance	10/24/2013	04/05/2015

Inspections

Inspection Type	Inspection Date
SW Facility Inspection	08/09/2013
ISW On Site Compliance Inspection	08/09/2013

Enforcement Activities

Case Type	Net Penalty	Discovery Date	Action Date	Closure Date
APO - Combination	$4,700	08/09/2013	10/18/2013	02/14/2014

Links to Additional Data Sources

- ISW Online Permit Data - MNR0537TK

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Melissa Wenzel	651-757-2816	Ind Stormwater Compliance Staff
Rachel Parlin	651-757-2118	Ind Stormwater Data Management

Alternate Name

Alternate Name or ID	Description
MNR0537TK	Industrial Stormwater Preferred ID
MNR053C3J	Industrial Stormwater Preferred ID
144980	MPCA Agency Interest ID
MNU000944	Project Number

Owners

Owner or Primary Contact:

Gatis Valters

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

10/24/2013

Gatis Valters
3275 Manning Ave N
Lake Elmo, MN 55042

RE: NPDES/SDS Industrial Stormwater General Permit Application
Permit ID Number: MNR0537TK
Facility Name: Valters Aviation Service Station Inc.
Facility Address: 3275 Manning Ave N Lake Elmo, MN 55042

Dear ,

The Minnesota Pollution Control Agency (MPCA) has received and approved your application for permit authorization for industrial stormwater.

Read and follow all applicable permit requirements. For a copy of the permit in its entirety go to: www.pca.state.mn.us/industrialstormwater/. There is also additional information about the Industrial Stormwater Multi-Sector General Permit including Frequently Asked Questions, a SWPPP template and checklist, the BMP Guidebook, the Sampling Guidance Manual, and many more guidance materials there.

If you have questions contact the Industrial Stormwater Program by email: iswprogram.pca@state.mn.us or call the Stormwater Hotline at 651-757-2119 or 800-657-3804 (non-metro only).

Site 11

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Walters Aviation

Location:	3275 Manning Ave N Lot 33 Lake Elmo, MN 55042-9681 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	44.99599
Longitude:	-92.86328
Coordinate Collection Method:	Address Matching House Number
Currently Active?	Yes
Industry Classification:	Other Airport Operations
Institutional controls:	No

Search w

Activity Overview

Hazardous Waste

Hazardous Waste - MNR000100388 - Very small quantity generator

Walters Aviation

Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and-or fire hazards. Very Small Quantity Generators produce 220 pounds or less of hazardous waste, and less than 2.2 pounds of acute hazardous waste per month. Businesses in this classification require a license.

Events

Event	Start	End
Notif of Regulated Waste	05/18/2017	
Annual Gen License Report	12/16/2013	
Annual Gen License Report	01/28/2008	

Links to Additional Data Sources

- HW Generator License Application Data - MNR000100388

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Regina Small	651-757-2382	Hazardous Waste Data Management

Alternate Name

Alternate Name or ID	Description
MNR000100388	Hazardous Waste Preferred ID
57922	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Metropolitan Airports Commission

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

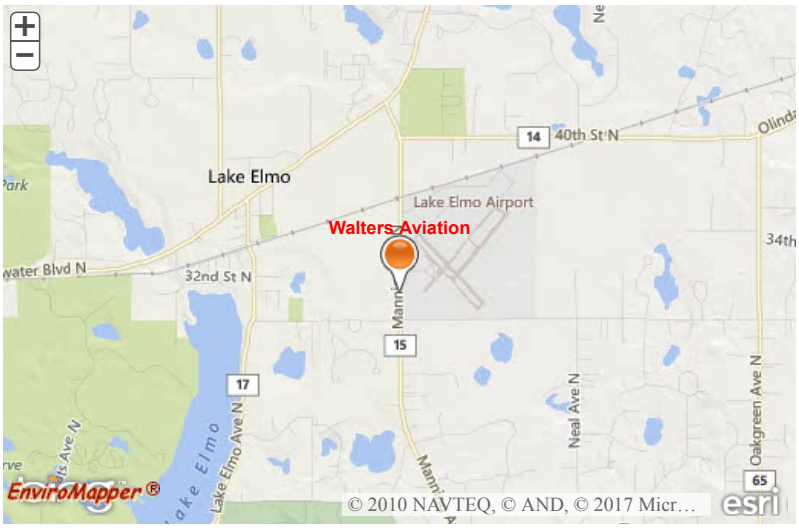
To request more records, visit our information request page to learn about the process or simply fill out an information request form.

EPA United States Environmental Protection Agency

Envirofacts

Search Results

WALTERS AVIATION
3275 MANNING AVE
LAKE ELMO, MN 55042-9681



You can navigate within the map with your mouse.

EPA Facility Information

This query was executed on AUG-18-2017

Multisystem Links

- EF Overview
- Search
- Model
- Contact Us

Report an Error

RCRAInfo

HANDLER ID: MND077629509

LIST OF NAICS CODES AND DESCRIPTIONS

NAICS CODE	NAICS DESCRIPTION
48819	OTHER SUPPORT ACTIVITIES FOR AIR TRANSPORTATION

HANDLER / FACILITY CLASSIFICATION

HANDLER TYPE	LAND DISPOSAL	INCINERATOR	BOILER AND OR INDUSTRIAL FURNACE	STORAGE	TREATMENT

HANDLER TYPE
Conditionally Exempt Small Generator

No Process Information is available for the facility listed above.

Additional Information can be obtained from Resource Conservation and Recovery Information RCRAInfo Search.

RCRAInfo

HANDLER ID:MNR000100388

No NAICS Codes are available for the facility listed above.

HANDLER / FACILITY CLASSIFICATION

HANDLER TYPE	LAND DISPOSAL	INCINERATOR	BOILER AND OR INDUSTRIAL FURNACE	STORAGE	TREATMENT

HANDLER TYPE
Conditionally Exempt Small Generator

No Process Information is available for the facility listed above.

Additional Information can be obtained from Resource Conservation and Recovery Information RCRAInfo Search.

Related Topics: Envirofacts

FRS

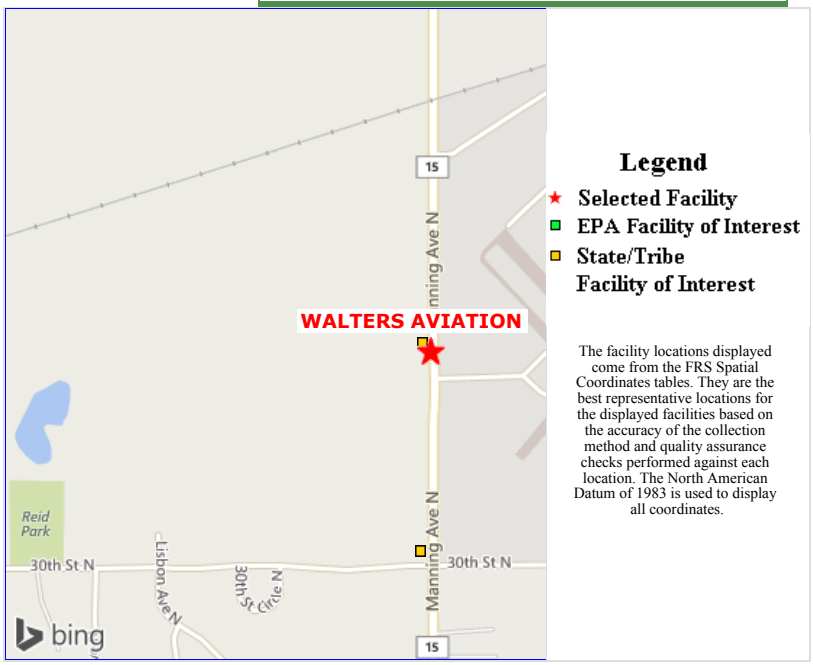
FRS Facility Detail Report

WALTERS AVIATION

EPA Registry Id:
110009411715
3275 MANNING AVE
LAKE ELMO, MN
55042-9681

Facilty Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model



Environmental Interests

Information System	System Facility Name	Information System Id/Report Link	Environmental Interest Type	Data Source
MINNESOTA - PERMITTING, COMPLIANCE, AND ENFORCEMENT INFORMATION MANAGEMENT SYSTEM	VALTERS AVIATION INC	38032	STATE MASTER	MN-TEMPO
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	VALTERS AVIATION INC	MND077629509	CESQG (Y)	RCRAINFO
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	WALTERS AVIATION	MNR000100388	CESQG (Y)	RCRAINFO
MINNESOTA - PERMITTING, COMPLIANCE, AND ENFORCEMENT INFORMATION MANAGEMENT SYSTEM	WALTERS AVIATION	57922	STATE MASTER	MN-TEMPO

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Facility Coordinates Viewer Environmental Justice Map Viewer Watershed R

Standard Industrial Classification Codes (SIC)

Data Source	SIC Code	Description	Primary
MN-TEMPO	4581	AIRPORTS, FLYING FIELDS, AND AIRPORT TERMINAL SERVICES	

Facility Codes and Flags

EPA Region:	05
Duns Number:	
Congressional District Number:	04
Legislative District Number:	39
HUC Code/Watershed:	07030005 / LOWER ST. CROIX
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Alternative Names

Alternative Name	Source of Data
MAYER AVIATION	RCRAINFO
VALTERS AVIATION	NOTIFICATION (RCRA)

Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address
OWNER	METROPOLITAN AIRPORTS COMMISSION		RCRAINFO	
OWNER	VALTERS AVIATION INC		RCRAINFO	
OWNER	MAYER EDWARD W		RCRAINFO	
OWNER	METROPOLITAN AIRPORTS COMMISSION		RCRAINFO	

National Industry Classification Syst

Data Source	NAICS Code	Description
MN-TEMPO	048819	
MN-TEMPO	488119	OTHER AIRPORT OPE

Facility Mailing Addre

Affiliation Type	Delivery Point	Cit
FACILITY MAILING ADDRESS	3275 MANNING AVE N LOT 33	LA EL
FACILITY MAILING ADDRESS	3275 MANNING AVE N	LA EL

Contacts

Affiliation Type	Full Name	Office Phon
REGULATORY CONTACT	GAITIS WALTERS	6517771399
REGULATORY CONTACT	GATIS VALTERS	9999999999

Query executed on: AUG-18-2017

Last updated on September 24, 2015

Site 12

MINNESOTA POLLUTION CONTROL AGENCY

Leaks and tanks site dashboard

New search

River Country Coop Holiday

Site ID	TS0119761
Location	4201 Manning Ave N Lake Elmo, Minnesota 55042 Washington County
Tank Count	4 tanks are (or were) located at this site.

Tank number	Install date	Registration date	Tank capacity	Tank status	Stored product	Above or underground
001	05/23/2000	01/16/2001	12000	Active	Gasoline	Underground
002	05/23/2000	01/16/2001	7000	Active	Gasoline	Underground
002-2	05/23/2000	01/16/2001	5000	Active	Gasoline	Underground
003	05/23/2000	01/16/2001	7000	Active	Diesel	Underground
003-2	05/23/2000	01/16/2001	5000	Active	Diesel	Underground
004	05/23/2000	01/16/2001	2000	Active	Diesel, Off Road	Underground

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

River Country Coop Holiday

Location:	4201 Manning Ave N 4201 Stillwater Blvd Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00989
Longitude:	-92.86446
Coordinate Collection Method:	Address Matching House Number
Currently Active?	Yes
Institutional controls:	No

Search w

Activity Overview

Investigation and Cleanup

Brownfields - PB2356 - Petroleum Brownfield

River Country Coop Holiday

Status: Inactive

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both.

Events

Event	Start	End
Site Closed	01/01/2007	01/01/2007
Tank Removal Verification Letter Issued	06/27/1996	06/27/1996

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Petroleum Remediation - LS0000947 - Leak Site

River Country Coop Holiday

Status: Inactive

Leak sites are locations where a release of petroleum products has occurred from a tank system. Leak sites can occur from aboveground or underground tank systems as well as from spills at tank facilities.

Events

Event	Start	End
Closure Request Reviewed	05/04/2001	06/27/2001
Site Closed	05/04/2001	06/27/2001
Technical Review of Closure Request Completed	05/04/2001	06/21/2001
Annual or Semi Annual Report Reviewed	01/31/2000	02/23/2000
More Information Requested	01/31/2000	02/23/2000
Technical Review of Annual or Semi Annual Report Completed	01/31/2000	02/23/2000
Other Report Type Not Listed Reviewed	12/01/1999	12/01/1999
File Reviewed No Report Received	11/05/1999	11/12/1999
Wakeup Request Issued	11/05/1999	11/12/1999
Invoiced	07/28/1998	07/28/1998
Annual or Semi Annual Report Reviewed	06/26/1998	06/29/1998
More Information Requested	06/26/1998	06/29/1998
Technical Review of Annual or Semi Annual Report Completed	06/26/1998	06/29/1998
Invoiced	05/29/1997	05/29/1997
Annual or Semi Annual Report Reviewed	04/03/1997	04/23/1997
Non-Corrective Action Design Approved	04/03/1997	04/23/1997
Technical Review of Annual or Semi Annual Report Completed	04/03/1997	04/23/1997
Invoiced	04/29/1996	04/29/1996
CAD Install/Implementation Report Reviewed	02/29/1996	03/27/1996
More Work Requested	02/29/1996	03/27/1996
Technical Review of CAD Install/Implementation Report Completed	02/29/1996	03/08/1996
General Information Reviewed	01/17/1996	03/08/1996
Technical Review of General Information Completed	01/17/1996	03/08/1996
CAD Install/Implementation Report Reviewed	11/11/1995	03/08/1996
More Work Requested	11/11/1995	03/08/1996
Technical Review of CAD Install/Implementation Report Completed	11/11/1995	03/08/1996
Annual or Semi Annual Report Reviewed	12/12/1994	06/23/1995
Technical Review of Annual or Semi Annual Report Completed	12/12/1994	06/23/1995
Monitoring Report Reviewed	02/09/1994	09/13/1994
Monitoring Report Reviewed	12/14/1993	09/13/1994
CSR Reviewed by Project Manager - Adequate	09/17/1993	09/21/1993
Petrofund Application from Commerce Received	09/17/1993	09/21/1993
CSR Reviewed by Project Manager - Adequate	09/16/1993	09/20/1993
Petrofund Application from Commerce Received	09/16/1993	09/20/1993
Non-Corrective Action Design Approved	02/12/1993	09/14/1993
Status Report Reviewed	02/12/1993	09/14/1993
Technical Review of Status Report Completed	02/12/1993	09/13/1993
Monitoring Report Reviewed	01/19/1993	09/14/1993
Non-Corrective Action Design Approved	01/19/1993	09/14/1993
Technical Review of Monitoring Report Completed	01/19/1993	09/13/1993
Corrective Action Design (CAD) Reviewed	12/06/1990	02/21/1991
Corrective Action Design Approved	12/06/1990	02/21/1991
Remedial Investigation Report Reviewed	12/06/1990	02/21/1991

Thermal Treatment Soil Batch Approved	07/26/1990	07/26/1990
Responsible Party Determined	02/16/1989	02/16/1989
Standard Letter Issued	02/16/1989	02/16/1989
Leak Reported	02/01/1989	02/01/1989
Leak Discovered	12/15/1988	12/15/1988

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Tanks

Underground Tanks - TS0119761

River Country Coop Holiday

Status: Active

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Events

Event	Start	End
Notice Received	12/07/2016	12/07/2016
Notice Received	09/27/2016	09/27/2016
Registration Received	11/07/2005	11/07/2005
Registration Received	06/06/2001	06/06/2001
Registration Received	01/16/2001	01/16/2001
UST Ten-Day Adv Notice	05/17/2000	
Registration Received	01/10/1990	01/10/1990
Registration Received	12/13/1989	12/13/1989

Inspections

Inspection Type	Inspection Date
UT Inspection	05/02/2014
UT Inspection	05/04/2011
UT Inspection	03/17/2008

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Jacob Mueller	651-757-2862	Underground Tanks Compliance Staff

Alternate Name

Alternate Name or ID	Description
PB2356	Brownfields Preferred ID
2356	Former Brownfields PBP Preferred ID
947	Former Leak Site Preferred ID
LS0000947	Leak Site Preferred ID
116220	MPCA Agency Interest ID
119761	Previous Name
119761	Previous Name
119761	Previous Name
TS0014771	Underground Tanks Preferred ID
TS0119761	Underground Tanks Preferred ID

Owners

Owner or Primary Contact:

Kunz Oil Co

River Country Cooperative

Tom Boland

Walter Kunz Ii

Former Owner or Primary Contact:

River Country Coop

River Country Cooperative

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 13

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Abandoned Gas Station

Location:	40th St N & Stillwater Blvd Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00987
Longitude:	-92.86462
Coordinate Collection Method:	Address Matching House Number
Currently Active?	No
Institutional controls:	No

Search w

Activity Overview

Tanks

Underground Tanks - TS0020466

Abandoned Gas Station

Status: Inactive

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Inspections

Inspection Type	Inspection Date
UT Inspection	02/24/1998

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Jacob Mueller	651-757-2862	Underground Tanks Compliance Staff

Alternate Name

Alternate Name or ID	Description
146624	MPCA Agency Interest ID
TS0020466	Underground Tanks Preferred ID

Owners

Owner or Primary Contact:

Owner Unknown

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 14

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Abandoned Service Station

Location:	Highway 5 & Manning Ave Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00989
Longitude:	-92.86472
Coordinate Collection Method:	Address Matching House Number
Currently Active?	No
Institutional controls:	No

Search w

Activity Overview

Tanks

Underground Tanks - TS0020472

Abandoned Service Station

Status: Inactive

An underground storage tank site has at least one tank of a certain size on the premises. A tank site may have multiple tanks and these tanks may contain food products, petroleum products or other substances.

Inspections

Inspection Type	Inspection Date
UT Inspection	05/31/2013
UT Inspection	06/02/2010

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Jacob Mueller	651-757-2862	Underground Tanks Compliance Staff

Alternate Name

Alternate Name or ID	Description
146625	MPCA Agency Interest ID
TS0020472	Underground Tanks Preferred ID

Owners

Owner or Primary Contact:

Owner Unknown

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 15

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Bruggeman - Lake Elmo

Location:	See location description Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00155
Longitude:	-92.87046
Coordinate Collection Method:	Public Land Survey-Two Quarter
Currently Active?	Yes
Institutional controls:	Yes

Search w

Activity Overview

Investigation and Cleanup

Brownfields - VP19780 - Voluntary Investigation and Cleanup

Bruggeman - Lake Elmo

Status: Inactive

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both. Non-petroleum brownfields are called Voluntary Investigation and Cleanup sites.

Events

Event	Start	End
No Association Determination Letter Issued	05/25/2016	11/03/2005
No Association Determination Letter Issued	05/25/2016	11/17/2004
VIC - Response Action Plan (RAP) Reviewed	05/27/2009	05/28/2009
VIC - Technical Review of Response Action Plan (RAP) Completed	05/27/2009	05/28/2009
Annual or Semi Annual Report Reviewed	10/13/2008	10/13/2008
Technical Review of Annual or Semi Annual Report Completed	10/13/2008	10/13/2008
VIC - Phase II Report Reviewed	07/29/2008	07/29/2008
VIC - Technical Review of Phase II Report Completed	07/29/2008	07/29/2008
Site Closed	11/14/2007	11/14/2007
VIC - Phase II Work Plan Reviewed	02/15/2007	02/15/2007
VIC - Technical Review of Phase II Work Plan Completed	02/15/2007	02/15/2007
VIC - Phase II Report Reviewed	12/05/2006	12/05/2006
VIC - Technical Review of Phase II Report Completed	12/05/2006	12/05/2006
Correspondence Reviewed	10/13/2005	10/13/2005
Other Report Type Not Listed Reviewed	12/02/2004	12/07/2004
Technical Review of Other Report Type Not Listed Completed	12/02/2004	12/07/2004
Remedial Investigation Report Reviewed	11/16/2004	11/17/2004
Technical Review of Remedial Investigation Report Completed	11/16/2004	11/17/2004
Other Report Type Not Listed Reviewed	10/15/2004	11/17/2004
Remedial Investigation Report Reviewed	10/15/2004	11/17/2004
Technical Review of Other Report Type Not Listed Completed	10/15/2004	11/17/2004
Technical Review of Remedial Investigation Report Completed	10/15/2004	11/17/2004
VIC - Phase I Report Reviewed	10/15/2004	11/17/2004
VIC - Technical Review of Phase I Report Completed	10/15/2004	11/17/2004
Application/Notification/Registration Received	10/15/2004	10/15/2004

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Brownfields - VP19782 - Voluntary Investigation and Cleanup

Bruggeman - Lake Elmo

Status: Active

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both. Non-petroleum brownfields are called Voluntary Investigation and Cleanup sites.

Events

Event	Start	End
No Association Determination Letter Issued	04/14/2016	04/14/2016
No Association Determination Letter Issued	09/04/2014	09/04/2014
VIC - Response Action Plan (RAP) Approval Letter Issued	09/04/2014	09/04/2014
VIC - Response Action Plan (RAP) Reviewed	08/01/2014	09/04/2014
No Association Determination Letter Issued	02/05/2014	02/05/2014
VIC - Response Action Plan (RAP) Approval Letter Issued	02/05/2014	02/05/2014
VIC - Proposed/Past Actions Letter Reviewed	11/01/2013	05/14/2020
Other Report Type Not Listed Reviewed	11/01/2013	02/05/2014
Phase II Report Reviewed	10/10/2013	10/10/2013
VIC - Phase II Report Reviewed	09/18/2013	10/10/2013
VIC - Phase II Work Plan Reviewed	07/30/2013	08/22/2013
Application/Notification/Registration Received	07/15/2013	07/15/2013
Completeness Determined	07/15/2013	07/15/2013
Referred from MPCA State Superfund	07/15/2013	07/15/2013

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Brownfields - VP19781 - Voluntary Investigation and Cleanup

Bruggeman - Lake Elmo

Status: Active

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both. Non-petroleum brownfields are called Voluntary Investigation and Cleanup sites.

Events

Event	Start	End
Technical Review of Work Plan Completed	11/15/2010	11/15/2010
Work Plan Reviewed	11/15/2010	11/15/2010
Application/Notification/Registration Received	09/03/2010	09/03/2010
Completeness Determined	10/15/2004	10/15/2004
Referred from MPCA State Superfund	10/15/2004	10/15/2004

Links to Additional Data Sources

There are no links for this activity. Contact the file manager or program contact to determine if additional information is available.

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
John Betcher	651-757-2226	Brownfields Hydrologist
Patrice Jensen	651-757-2465	Brownfields Project Manager
John Betcher	651-757-2226	Brownfields Project Manager

Alternate Name

Alternate Name or ID	Description
VP19780	Brownfields Preferred ID
VP19781	Brownfields Preferred ID
VP19782	Brownfields Preferred ID
VP19780	Former Brownfields VIC Preferred ID
VP19781	Former Brownfields VIC Preferred ID
VP19782	Former Brownfields VIC Preferred ID
192790	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

Anchor Bank NA

Bruce Hutchinson

Bruggeman Properties Representing Lake Elmo Develo

Elizabeth Sauve

Unknown

Former Owner or Primary Contact:

There are no records of former owner or primary contact names.

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Site 16

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Help FAQ WIMN Glossary Feedback New search

Washington County Landfill Reconstruction

Location:	See location description Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00778
Longitude:	-92.92111
Coordinate Collection Method:	GPS - Other
Currently Active?	No
Institutional controls:	No

Search w

Activity Overview

Stormwater

Construction Stormwater - C00027729

Washington County Landfill Reconstruction

Status: Inactive

When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, streams and wetlands. Stormwater permit requirements are designed to control erosion and limit pollution during and after construction.

Events

Event	Start	End
Coverage Issuance	06/03/2009	12/20/2011
Coverage Termination	06/03/2009	12/20/2011

Inspections

Inspection Type	Inspection Date
CSW Site Compliance Inspection	06/22/2009

Links to Additional Data Sources

- CSW Online Permit Data - CSC00027729

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Rachel Parlin	651-757-2118	Const Stormwater Data Management

Alternate Name

Alternate Name or ID	Description
C00027729	Construction Stormwater Preferred ID
136619	MPCA Agency Interest ID

Owners

Owner or Primary Contact:

There are no records of owner or primary contact names.

Former Owner or Primary Contact:

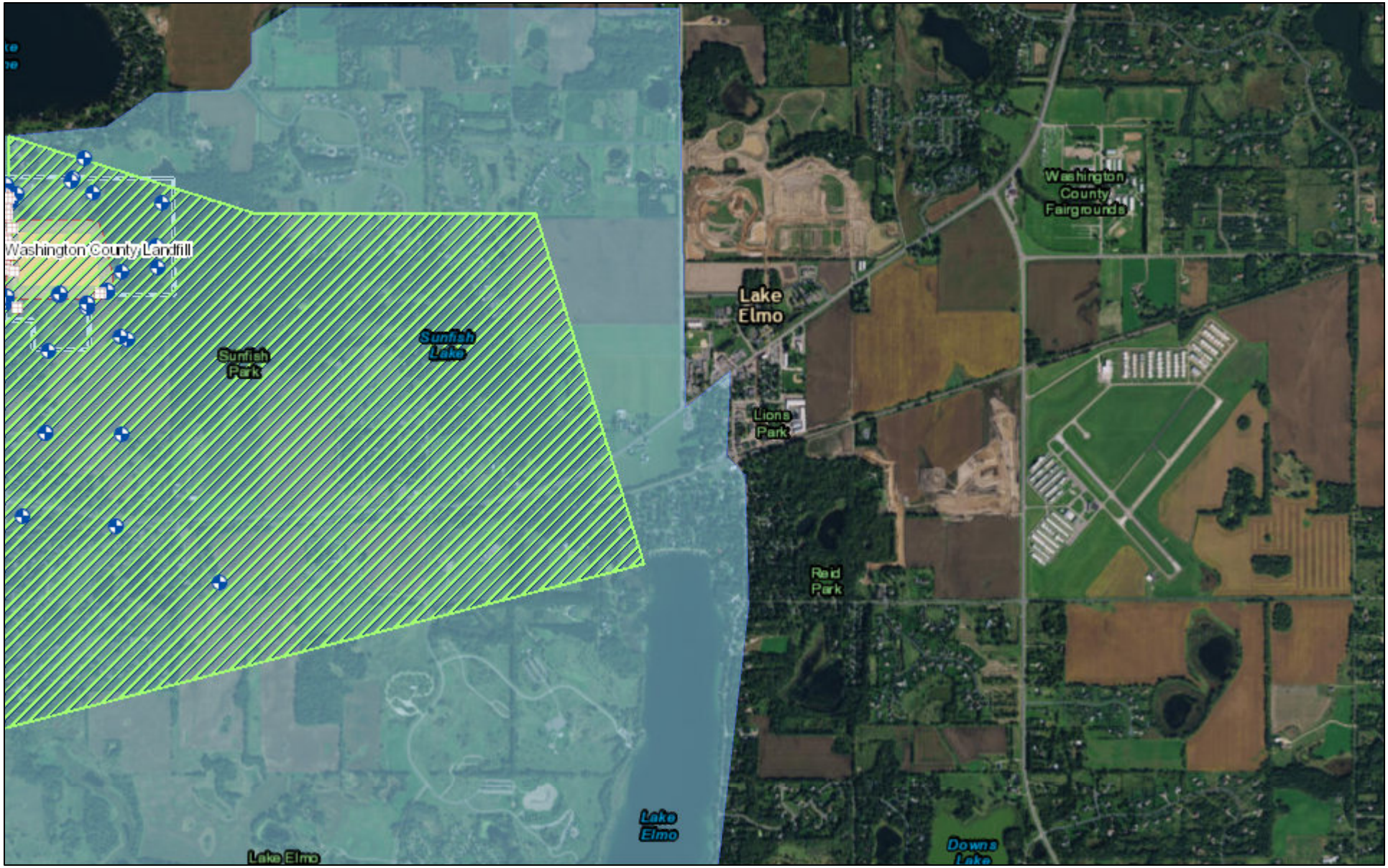
Minnesota Pollution Control Agency

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

Washington County Landfill Impact Plume Map



August 17, 2017

- Gas Probe
- Monitoring Well
- Groundwater Plume
- Methane Area Of Concern
- Groundwater Area Of Concern
- Land Management Area
- Waste Footprint

1:36,112

0 0.3 0.6 1.2 mi

0 0.35 0.7 1.4 km

Site 17

Superfund: Making a Visible Difference

SITE BACKGROUND

The Baytown Township Ground Water Plume site is located in Washington County, Minnesota. It includes parts of Baytown Township, West Lakeland Township, the City of Bayport, and the City of Lake Elmo. The site consists of a contaminated groundwater plume located primarily in the Prairie du Chien Aquifer, the Jordan Sandstone Aquifer and, in certain areas, the Tunnel City Aquifer. The contaminated plume covers about seven square miles. A former metal working facility in Lake Elmo is the primary source of the site's contamination. Treatment of private and public drinking water, source area treatment, and groundwater monitoring are ongoing.

The Minnesota Department of Health (MDH) first detected trichloroethylene (TCE) in private wells in 1987 and created a Special Well Construction Area to protect residents. The site was listed on the state's Permanent List of Priorities in 1988 and multiple state and local agencies collected thousands of samples from private wells. The site was listed on the National Priorities List (NPL) in 1994. Minnesota Pollution Control Agency (MPCA) leads cleanup of the site, with oversight by EPA.

In 2000, MPCA and EPA selected a remedy for the groundwater plume and private wells which requires plume monitoring and installation and maintenance of granular activated carbon (GAC) treatment units for

private wells. In 2007, MPCA and EPA amended the remedy to add drinking water treatment for the City of Bayport Municipal Well #2 and treatment for the area that was the source of the contamination. These remedies have been operating since 2008. In 2015, MPCA and EPA amended the remedy to add an additional City of Bayport municipal well to the treatment system.

- EPA's Involvement at this Site
- Site Status
- Work to Protect Human Health and the Environment
- Site Risks

- Institutional Controls
- Redevelopment

Site Reports and Documents

Reports and Documents

No published Administrative Records currently available.

Information Repositories

Site Contacts

EPA Contacts

Community Involvement Coordinator (CIC)
Teresa Jones
(312) 886-0725

Remedial Project Manager (RPM)
Leah Evison
(651) 757-2898

Stay Updated

Public Participation Opportunities

Please contact Teresa Jones, Community Involvement Coordinator, at 312-886-0725 or jones.teresa@epa.gov.

Site Facts

NPL Status: Final
Street Address:
35TH STREET N,
BAYTOWN TOWNSHIP,
MN 55042
Congressional District: 04
EPA ID: MND982425209

Other Site Names

Site Contaminants

Operable Units (OU)

Performance Measures

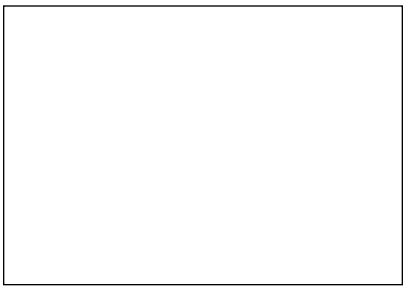
AUGUST 21, 2017

MINNESOTA POLLUTION CONTROL AGENCY

What's in My Neighborhood

Baytown TWP Groundwater Contamination

Location:	11325 Stillwater Blvd N Lake Elmo, MN 55042 Washington County
Watershed:	Lower St. Croix River (07030005)
Latitude:	45.00342
Longitude:	-92.87614
Coordinate Collection Method:	Digitized - Permit Application Map
Currently Active?	Yes
Industry Classification:	Remediation and Other Waste Management Services Beauty Salons
Institutional controls:	No



Search with a map

Activity Overview

Hazardous Waste

Hazardous Waste - MNS000105718 - Small quantity generator

Baytown TWP Groundwater Contamination

Status: Active

Hazardous waste includes substances that are corrosive, explosive, toxic and/or fire hazards. Small Quantity Generators produce between 220 and 2,200 pounds of hazardous waste per month, and less than 2.2 pounds of waste classified as acute hazardous waste. Businesses in this classification require a license.

Events

Event	Start	End
Application/Notification/Registration Received	05/17/2017	05/17/2017

Links to Additional Data Sources

- HW Generator License Application Data - MNS000105718

Investigation and Cleanup

Brownfields - BF0000418 - Voluntary Investigation and Cleanup

Baytown TWP Groundwater Contamination

Status: Active

Brownfields are potentially contaminated sites where the MPCA is helping buyers, sellers, developers or local governments to voluntarily investigate and clean up land for sale, financing or redevelopment. Sites may be petroleum brownfields, non-petroleum brownfields, or both. Non-petroleum brownfields are called Voluntary Investigation and Cleanup sites.

Events

Event	Start	End
Completeness Determined	07/05/2017	07/05/2017
Lender No Association Determination Letter Issued	07/03/2017	07/18/2017
Completeness Determined	07/03/2017	07/03/2017
Application/Notification/Registration Received	06/19/2017	07/05/2017

Links to Additional Data Sources

- EPA CERCLIS Project Data - 0505340

CERCLIS Site - MND982425209

Baytown TWP Groundwater Contamination

Status: Active

CERCLIS sites are places that are listed in the federal Comprehensive Environmental Response, Compensation and Liability Information System. This means that they are or were suspected of being contaminated. After CERCLIS sites are investigated, they may be elevated to state or federal Superfund lists, or it may be determined that no action is necessary.

Events

Event	Start	End
CERCLIS/ SEMS Listing	01/01/1987	11/09/2005

Links to Additional Data Sources

- EPA CERCLIS Project Data - 0505340

Superfund - SR0000084 - Federal Superfund project and State Superfund project

Baytown TWP Groundwater Contamination

Status: Active

Superfund projects occur where known or suspected environmental contamination is or was a risk to public health or the environment. The Superfund program identifies, investigates and determines appropriate cleanup measures. Federal Superfund sites are on the US EPA's National Priority List (NPL), while State Superfund sites are on the Minnesota Permanent List of Priorities (PLP). Sites are delisted when contamination is cleaned up and risks to human and environmental health have been mitigated.

Events

Event	Start	End
Other Report Type Not Listed Reviewed	08/09/2016	08/09/2016
Monitoring Report Reviewed	07/13/2016	07/13/2016
Monitoring Report Reviewed	06/23/2016	06/23/2016

Commissioner Notice Letter (CNL) Issued	05/25/2016	05/25/2016
Feasibility Study Reviewed	05/25/2016	05/25/2016
Operation & Maintenance Report Reviewed	05/25/2016	05/25/2016
Remedial Design Reviewed	05/25/2016	05/25/2016
Technical Review of Other Report Type Not Listed Completed	03/18/2016	03/21/2016
Other Report Type Not Listed Reviewed	02/10/2016	02/25/2016
Technical Review of Other Report Type Not Listed Completed	02/10/2016	02/25/2016
Technical Review of Other Report Type Not Listed Completed	02/08/2016	03/10/2016
Technical Review of Annual or Semi Annual Report Completed	11/13/2015	12/15/2015
Technical Review of Other Report Type Not Listed Completed	10/16/2015	10/16/2015
Technical Review of Other Report Type Not Listed Completed	09/24/2015	09/24/2015
Technical Review of Monitoring Report Completed	08/20/2015	08/20/2015
Technical Review of Annual or Semi Annual Report Completed	07/01/2015	07/27/2015
Technical Review of Annual or Semi Annual Report Completed	05/08/2015	05/29/2015
Technical Review of Other Report Type Not Listed Completed	04/03/2015	04/03/2015
Technical Review of Other Report Type Not Listed Completed	03/19/2015	03/23/2015
Technical Review of Other Report Type Not Listed Completed	02/25/2015	03/17/2015
Technical Review of Other Report Type Not Listed Completed	02/05/2015	03/17/2015
Annual or Semi Annual Report Reviewed	02/04/2015	02/04/2015
Technical Review of Annual or Semi Annual Report Completed	01/23/2015	01/28/2015
Technical Review of Monitoring Report Completed	12/30/2014	12/31/2014
Technical Review of Annual or Semi Annual Report Completed	12/23/2014	12/23/2014
Other Report Type Not Listed Reviewed	12/04/2014	12/12/2014
Site Visit Conducted	09/16/2014	09/16/2014
Technical Review of Monitoring Report Completed	08/22/2014	08/22/2014
Technical Review of Other Report Type Not Listed Completed	08/18/2014	08/18/2014
Technical Review of Annual or Semi Annual Report Completed	07/01/2014	07/02/2014
Technical Review of Monitoring Report Completed	06/30/2014	06/30/2014
Technical Review of Other Report Type Not Listed Completed	01/27/2014	02/28/2014
Technical Review of Other Report Type Not Listed Completed	01/20/2014	01/30/2014
Technical Review of Other Report Type Not Listed Completed	12/04/2013	12/09/2013
Technical Review of Annual or Semi Annual Report Completed	10/16/2013	11/06/2013
Technical Review of Annual or Semi Annual Report Completed	10/02/2013	10/02/2013
Technical Review of Other Report Type Not Listed Completed	09/19/2013	08/08/2014
Technical Review of Other Report Type Not Listed Completed	09/18/2013	08/08/2014
Technical Review of Annual or Semi Annual Report Completed	09/18/2013	09/18/2013
Technical Review of Other Report Type Not Listed Completed	07/22/2013	08/07/2013
Feasibility Study Reviewed	07/05/2013	07/31/2013
Technical Review of Annual or Semi Annual Report Completed	06/06/2013	07/12/2013
Technical Review of Other Report Type Not Listed Completed	02/07/2013	04/07/2013
Technical Review of Annual or Semi Annual Report Completed	12/10/2012	02/10/2013
Technical Review of Other Report Type Not Listed Completed	10/29/2012	12/29/2012
Technical Review of Other Report Type Not Listed Completed	10/29/2012	10/30/2012
Technical Review of Other Report Type Not Listed Completed	10/19/2012	12/19/2012
Technical Review of Other Report Type Not Listed Completed	10/12/2012	12/12/2012
Technical Review of Other Report Type Not Listed Completed	09/19/2012	11/19/2012
Technical Review of Other Report Type Not Listed Completed	08/02/2012	10/02/2012
Technical Review of Annual or Semi Annual Report Completed	07/03/2012	07/09/2012
Technical Review of Other Report Type Not Listed Completed	06/30/2012	09/07/2012
Technical Review of Other Report Type Not Listed Completed	06/22/2012	08/22/2012
Technical Review of Other Report Type Not Listed Completed	06/06/2012	08/06/2012
Technical Review of Other Report Type Not Listed Completed	06/01/2012	08/01/2012
Technical Review of Other Report Type Not Listed Completed	05/29/2012	07/29/2012
Technical Review of Other Report Type Not Listed Completed	05/18/2012	07/18/2012
Technical Review of Other Report Type Not Listed Completed	05/11/2012	07/20/2012
Technical Review of Other Report Type Not Listed Completed	05/07/2012	07/07/2012
Technical Review of Other Report Type Not Listed Completed	04/26/2012	06/26/2012
Technical Review of Annual or Semi Annual Report Completed	04/23/2012	06/23/2012

Technical Review of Other Report Type Not Listed Completed	04/17/2012	06/17/2012
Technical Review of Other Report Type Not Listed Completed	04/17/2012	04/18/2012
Technical Review of Other Report Type Not Listed Completed	04/09/2012	06/09/2012
Technical Review of Other Report Type Not Listed Completed	04/09/2012	04/09/2012
Technical Review of Other Report Type Not Listed Completed	03/05/2012	05/05/2012
Technical Review of Other Report Type Not Listed Completed	02/06/2012	04/06/2012
Technical Review of Other Report Type Not Listed Completed	02/02/2012	04/02/2012
Technical Review of Annual or Semi Annual Report Completed	01/19/2012	03/27/2012
Technical Review of Annual or Semi Annual Report Completed	01/04/2012	04/02/2012
Technical Review of Other Report Type Not Listed Completed	12/06/2011	01/25/2012
Technical Review of Annual or Semi Annual Report Completed	11/02/2011	11/05/2011
Technical Review of Annual or Semi Annual Report Completed	10/24/2011	03/28/2012
Technical Review of Other Report Type Not Listed Completed	10/21/2011	11/01/2011
Technical Review of Other Report Type Not Listed Completed	10/11/2011	11/01/2011
Technical Review of Other Report Type Not Listed Completed	09/26/2011	10/31/2011
Technical Review of Other Report Type Not Listed Completed	09/09/2011	11/01/2011
Annual or Semi Annual Report Reviewed	09/06/2011	03/27/2012
Technical Review of Annual or Semi Annual Report Completed	09/06/2011	03/27/2012
Technical Review of Other Report Type Not Listed Completed	08/31/2011	10/10/2011
Technical Review of Annual or Semi Annual Report Completed	05/25/2011	05/25/2011
Other Report Type Not Listed Reviewed	09/14/2010	09/21/2010
Drinking Water Advisory Issued	06/15/2010	06/15/2010
Annual or Semi Annual Report Reviewed	04/29/2010	05/11/2010
Technical Review of Annual or Semi Annual Report Completed	04/29/2010	05/11/2010
Annual or Semi Annual Report Reviewed	04/19/2010	05/05/2010
Technical Review of Annual or Semi Annual Report Completed	04/19/2010	05/05/2010
Access Agreement Executed	03/12/2010	03/12/2010
Annual or Semi Annual Report Reviewed	03/12/2010	03/12/2010
Technical Review of Annual or Semi Annual Report Completed	03/12/2010	03/12/2010
Technical Review of Work Plan Completed	02/03/2010	02/03/2010
Work Plan Reviewed	02/03/2010	02/03/2010
Technical Review of Work Plan Completed	01/29/2010	02/02/2010
Work Plan Reviewed	01/29/2010	02/02/2010
Technical Review of Other Report Type Not Listed Completed	01/27/2010	05/14/2010
Other Report Type Not Listed Reviewed	01/25/2010	01/25/2010
Technical Review of Other Report Type Not Listed Completed	01/25/2010	01/25/2010
Annual or Semi Annual Report Reviewed	11/25/2009	11/25/2009
Technical Review of Annual or Semi Annual Report Completed	11/09/2009	11/09/2009
Technical Review of Annual or Semi Annual Report Completed	11/05/2009	11/06/2009
Feasibility Study Reviewed	10/20/2009	10/20/2009
Technical Review of Monitoring Report Completed	08/20/2009	08/24/2009
Technical Review of Other Report Type Not Listed Completed	07/23/2009	10/16/2009
Annual or Semi Annual Report Reviewed	06/26/2009	09/09/2009
Access Agreement Executed	05/15/2009	05/15/2009
Other Report Type Not Listed Reviewed	04/16/2009	04/16/2009
Technical Review of Annual or Semi Annual Report Completed	03/31/2009	05/18/2009
Annual or Semi Annual Report Reviewed	03/25/2009	09/09/2009
Feasibility Study Reviewed	03/06/2009	06/28/2009
Technical Review of Other Report Type Not Listed Completed	01/29/2009	06/28/2009
Technical Review of Annual or Semi Annual Report Completed	01/02/2009	04/01/2009
Technical Review of Other Report Type Not Listed Completed	12/30/2008	01/16/2009
Technical Review of Annual or Semi Annual Report Completed	06/21/2008	10/21/2008
Operation & Maintenance Report Reviewed	03/17/2008	05/25/2016
Access Agreement Executed	12/06/2007	12/06/2007
Access Agreement Executed	12/05/2007	12/05/2007
Other Report Type Not Listed Reviewed	12/05/2007	12/05/2007
Feasibility Study Reviewed	11/11/2007	03/04/2008
Monitoring Report Reviewed	11/01/2007	11/01/2007

Technical Review of Other Report Type Not Listed Completed	09/27/2007	10/22/2007
Record of Decision (ROD) Issued	07/13/2007	07/13/2007
Technical Review of Other Report Type Not Listed Completed	06/29/2007	08/24/2007
EPA Five Year Review Completed	03/29/2007	03/29/2007
Public Meeting Conducted	03/12/2007	03/12/2007
Remedial Design Reviewed	11/08/2006	11/08/2007
Monitoring Report Reviewed	10/17/2006	10/17/2006
Other Report Type Not Listed Reviewed	10/17/2006	10/17/2006
Work Plan Reviewed	10/17/2006	10/17/2006
Remedial Design Reviewed	08/01/2006	09/30/2007
Monitoring Report Reviewed	06/30/2006	10/17/2006
MDH Well Advisory / Special Well Construction Area Established	06/05/2006	06/05/2006
Other Report Type Not Listed Reviewed	05/26/2006	10/17/2006
Remedial Design Reviewed	05/26/2006	05/26/2006
Work Plan Reviewed	05/15/2006	10/17/2006
Other Report Type Not Listed Reviewed	04/27/2006	10/17/2006
Work Plan Reviewed	03/30/2006	03/30/2006
Phase II Work Plan Reviewed	03/28/2006	03/28/2006
Quality Assurance Project Plan (QAPP) Reviewed	03/28/2006	03/28/2006
Remedial Investigation Report Reviewed	03/28/2006	03/28/2006
Technical Review of Phase II Work Plan Completed	03/28/2006	03/28/2006
Technical Review of Remedial Investigation Report Completed	03/28/2006	03/28/2006
Work Plan Reviewed	03/28/2006	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	03/08/2006	03/28/2006
Work Plan Reviewed	03/03/2006	10/17/2006
Technical Review of Annual or Semi Annual Report Completed	02/15/2006	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	12/12/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	08/05/2005	03/28/2006
Annual or Semi Annual Report Reviewed	07/12/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	07/12/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	07/05/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	06/06/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	04/05/2005	03/28/2006
Feasibility Study Reviewed	02/23/2005	03/28/2006
Feasibility Study Reviewed	02/23/2005	02/23/2005
Other Report Type Not Listed Reviewed	02/15/2005	03/28/2006
Technical Review of Other Report Type Not Listed Completed	02/15/2005	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	01/06/2005	03/28/2006
Other Report Type Not Listed Reviewed	10/08/2004	03/28/2006
Technical Review of Other Report Type Not Listed Completed	10/08/2004	03/28/2006
Monitoring Report Reviewed	10/01/2004	03/28/2006
Technical Review of Monitoring Report Completed	10/01/2004	03/28/2006
MDH Health Evaluation/Consultation Completed	09/01/2004	09/01/2004
Feasibility Study Reviewed	08/27/2004	03/28/2006
Date of Discovery	08/15/2004	08/31/2004
Monitoring Report Reviewed	07/02/2004	03/28/2006
Technical Review of Monitoring Report Completed	07/02/2004	03/28/2006
Remedial Investigation Report Reviewed	07/01/2004	03/28/2006
Technical Review of Remedial Investigation Report Completed	07/01/2004	03/28/2006
Other Report Type Not Listed Reviewed	04/30/2004	03/28/2006
Technical Review of Other Report Type Not Listed Completed	04/30/2004	03/28/2006
Annual or Semi Annual Report Reviewed	02/13/2004	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	02/13/2004	03/28/2006
Date of Discovery	02/01/2004	05/25/2016
Phase II Work Plan Reviewed	12/18/2003	03/28/2006
Technical Review of Phase II Work Plan Completed	12/18/2003	03/28/2006
MDH Well Advisory / Special Well Construction Area Established	09/23/2003	07/31/2007
Technical Review of Remedial Investigation Report Completed	07/02/2003	07/07/2003

Request for Information Issued	07/01/2003	05/25/2016
Remedial Investigation Report Reviewed	06/25/2003	06/25/2003
Remedial Investigation Report Reviewed	05/01/2003	05/25/2016
Remedial Investigation Report Reviewed	02/05/2003	03/28/2006
Technical Review of Remedial Investigation Report Completed	02/05/2003	03/28/2006
Annual or Semi Annual Report Reviewed	01/01/2003	01/01/2003
Annual or Semi Annual Report Reviewed	12/31/2002	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	12/31/2002	03/28/2006
Other Report Type Not Listed Reviewed	10/21/2002	03/28/2006
Technical Review of Other Report Type Not Listed Completed	10/21/2002	03/28/2006
Other Report Type Not Listed Reviewed	09/01/2002	09/01/2002
Feasibility Study Reviewed	08/15/2002	05/25/2016
Response Action Plan (RAP) Reviewed	04/25/2002	04/25/2002
Remedial Investigation Report Reviewed	03/03/2002	06/01/2005
Declaration of Emergency Or Imminent Hazard Issued	02/25/2002	05/25/2016
Drinking Water Advisory Issued	02/15/2002	07/01/2007
MDH Well Advisory / Special Well Construction Area Established	02/15/2002	06/05/2002
Drinking Water Advisory Issued	02/02/2002	05/25/2016
RAP Implementation Report Reviewed	12/21/2001	03/28/2006
Technical Review of RAP Implementation Report Completed	12/21/2001	03/28/2006
Technical Review of Annual or Semi Annual Report Completed	12/15/2001	07/03/2002
Technical Review of Other Report Type Not Listed Completed	12/01/2001	07/03/2002
Response Action Plan (RAP) Reviewed	08/31/2000	03/28/2006
Technical Review of Response Action Plan (RAP) Completed	08/31/2000	03/28/2006
Annual or Semi Annual Report Reviewed	05/26/2000	05/26/2000
Tritec TA Letter Issued	05/25/2000	05/25/2000
Feasibility Study Reviewed	04/01/1999	04/05/2000
Feasibility Study Reviewed	03/03/1999	04/01/1999
Feasibility Study Reviewed	06/10/1998	05/25/2016
Completeness Determined	06/10/1998	06/10/1998
Referred from MPCA Site Assessment	06/10/1998	06/10/1998
Remedial Investigation Report Reviewed	01/01/1998	12/30/2001
Remedial Investigation Report Reviewed	07/07/1996	03/28/2006
Site Listed on National Priorities List (NPL)	12/16/1994	12/16/1994
Other Report Type Not Listed Reviewed	11/18/1992	03/28/2006
Site Scored	09/30/1991	05/25/2016
Request for Remedial Action (RFRA) Issued	08/31/1991	08/31/1991
Other Report Type Not Listed Reviewed	02/24/1989	03/28/2006
Site Delisted from the Permanent List of Priorities (PLP)	12/30/1988	12/30/1988
MDH Well Advisory / Special Well Construction Area Established	05/06/1988	02/14/2002
Application/Notification/Registration Received	12/11/1980	12/11/1980

Links to Additional Data Sources

- EPA CERCLIS Project Data - 0505340

Water Quality

Wastewater - MNG790156 - Industrial NPDES/SDS Permit

Baytown TWP Groundwater Contamination

Status: Active

Industrial wastewater facilities may include factories, mines and other privately owned facilities, as well as drinking water treatment plants and city pesticide application activities. Facilities that discharge directly to surface water require a NPDES/SDS permit, whereas those that do not may require an SDS permit.

Events

Event	Start	End
Coverage Issuance	04/30/2011	12/31/2023
Coverage Issuance	11/27/2007	04/29/2011

Links to Additional Data Sources

- Wastewater data browser

Contact

Records managers

Records managers are MPCA staff that will help you to access files relating to this site. To request their help, visit our information request page to learn about the process or simply fill out an information request form.

Program contacts

Contact these MPCA staff if you have more specific questions about these activities.

Contact	Phone	Contact Description
Eric Pederson	651-757-2645	Brownfields Project Manager
Regina Small	651-757-2382	Hazardous Waste Data Management
Mark Elliott	218-302-6649	Superfund Hydrologist
Eric Pederson	651-757-2645	Superfund Project Manager
Kaitlin Jamieson	651-757-2306	Wastewater Compliance Staff

Alternate Name

Alternate Name or ID	Description
BF0000418	Brownfields Preferred ID
MND982425209	CERCLIS/SEMS Preferred ID
0505340	EPA CERCLIS Site ID
MND982425209	EPA ID
SR84	Former Superfund Preferred ID
MND982630840	Hazardous Waste Preferred ID
MNS000105718	Hazardous Waste Preferred ID
414	MES Link ID
21451	MPCA Agency Interest ID
MND982630840	Previous Name
MND982630840	Previous Name
MNS000105718	Previous Name
SR0000084	Superfund Preferred ID
MNG790156	WW MNG79 General Permit Number

Owners

Owner or Primary Contact:
Craig Dawson
MPCA
Mark C Elliott
Minnesota Pollution Control Agency
Unknown

Former Owner or Primary Contact:
Bill Hagberg
The Hand Spa

Documents

These files do not necessarily represent the MPCA's full set of public records for this site.

To request more records, visit our information request page to learn about the process or simply fill out an information request form.

EPA United States Environmental Protection Agency

Envirofacts

Search Results

RCRAInfo

Data Disclaimer

RCRAInfo Facility Information

<< Return

RCRAInfo Links

- Overview
- Search
- Model
- RCRAInfo Search User Guide
- Contact Us
- Office of Resource Conservation and Recovery Home

Report an Error

BAYTOWN TOWNSHIP GW CONTAMINATION SITE
Handler ID: MNS000105718
SEE LOCATION DESCRIPTION
LAKE ELMO, MN 55042

County Name: WASHINGTON

Latitude: 44.996163
Longitude: -92.857842

Hazardous Waste Generator:

Owner Name: MINNESOTA POLLUTION CONTROL AGENCY

You can navigate within the map with your mouse.

No BIENNIAL REPORT data is available for the facility listed above.

LIST OF FACILITY CONTACTS

NAME	STREET	CITY	STATE	ZIP CODE	PHONE	TYPE OF CONTACT
RICHARD BAXTER	520 LAFAYETTE RD N	ST. PAUL	MN	55155	651-297-8471	Public
RICHARD BAXTER	520 LAFAYETTE RD N	ST. PAUL	MN	55155	651-297-8471	Permit

HANDLER / FACILITY CLASSIFICATION

Unspecified Universe for the facility listed above.

HANDLER TYPE
Not in a universe

No PROCESS INFORMATION is available for the facility listed above.

No NAICS Codes are available for the facility listed above.

No Waste Codes are available for the facility listed above.

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THIRD FIVE-YEAR REVIEW REPORT FOR BAYTOWN TOWNSHIP GROUNDWATER PLUME SUPERFUND SITE WASHINGTON COUNTY, MINNESOTA

Prepared by

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

Margaret M. Guerriero, Acting Director
Superfund Division
U.S. Environmental Protection Agency

3/28/2017
Date

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LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CCl_4	Carbon Tetrachloride
CFR	Code of Federal Regulations
cis 1,2-DCE	cis 1,2-dichloroethene
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
ERD	Enhanced Reductive Dechlorination
ESD	Explanation of Significant Differences
EVO	Emulsified Vegetable Oil
FFS	Focused Feasibility Study
FYR	Five-Year Review
GAC	Granular Activated Carbon
HBV	Health-Based Value
HRL	Health Risk Limit
ICs	Institutional Controls
IREL	Interim Recommended Exposure Limit
ISCO	In-situ Chemical Oxidation
LTS	Long-term Stewardship
MAC	Metropolitan Airports Commission
MCL	Maximum Contaminant Level
µg/L	Micrograms per liter
MDH	Minnesota Department of Health
MGS	Minnesota Geological Survey
MPCA	Minnesota Pollution Control Agency
MW	Monitoring Well
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
RAO	Remedial Action Objectives
RAP	Remedial Action Plan
ROD	Record of Decision
Site	Baytown Township Groundwater Plume Superfund Site
SWBCA	Special Well and Boring Construction Area
TCE	Trichloroethylene
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The United States Environmental Protection Agency (EPA) is preparing this FYR pursuant to Section 121 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), consistent with the National Contingency Plan (NCP)(40 C.F.R. Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the third FYR for the Baytown Township Groundwater Plume Superfund Site (Site).[1] The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site was originally managed as one operable unit (OU) but currently consists of three OUs, all of which are addressed in this FYR. OU1 concerns groundwater. OU2 concerns the City of Bayport municipal wells. OU3 concerns the source area. The Minnesota Pollution Control Agency (MPCA) is the lead agency managing cleanup of the Site. MPCA requested that EPA lead the FYR.

This FYR was led by Leah Evison, EPA Remedial Project Manager. Participants included Teresa Jones, EPA Community Involvement Coordinator, Eric Pederson, MPCA Project Leader and Kurt Schroeder and Mark Elliott, MPCA Hydrogeologists. The review began on September 12, 2016.

MPCA concurs with the findings of this FYR, including the recommendations and protectiveness statements.

Site Background

The Site is located in central Washington County, Minnesota and extends from the eastern portion of the City of Lake Elmo through Baytown Township, West Lakeland Township and parts of the City of Bayport to the St. Croix River. The plume of contaminated groundwater is approximately five miles long and covers approximately seven square miles (Figure 1). The area of the Site includes predominantly low-density residences and agricultural land, but also includes the general aviation Lake Elmo Airport and parts of the cities of Lake Elmo and Bayport. The primary source of the contamination was a metal working facility that operated from 1940 to 1968 at 11325 Stillwater Boulevard N in Lake Elmo. The property is currently occupied by a convenience store and meat market (Hagberg's Country Market), a gasoline filling station, and other small businesses.

Groundwater at the Site is currently used as a drinking water source for rural residences and commercial buildings in the area and by the City of Bayport. The dominant groundwater flow direction is to the east toward the St. Croix River. A public water supply is available in portions of the cities of Lake Elmo and Bayport, but most of the plume area is served by private wells. The Site affects a large number of private wells and several public wells in the City of Bayport. The City of Lake Elmo drinking water wells are upgradient of the Site and not affected.

[1] This Site is tracked by MPCA as the Baytown Township Groundwater Contamination Site.

MPCA is the lead agency for remedial action at the Site and EPA is the support agency. The Site was previously included in the Enforcement Deferral Pilot Project described in a June 20, 1995, agreement between EPA and MPCA. EPA and MPCA subsequently agreed to remove the Site from the Project and to proceed under a State Superfund Contract dated March 26, 2008 and amended December 11, 2014.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Baytown Township Groundwater Plume		
EPA ID: MND982425209		
Region: 5	**State:** MN	**City/County:** Baytown Township/Washington County
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA *[If "Other Federal Agency", enter Agency name]*:		
Author name (Federal or State Project Manager): Leah Evison		
Author affiliation: US EPA		
Review period: 9/12/2016 – 2/15/2017		
Date of site inspection: 1/4/2017		
Type of review: Statutory		
Review number: 3		
Triggering action date: 3/29/2012		
Due date *(five years after triggering action date)*: 3/29/2017		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Trichloroethylene (TCE) was found in groundwater in the area of the Lake Elmo Airport at concentrations up to 138 micrograms per liter (µg/L) in the Prairie du Chien Dolomite aquifer and up to 62 µg/L in the Jordan Sandstone aquifer. TCE was also found in residential drinking water wells, including at concentrations up to 86 µg/L in a residential well located approximately 700 feet east of the Lake Elmo Airport. These levels exceeded the State drinking water standards

and the Federal Maximum Contaminant Level (MCL) and presented an unacceptable risk to those using groundwater as a source of drinking water. The Record of Decision (ROD) also documented the presence of low levels of carbon tetrachloride (CCl_4) in groundwater at the Site.

Response Actions

In 1988, the Minnesota Department of Health (MDH) created a Special Well Construction Area (now known as a Special Well and Boring Construction Area or SWBCA) for the Site to inform well owners and drillers about the potential for contaminated groundwater in the area, to prevent further degradation of the aquifers and to place special restrictions on the construction of new wells in the area. The Site was listed on the State Superfund Permanent List of Priorities List in 1988 and added to the Federal National Priorities List in 1994. MPCA assumed responsibility for regulatory oversight of the Site in 1995 through the MPCA Enforcement Deferral Pilot Project, under which the EPA deferred on-site decisions to the MPCA. Following an initial Remedial Investigation/Feasibility Study by the Metropolitan Airport Commission (MAC), MPCA identified the primary source area, that had no viable potentially responsible party, and assumed responsibility for further work at the Site. In 2008, the Site was removed from the Enforcement Deferral Pilot Project and became eligible for Fund-financing under a State Superfund Contract. MPCA remains the lead agency managing cleanup at the Site.

ROD

On May 25, 2000, MPCA signed a Site-wide ROD. EPA concurred with the ROD on March 3, 2008, following removal of the Site from the Enforcement Deferral Pilot Project. The Declaration section of the ROD describes the Remedial Action Objectives (RAOs) as follows:

- Prevent the use of groundwater that has concentrations exceeding the MDH Health Risk Limit (HRL); and
- Prevent further degradation of the aquifer.

The State of Minnesota drinking water standards applicable to private wells (HRLs) are cited by the ROD as an Applicable or Relevant and Appropriate Requirement (ARAR). At the time of the ROD, the HRL for TCE was 30 µg/L and the MCL for TCE was 5 µg/L. MPCA did not consider Federal drinking water standards (MCLs) as an ARAR to their action for treatment of private wells. Instead, in its response to comments, MPCA indicated that private well owners may choose privately to install treatment to meet MCLs. The trigger for treatment under the ROD was lowered in a later ROD Amendment and Explanation of Significant Difference (ESD), discussed further below.

The declaration section of the ROD describes the major remedial components as follows:

To implement the selected remedy, the MAC shall:

- Install and maintain granular activated carbon (GAC) units on private wells that have TCE and/or CCl_4 concentrations that exceed MDH HRLs or the HRL additivity index. Provide GAC unit maintenance procedures and carbon change out when TCE or CCl_4 is detected in GAC effluent. GAC unit maintenance and effluent sampling schedules shall be specified in a Response Action Plan prepared by MAC and approved by MPCA;
- Conduct long-term monitoring of private water supply wells and monitoring wells to evaluate the need for treatment, and clearly define the north and south

edges of the plume. Provide groundwater monitoring to evaluate how the plume responds to any new residential and municipal demand. The monitoring locations and frequency shall be specified in a Remedial Action Plan (RAP) prepared by MAC and approved by the MPCA;

- Conduct long-term monitoring of private water supply wells and monitoring wells to record TCE/CCl_4 plume behavior, and prepare an annual report to discuss the results, including whether the plume has migrated vertically or horizontally. If the plume has migrated, the report will discuss the impacts of the migration and what actions, if any, are required to control migration. If additional measures are required, the MAC will implement them upon MPCA approval;
- Continue to closely monitor wells with increasing TCE concentrations approaching the HRL, but not yet exceeding it, in anticipation of possible HRL exceedances, and be prepared to install GAC units on these wells. The monitoring schedule and GAC unit installation schedule pertaining to this item shall be specified in a RAP prepared by MAC and approved by the MPCA;
- Maintain ongoing evaluation of existing and emerging technologies that may provide source location and removal, or control. Provide annual summary reports evaluating the feasibility of these technologies in bringing about reduced remediation needs and/or expediting site delisting. Implement such technologies if they are feasible based on the criteria established in the April, 1999, Feasibility Study and the MPCA's recommendation;
- Remove pump, inspect, sample and abandon the unused irrigation well located on the Schiltgen property. Details of the abandonment procedure will be presented in the RAP. The MPCA, MDH, and the Minnesota Geological Survey (MGS) shall be notified two weeks prior to this action so that arrangements may be made for logging the borehole prior to abandonment;
- Evaluate the need for, and install if necessary, down-gradient monitoring points. Details of this evaluation shall be specified in a RAP prepared by MAC and approved by the MPCA;
- Develop a groundwater model in cooperation with the MPCA and MDH or modify an existing groundwater model, as determined and approved by the MPCA, to evaluate future chemical fate and transport scenarios, especially the potential for further horizontal and vertical migration of the Baytown plume due to future local and regional groundwater supply demands. The results of this evaluation will be used by MPCA to identify the need for additional measures that may be necessary to mitigate future migration of contaminants. The criteria in the April, 1999, Feasibility Study and the MPCA Risk Based Guidance will be used to determine the need for additional measures. A schedule for completion of the groundwater model will be specified in the RAP prepared by MAC and approved by the MPCA;
- Maintain the MDH Special Well Construction Advisory. Provide driller standby fees when MDH and/or the MGS log selected pre-1990 wells during homeowner initiated pump maintenance/replacement procedures. In the

annual report, discuss the adequacy of the SWCA and whether or not additional measures are needed; and

- Remain current with the latest TCE health risk information, specifically EPA's pending revisions of the toxicity values for TCE ingestion, inhalation and dermal exposure. If new information warrants it, MDH may consider a revision to the current TCE HRL. If the HRL is revised in a direction that results in additional private wells exceeding the revised HRL, MAC shall provide carbon filtration systems for these additional residences. If a pending downward revision to the HRL is drafted by the MDH, but not yet finalized, MAC shall identify the additional residences which will qualify for GAC units, and be prepared to have the new GAC units installed and operating no later than 30 days after the revised HRL is finalized.

The remedy was intended mainly to address TCE. Only two residential wells exceeded the HRL for CCl_4, both by small amounts, and these two wells also exceeded the HRL for TCE.

ROD Amendment

Between 2003 and 2006, MPCA conducted additional investigations at the Site and determined that the major source area lay upgradient of the airport. This led to a remedy modification and a change from MAC to State implementation of the remedy.

On July 13, 2007, MPCA signed a ROD Amendment modifying the remedy for the Site. In a letter dated March 3, 2008, EPA notified MPCA of its intention to remove the Site from the enforcement deferral pilot and proceed under a State Superfund Contract. In the same letter, EPA concurred with the ROD Amendment and the ROD.

The ROD Amendment addressed the entire Site and served to clarify the original remedy, in addition to documenting changes to the remedy. The ROD Amendment separates the Site into three OUs:

- OU1 – Private wells and groundwater plume
- OU2 – City of Bayport municipal wells
- OU3 – Source area

RAOs stated in the ROD Amendment include:

- Minimize migration of the contaminant plume;
- Restore the aquifer to drinking water standards; and
- Reduce the time for down-gradient private wells to remain on GAC filters.

The ROD Amendment did not explicitly specify a change in ARARs, but did change the trigger for treatment of private drinking water to a new Interim Recommended Exposure Limit (IREL) issued by MDH that was the same value as the MCL for TCE (5 µg/L). The ROD Amendment also cited MCL exceedances as the trigger for adding additional treatment for a City of Bayport municipal well.

The Declaration section of the ROD Amendment describes the amended selected remedy as follows:

> OU1: Continue monitoring of private wells, sampling of private water supply wells, and installation, change out, maintenance and removal of GAC filter systems as previously designated in the ROD. (In addition, the Site History

section of the ROD Amendment explains that the responsibility for implementing the OU1 remedy was transferred from the MAC to MPCA.)

OU2: Design and installation of an air stripping treatment system at Bayport Municipal Well #2. The City of Bayport is responsible for ongoing Operation and Maintenance (O&M) of the Municipal Well #2 air stripper as designated in the April 5, 2006, Grant Agreement and September 26, 2006, Grant Agreement Amendment.

OU3: Containment and treatment of the primary source area–a former metal working shop located at 11325 Stillwater Boulevard in Lake Elmo. A two prong approach will be implemented for OU3 as follows:

1. Containment (hydraulic barrier)

   The MPCA will install a hydraulic barrier to contain the TCE plume and prevent off-site migration. The MPCA has completed the final design of a hydraulic barrier near the eastern OU3 property boundary. This barrier controls the groundwater gradient such that high concentrations of contamination are unable to continue to migrate to the east. It will consist of four extraction wells which pump groundwater to an air stripper to remove TCE from the water phase. The MPCA is currently evaluating options for disposal of the treated groundwater. Two options merit further review: infiltration just below the surface and injection at depth. One of these options will be selected to manage the treated water based on additional pre-design studies.

2. Source treatment

   Groundwater beneath the source zone will be treated using a treatment train approach consisting of in-situ technologies such as: physically extracting the volatile TCE by venting (multiphase extraction); biologically degrading the TCE by injecting carbon substrates and nutrients; and/or chemically destroying the TCE by injecting additives (chemical oxidation). The optimal treatment method will be determined by pre-remedial design bench-scale lab studies and pilot tests. Further, vapor control mitigation may be necessary based on ongoing assessments.

For OU1, the ROD Amendment changed the trigger for installation of GAC treatment for residential wells from the HRL to the State's newly-established IREL of 5 µg/L for TCE. The HRL continued to be an ARAR for the OU1 action.

For OU2, the ROD Amendment cited exceedances of the MCL for TCE (5 µg/L) as the trigger for treatment of City of Bayport municipal drinking water. The MCL is the regulatory standard for municipal drinking water.

For OU3, the ROD Amendment did not specify a groundwater cleanup level, although the RAO to return the aquifer to drinking water standards is a Site-wide RAO. Part I (F) of the ROD Amendment described the cleanup level for OU3 as follows:

> Cleanup levels at 11325 Stillwater Boulevard (source area) will be evaluated during the primary source area feasibility study. Residual concentrations of TCE in groundwater will be evaluated at 100; 1,000 and 10,000 µg/L, respectively. Allowing for natural attenuation, the goal is to achieve the IREL residential

drinking water standard in the down-gradient dissolved-phase plume by Manning Avenue.

While the timeframe to treat the source area may be relatively short (months to five years), the MPCA anticipates the hydraulic barrier system will be operated for a longer period (5 to15 years).

Part II (O) of the ROD Amendment documented the possible outcome of the source area remedy as follows:

> Identification of the primary source area of the TCE contamination has made reduction and possibly complete elimination of the primary source area possible. Reduction of the primary source area could make restoration of the aquifer quality, with respect to TCE concentrations, possible. As a result, use of GAC filters and the SWCA may ultimately become obsolete.

Explanation of Significant Differences

On July 14, 2015, MPCA signed an ESD further modifying the remedy for the Site. EPA signed the ESD on July 21, 2015. As explained in the ESD, a modification of the OU2 remedy was needed in order to protect public drinking water in the City of Bayport by connecting Municipal Well #3 to the existing water treatment facility. The ESD also served to document selected treatment methods, disposal methods, and the interim remediation goal for OU3 (source area). The ESD did not change the remedy for OU1.

The ESD modified the OU2 (City of Bayport municipal wells) remedy to require connection of Bayport Municipal Well #3 to the existing air stripper treatment system at Bayport Municipal Well #2, including:

- A pipeline conveyance system of roughly 3,000 feet from Well #3 to the existing treatment system at Well #2;
- Upgrades at Well #3 to facilitate conveyance, including well pump modifications, chemical feed modifications, and associated piping;
- Modifications to the existing air stripper treatment system and chemical feed system to accommodate Well #3 into the treatment process; and
- Modifications to add a backup generator for the air stripper system or, if more cost-effective, an interconnection to alternate backup water supply from the deeper Corrections Facility well.

The ESD documented the City of Bayport's agreement to maintain the new conveyance system and to continue to operate and maintain the treatment system.

The ESD modified the OU3 (source area) remedy to select the following discharge and treatment requirements:

- Treated water removed by the hydraulic barrier containment system is discharged on-site by infiltration through horizontal wells above the water table;
- Groundwater in the source zone, and, if present and to the extent technically practicable, dense non-aqueous phase liquid (DNAPL), is treated using in-situ chemical oxidation (ISCO) in the main source area and enhanced reductive dechlorination (ERD) in the southern source area;

- The interim remedial goal for treatment is 25 µg/L TCE in groundwater at the source zone property line, as determined by MPCA in a Focused Feasibility Study (FFS) dated June 2013. Reasonable efforts will be made to achieve the interim remedial goal, or, if practicable, drinking water standards; and
- If treatment does not achieve drinking water standards, as is likely, MPCA plans to propose a further remedy modification. If the modification includes a fundamental change to the remedy, for example a proposed waiver of drinking water standards for the source area based on technical impracticability, the public will be invited to comment on the proposed modification.

Status of Implementation

Remedy implementation is summarized by OU below:

OU1

OU1 consists of the private wells and the groundwater plume at the Site. Early phases of the remedy were implemented by MAC under agreements with MPCA, including installation of GAC treatment systems for down-gradient homes with private wells that exceeded a TCE concentration of 30 µg/L, as required by the ROD. With the ROD Amendment in 2000, MPCA changed the trigger for installation of GAC treatment for residential wells from 30 µg/L to 5 µg/L to meet a newly-established State IREL for TCE.

In 2003, Baytown Township and West Lakeland Township established ordinances that placed the responsibility for GAC installation and maintenance for homes platted after April 9, 2002, on the homeowner. Following discovery of a new primary source area not related to MAC in 2004, the responsibility for remedy implementation overall was shifted to the State, operating under a State Superfund Contract with EPA. The township ordinances placing responsibility for GAC installation and maintenance for homes platted after April 9, 2002, on the homeowner remain in place.

In 2013, MDH established a Health-Based Value (HBV) for TCE in drinking water of 0.4 µg/L. HBVs are non-promulgated advisory levels that MDH plans to promulgate as HRLs in the future. At that time, MPCA made a policy decision to begin installing GAC units for homes with drinking water wells that may exceed the HBV. In December 2015, the State of Minnesota promulgated the value of 0.4 µg/L TCE as a HRL.

Currently, MPCA (via a State contractor) samples private water supply wells, and installs, changes out, maintains, and removes GAC filter systems for private wells that exceed or may exceed the HRL. Current O&M procedures are documented in MPCA's Sampling and GAC Management Plan dated August 18, 2015. As of December 2016, MPCA maintains GAC filters in approximately 332 homes. There are an additional 24 homes with GAC filters that homeowners are responsible for maintaining because their properties were platted or subdivided and approved after April 9, 2002. (Four additional homeowners have chosen to voluntarily install GAC filters and have had no detection of TCE.)

MPCA also regularly monitors a network of approximately 43 groundwater monitoring wells in multiple aquifers. Most monitoring wells are near the source area, with the down-gradient areas of the plume monitored mainly through residential well sampling. Groundwater trends are discussed in the Data Review section of this FYR.

OU2

OU2 consists of the City of Bayport municipal drinking water wells. The City currently owns three drinking water production wells, #2, #3 and #4. All three wells draw water from the Tunnel City aquifer. Through the early 2000's, TCE was detected at low levels in several of the City's drinking water wells. Concentrations were rising most rapidly in Well #2 and by the mid-2000's, were in danger of exceeding the MCL. Following a ROD Amendment in 2007, MPCA and the City added an air stripper to the water treatment plant to remove TCE from Well #2. The air stripper was designed to treat a maximum future TCE concentration of 10 µg/L, which is approximately the maximum measured TCE concentration in the aquifer upgradient of Well #2. MPCA conducted a new source evaluation of the projected air concentration at the maximum groundwater concentration and determined that the air stripper did not present a risk. Following construction of the air stripper, Well #2 became the primary water supply for the City.

In 2014, MPCA and EPA determined that water from Well #3 was also in danger of exceeding the MCL. In 2015, with the support of the City and funding from the State, MPCA added conveyance piping to connect Well #3 to the existing air stripper. Details are discussed in the Progress Since Last Review section of this FYR. Currently, wells #2 and #3 supply the City's water, with Well #4 available for emergency backup. Currently Well #4 does not exceed the MCL for TCE, the regulatory level for municipal drinking water wells, although it does exceed the HRL.

OU3

OU3 consists of the source area at the Site, where higher concentrations of TCE are found in groundwater. DNAPL has not been found at the Site. In 2007, MPCA conducted a pilot study for treatment of source area groundwater using sodium permanganate injections for ISCO treatment. In 2008, MPCA installed and began operating a groundwater extraction and treatment system (hydraulic barrier) to contain source area groundwater. The hydraulic barrier system consists of four extraction wells, three located immediately downgradient of the source area and one located to the south, all at depths of approximately 80 feet. When the barrier is operating, the extracted groundwater is treated using a low-profile air stripper and solids filtration system and then discharged back to the ground using two horizontal infiltration pipes located at a depth of approximately 25 feet. The system treats extracted groundwater to a TCE concentration of 1 µg/L or less prior to discharge.

Between 2009 and 2014, MPCA conducted several rounds of additional soil probe sampling to better delineate the source area and installed five new monitoring wells in the source area. During this period, MPCA also conducted a FFS to evaluate additional in-situ treatment methods for the source area. In December 2014, MPCA shut down the hydraulic barrier system so that full-scale in-situ treatment of source area groundwater could be conducted without premature removal of the treatment materials. During shut-down, the wells were also rehabilitated.

MPCA began full-scale treatment of source area groundwater in 2015. MPCA conducted Phase 1 of source area treatment in January 2015 and Phase 2 treatment in May 2016. For Phase 1, MPCA tested two treatment methods, ISCO and ERD, and determined that ERD alone would be used for Phase 2. Results are discussed in the Data Review section of this FYR.

Prior to initiation of Phase 2 treatment, MPCA installed a vapor mitigation system for the commercial building overlying part of the source area. This was a precautionary measure to protect against potential contaminant vapors being released beneath the building during ERD treatment. Additional information about vapor intrusion investigations is available in the Data Review section of this FYR.

Institutional Controls

Institutional controls (ICs) are required by the ROD to restrict use of groundwater that exceeds the HRL and to assure the long-term protectiveness for groundwater which does not allow for UU/UE. ICs in place for the Site are listed in the table below. A map depicting the area of groundwater, which does not allow for UU/UE, is found in Figure 2.

Table 1: Institutional Controls Summary Table

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Document	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date
Groundwater – current area that exceeds 0.4 µg/L TCE (current HRL)	Yes	Yes	See Figure 2	Prevent exposure to contaminated groundwater from private wells and prevent spread of contaminated groundwater through improperly sealed wells	Baytown-West Lakeland Special Well and Boring Construction Area (SWBCA) (Minn. Rules, part 4725.3650) Modified March 30, 2005
Groundwater – area within the SWBCA that exceeds 0.1 µg/L TCE or 0.2 µg/L CCl_4	Yes	Yes	See Figure 2	Ensure GAC treatment is installed, monitored, and maintained for private wells in portion of Town of Baytown within the Baytown-West Lakeland SWBCA	Baytown Township Ordinance #52, enacted September 12, 2011 Modified November 2, 2015
Groundwater – area within the SWBCA that exceeds 0.1 µg/L TCE or 0.2 µg/L CCl_4	Yes	Yes	See Figure 2	Ensure GAC treatment is installed, monitored, and maintained for private wells in portion of Town of West Lakeland within the Baytown-West Lakeland SWBCA	West Lakeland Township Town Code Section 14, enacted October 4, 2011 Modified April 14, 2014
Groundwater – current area that exceeds 0.4 µg/L TCE (current HRL)	Yes	Yes	See Figure 2	Before signing an agreement to sell property in Washington County that is not served by a municipal water system, the seller must state in writing to the buyer whether the property is located within a special well construction area. If the disclosure under Section 103I.235 states that there is an unsealed well on the property, the disclosure required under this clause must be made regardless of whether the property is served by a municipal water system.	Minnesota Statutes Section 103I.236 dated 2016

As explained further in the Issues/Recommendations section of this FYR, the area of the plume immediately downgradient of the source area could be a source of vapor intrusion risk if it were developed. Currently this area of the plume is in agricultural use; however, it is zoned for Urban Low Density Residential use and is also included in the Lake Elmo Comprehensive Plan for Village Urban Low Density use. The comprehensive plan defines this use as single family housing serviced by public sewer and water. This issue was raised in the 2011 FYR and is included again as an issue in this FYR.

Current Compliance

During the period of this FYR, MPCA and MDH have not noted any compliance issues regarding the SWBCA. MDH notifies first-time owners of newly developed properties within the SWBCA of the presence of the SWBCA. MPCA and MDH have also not noted any compliance issues regarding State regulations listed in Table 1 with the exception of the requirement under Minnesota Statutes Section 103I.236. This statute requires sellers of property in Washington County not served by a municipal water system or that has an unsealed well, to state in writing to the buyer, whether, to the seller's knowledge, the property is located in a SWBCA. MDH and MPCA report that they receive approximately a half dozen calls each year from new homeowners that did not receive the required disclosure. When this occurs, MDH or MPCA explain the requirements of the SWBCA to the new homeowner.

Baytown Township and West Lakeland Township periodically update MDH regarding well sampling, GAC filter installation, and reminder notices for homeowners covered by the township ordinances. MDH has noted that updates during the period of this FYR have not been as regular as needed, and has noted some compliance issues. According to the most recent (2016) reports, approximately two dozen homes are affected in the townships. In Baytown Township, all affected homeowners have known TCE exceedances, and all have reported installation of GAC to the township; however, several appear to be more than one year behind in reporting required sampling and/or GAC changeout. In West Lakeland Township, MDH has recorded sample results for all known affected homes and none have detected TCE, so none have been required to install GAC. However, a significant percentage of homeowners (approximately one third) are more than one year late in reporting sampling. Both townships have sent reminder letters in the past, though not on a regular schedule. This has been added to the Issues and Recommendations section of this FYR.

IC Follow up Actions Needed

MPCA and MDH have discussed the issue of compliance with Minnesota Statutes Section 103I.236 and the township ordinances and plan to request follow-up meetings on both with the township boards. This is included in the Recommendations section of this FYR.

Long-term protectiveness requires continued compliance with the land and groundwater use restrictions to ensure that the remedy continues to function as intended. Long-term stewardship (LTS) will ensure that the ICs are maintained, monitored and enforced. Plans incorporating LTS procedures (for example, a LTS plan) should include the mechanisms and procedures for inspecting and monitoring compliance with the ICs as well as communications procedures. An annual letter report should be submitted to EPA to demonstrate: 1) that the Site was inspected to ensure no inconsistent uses have occurred; 2) that ICs remain in place and are effective; and 3) that any necessary contingency actions have been executed. Results of IC reviews should be provided to EPA in an annual ICs letter report and with a certification that the ICs remain in-place and are effective.

Groundwater – current area that exceeds 0.4 µg/L TCE (current HRL)	Yes	Yes	See Figure 2	Before signing an agreement to sell property, the seller must disclose information about the status and location of all known wells on the property.	Minnesota Statutes Section 1031.235 dated 2016

On May 6, 1988, MDH issued a Well Advisory, the SWBCA, for parts of Baytown Township and parts of the City of Bayport. The SWBCA was revised in 2002 to include parts of West Lakeland Township (extending the SWBCA south to 20th Street North), and revised again in March 2005 to include a part of the City of Lake Elmo that included the newly-discovered source area. Under the current SWBCA, a property owner and a licensed well contractor must submit a written request to construct or permanently seal a well in the SWBCA. Before permission to construct a well is granted by MDH, the well owner must agree to pay for a volatile organic compound (VOC) analysis on the water and abide by conditions of the approval. Except for certain locations, a new well in unconsolidated deposits is not allowed. The Prairie du Chien aquifer is not allowed for new potable water use in the SWBCA. In the areas of the SWBCA that the deeper Franconia aquifer is present, MDH generally requires new drinking water wells to be completed in that aquifer. Where it is not present, generally MDH allows new wells to be completed in the Jordan aquifer, with a requirement for installation of a GAC filter.

The Baytown Township and West Lakeland Township have established ordinances that require homeowners within the area covered by the SWBCA to install GAC systems if the water from newly installed wells exceeds 0.1 µg/L TCE or 0.2 µg/L CCl_4. Both action levels are below the HRL for these contaminants. The township ordinances apply to homes within the SWCBA on properties that were platted or subdivided after April 9, 2002. (For properties platted prior to this date, MPCA conducts GAC installation and maintenance.) The ordinances require all wells with GAC systems that are covered by the ordinance to be inspected by a licensed plumber or licensed water conditioning contractor and require that carbon filters be replaced every three years, with proof of replacement reported to the Township. The ordinances also require that wells that currently do not have a GAC filter be tested every two years. Washington County currently offers VOC sample collection for residents for a fee. The samples are analyzed by the MDH Public Health Laboratory and homeowners are notified of the results by letter from MDH.

Status of Access Restrictions and ICs

ICs for groundwater are currently in place for the Site. As described above, the township ordinances have been updated during the period of this FYR. The SWBCA was last updated in 2005 and has not been updated since that time because it encompassed the contaminant plume. However, the change in the HRL for TCE from 5 µg/L to 0.4 µg/L in 2015 led to an expansion in the area of the plume that exceeds the HRL. (The MCL remains at 5 µg/L.) The location of the current 0.4 µg/L plume boundary in relation to the boundary of the SWBCA is shown on Figure 2. At three locations it is likely that the current plume boundary extends slightly outside of the SWBCA. One location, on the south edge of the plume, is a known exceedance. The other two locations (on the south-western edge and on the north-eastern edge) are likely exceedances, but there is some uncertainty because the boundaries are based on extrapolations between wells. There is no current risk in these areas because MDH and MPCA are aware of the issue and have sampled additional wells to delineate the plume; however, MDH is evaluating whether expansion of the SWBCA is warranted. This has been added to the Issues and Recommendations section of this FYR.

Long Term Stewardship

Since compliance with ICs is necessary to ensure the protectiveness of the remedy, planning for LTS is required to ensure that the ICs are maintained, monitored and enforced so that the remedy continues to function as intended. MDH is responsible for maintaining, monitoring and enforcing the SWBCA, in coordination with MPCA. Baytown Township and West Lakeland Township are responsible for maintaining, monitoring and enforcing the township ordinances, with oversight by MDH. At the Site, LTS of ICs is assured by actions of the townships, MPCA and MDH; however, no written plan exists. This has been added to the Issues and Recommendations section of this FYR.

A LTS plan will be developed containing procedures for inspecting and monitoring compliance with the ICs, and requiring that an annual report be submitted to EPA to demonstrate that the Site was inspected, that no inconsistent uses have occurred, that ICs remain in place and are effective, and that any necessary contingency actions have been executed.

Systems Operation/Operation & Maintenance

OU1

For properties platted and approved prior to April 9, 2002, GAC units are installed and maintained by an MPCA contractor. The GAC systems generally consist of two 90-pound GAC canisters connected in series. O&M procedures for the GAC units are documented in periodic reports entitled *Program Review Residential Well Sampling and GAC Management*, most recently updated in 2015. GACs are changed-out according to a schedule based on TCE concentration of the well water and metered water usage. For systems sampled and maintained by MPCA, GAC is changed out every three and one half to six years. For systems maintained by homeowners, township ordinances require change-out every three years. Prior to change-out, samples are collected before the lead canister and between the lead and polishing canister. The samples are analyzed for VOCs to determine the effectiveness of the system. At change-out, the polishing canister is moved to the lead position and a new GAC canister is placed in the polishing position.

The MPCA contractor provides periodic reports of change-outs and sampling results during the year. MPCA maintains a database of sampling and maintenance results. Results indicate the GAC units are working effectively to protect water well users from TCE and confirm that O&M for OU1 is effective in maintaining the remedy.

OU2

The City of Bayport operates and maintains the City's drinking water treatment system, including the air stripper installed as part of the Site's remedy. Quarterly, the City monitors water quality in actively-used wells (Well #2 and #3) both before and after treatment. Annually, the City monitors the emergency well (Well #4) and reports results to MPCA and MDH. Sampling during the period of this FYR confirms that O&M for OU2 is effective in maintaining the remedy. The City's current typical operation includes either Well #2 or Well #3; however, occasionally both wells will operate. The air stripper is designed to accommodate a maximum flow of 1,000 gallons per minute with both wells operating; however, maintenance issues are likely if that flow rate is sustained. The City of Bayport operates and maintains the treatment system, with oversight of sampling results by MPCA and MDH.

OU3

During most of the period of this FYR, MPCA operated two groundwater extraction wells (RW-2 and RW-3) downgradient of the source area, and the air stripper and discharge system. These two wells capture groundwater from the major source areas at the Site. Well RW-1 is held in standby if needed. In 2012, RW-4 was converted to a monitoring well. The extraction system was shut down during treatment phases and the wells rehabilitated for future use as needed. Sampling results continue to be entered into MPCA's EQuIS database. Results during the period of this FYR are discussed in the Data Review section of this FYR and confirm that O&M for OU3 is effective in maintaining the remedy.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 3: Protectiveness Determinations/Statements from the 2012 FYR

OU #	Protectiveness Determination	Protectiveness Statement
OU1	Short-term Protective	The remedy at OU1 currently protects human health and the environment in the short term because residential water wells are being treated at the point of use to acceptable levels and the plume does not cause a current vapor intrusion risk. However, in order for the remedy to be protective in the long-term, the following actions need to be taken: (1) Identify additional wells that will require treatment following the upcoming change in Minnesota HRL for TCE and assess need to provide for interim protective measures such as bottled water and (for the long-term) installation of GAC treatment units for additional residences; (2) Update vapor intrusion assessment if conditions change; (3) Assess whether source area remedy and natural attenuation are sufficient to return plume to drinking water standards in a reasonable timeframe considering site-specific circumstances; and (4) Evaluate existing ICs and assess whether additional ICs are needed to ensure long-term protection.
OU2	Short-term Protective	The remedy for OU 2 currently protects human health and the environment in the short-term because it treats TCE in the municipal drinking water well to acceptable levels. However, in order for the remedy to be protective in the long-term, the following actions need to be taken: (1) Monitor TCE concentrations in Municipal Wells #3 and #4 relative to MCL and develop action plan for future protection; and (2) Evaluate existing ICs and assess whether additional ICs are needed to ensure long-term protection.

OU3	Short-term Protective	The remedy for OU3 currently protects human health and the environment in the short-term because it contains groundwater that exceeds action levels and does not cause a vapor intrusion risk. However, in order for the remedy to be protective in the long-term, the following actions need to be taken: (1) When HRL is revised, modify containment compliance criteria as needed; (2) Complete FFS to further assess in-situ treatment options and consider need for ARARs waiver due to DNAPL; (3) Resample subslab and indoor air at Hagberg's Country Market; and (4) Evaluate existing ICs and assess whether additional ICs are needed to ensure long-term protection.

Table 4: Status of Recommendations from the 2012 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
OU1	1. Insufficient tracking of new wells requiring GAC systems	Develop a tracking system for notification of MPCA/MDH for GAC system installation and system performance in post-2002 homes	Completed	MDH tracks sampling and GAC installation for new wells in a database created in 2006. Since the last FYR, MPCA has requested tracking results from MDH. (See additional detail in the ICs section of this FYR.)	10/30/2006
OU1	2. Additional private wells will need treatment if HRL is revised	Identify additional wells with TCE exceeding new HRL; assess need for interim protective measures; install GAC treatment; modify ROD as needed	Completed	MDH finalized the HRL revision in December 2015. MPCA completed installation of GAC for private wells that exceeded the new HRL on April 25, 2016.	4/25/2016
OU1	3. Current groundwater remedy has not been demonstrated as sufficient to reach MCLs throughout plume (e.g., Monitored Natural Attenuation)	Complete FFS; modify remedy as appropriate	Completed	MPCA completed a FFS for OU1 in June 2013 and determined that the current remedial approach remains the best alternative. Monitoring suggests that the hydraulic barrier has substantially reduced TCE concentrations in the downgradient plume and in-situ treatment has reduced concentrations in the source zone. (See additional detail below.)	6/30/2013
OU2	4. Increasing TCE trend in Bayport Municipal Wells #3 and #4 may require treatment in five years, or sooner if MCL is lowered.	Monitor TCE concentration relative to MCL and develop action plan for future protection	Completed	MPCA modified the OU2 remedy in July 2015 to select hookup of Well #3 to the existing air stripper and continued monitoring of Well #4. Remedial Action was completed in September 2016. (See additional detail in Remedy Implementation section of this FYR.)	9/30/2016
OU3	5. Modification of HRL for TCE may affect containment compliance criteria	Monitor and modify compliance criteria as needed	Ongoing	MDH finalized revised HRL in December 2015. Need for re-start of containment system currently based on trends in treatment area. (See	

				additional detail in Data Review section of this FYR.)	
OU3	6. In-situ treatment not yet fully implemented.	Complete FFS to further assess in-situ treatment and consider need for ARAR waiver due to DNAPL	Ongoing	FFS completed June 2013 documented no evidence of DNAPL. ESD signed July 2015 clarified interim cleanup goals. Two phases of treatment completed. (See additional detail in Data Review section of this FYR.)	
OU3 & OU1	7. Vapor intrusion risk needs updating	Resample subslab and indoor air at Hagberg's Country Market; re-evaluate VI risk throughout plume if conditions change	Completed	Additional sampling at Hagberg's confirmed current lack of risk; however, vapor mitigation system installed as a precautionary measure in May 2016 prior to Phase 2 treatment of source area. Vapor risk study for other potential areas of plume completed and confirmed lack of risk. (See additional detail below.)	5/30/2016
OU3	8. Potential redevelopment could result in unacceptable exposures to vapor intrusion	Assess need for additional ordinances	Ongoing	Groundwater data show an area downgradient of the source area that may present a vapor intrusion risk if redeveloped without controls in place. MPCA plans to discuss this with the City of Lake Elmo. (See additional detail in IC section of this FYR.)	
Site-wide	9. IC review needed to ensure effective ICs are in place and long-term stewardship is conducted	Prepare Institutional Controls Implementation and Assessment Plan	Considered But Not Implemented	MPCA, MDH, and local units of government coordinate regularly to ensure that ICs remain in place and are effective. MPCA, the lead agency implementing the remedy, determined that an Institutional Controls Implementation and Assessment Plan was not needed because its elements are already included in ongoing practice at the site, as described in the IC section of this FYR.	2/14/2017

Supplemental information about the current implementation status of several recommendations is presented below.

Recommendation 3

In a FFS completed in June 2013, MPCA re-evaluated alternatives for supplying clean drinking water to rural residents affected by the Site. Alternatives evaluated by MPCA included continued treatment for individual homes using GAC treatment implemented through several different contracting mechanisms, and construction of a rural community water treatment and delivery system to replace treatment in individual homes. In the FFS, MPCA concluded that the current remedy and implementation method remains the best alternative. The FFS noted administrative concerns and high costs associated with implementation of a rural community water system.

The FFS did not include further evaluation of natural attenuation of the plume because source area treatment is not yet complete. Although mechanisms of monitored natural attenuation have not been demonstrated for the Site, continued groundwater monitoring suggests that contaminant concentrations are in general decreasing, as discussed in the Data Review section of this FYR.

Recommendation 4

In 2014, MPCA conducted a FFS to evaluate alternatives to address the City of Bayport Wells #3 and #4. The goal of the FFS was to evaluate alternatives to prevent exposure to the public from TCE contaminated municipal water with TCE concentrations exceeding the Federal MCL, State HRL or State HBV. In 2015, with the support of the City and funding from the State, MPCA added conveyance piping to connect Well #3 to the existing air stripper. The treatment goal for the air stripper currently is 0.2 µg/L TCE, which is 50 percent of the HBV for TCE (0.4 µg/L) and well below the MCL of 5 µg/L. At the same time, MPCA performed upgrades on Well #3 to facilitate conveyance, modified the air stripper system to accommodate the additional water, and installed a backup generator for the air stripper.

Recommendation 7

A building overlying the source area is occupied by several small businesses, including Hagberg's Country Market. MPCA conducted additional subslab and indoor air testing for the building in 2015 and it is regularly re-tested. Results confirm the presence of volatile contaminants in the some subslab samples at levels above screening levels; however, no volatile contaminants are detected in indoor air. Due to a concern that ERD treatment of groundwater beneath the building could cause vapor intrusion risk, in June 2015, MPCA installed a sub-slab depressurization system for the building.

In 2015, MPCA conducted a vapor intrusion assessment for an area in the City of Bayport and an area near the Lake Elmo Airport where historical groundwater data indicated a potential vapor intrusion risk for residents. Soil gas sampling conducted in December 2015 included 16 monitoring points distributed throughout the identified area of the City of Bayport and two monitoring points near two residences adjacent to the Lake Elmo Airport. The sampling showed that a variety of volatile contaminants were present in the soil at very low levels, as is common in many developed areas; however, none of the contaminants exceeded MPCA or EPA health-based screening levels based on potential cancer and non-cancer risk for residential properties.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification and Involvement

A public notice entitled *EPA Begins Review of Baytown Township Groundwater Plume Superfund Site* was published in the St. Paul Pioneer Press on January 15, 2017, stating that there was a FYR and inviting the public to submit comments to EPA. No comments were received as a result of the notice. The results of the review and the report will be made available at the offices of MPCA located at 520 Lafayette Road North, St. Paul, Minnesota and on MPCA's and EPA's websites.

During the FYR site inspection, the site team met with the owner of Hagberg's Country Market and discussed the Site. A concern was raised about the placement of one of the vapor system pipes in the building. The pipe may interfere with plans for new market equipment. MPCA is following up with its contractor to address the concern.

Data Review

OU1

GAC Treatment

The enforceable standard for TCE in private drinking water, and the ARAR documented in the modified ROD for these wells, is the HRL of 0.4 µg/L. As of December 2016, GAC treatment is operating in approximately 356 homes with well water that exceeded the HRL for TCE. Of these, 332 were installed by MPCA and 24 were installed by homeowners. This is a substantial increase over the 180 GAC systems reported at the time of the last FYR. Many of the additional GAC systems were installed in response to the lowering of the HRL for TCE in private drinking water wells. In addition, the number reported in the last FYR did not include systems installed by homeowners.

In earlier years, a few residential wells slightly exceeded the HRL for CCl_4 and GAC systems were installed in those homes. However, the level of CCl_4 decreased over time and currently no homes have exceedances of the HRL.

Review of data tracked by MPCA and presented in annual reports indicates no evidence of exposure to TCE above the HRL in private drinking water wells monitored for the Site. The GAC remedy appears to be performing as intended to protect residents. However, there is a need to confirm this for systems installed by homeowners who did not report recent sampling or changeout in response to township ordinances. This is discussed further in the ICs section of this FYR and is included as a recommendation in the Recommendations section of this FYR.

Plume Boundaries

For this FYR, EPA and MPCA evaluated overall plume stability and trends in TCE concentration in all affected aquifers. Site-related groundwater contamination affects the shallow unconsolidated aquifer (Drift) and three deeper aquifers used for drinking water at the Site (Prairie du Chien, Jordan and Tunnel City aquifers). Groundwater contamination in the Drift aquifer is primarily present near the source area and is discussed under OU3 below. Through most of the rest of Site, groundwater contamination is present mainly in the Prairie du Chien and Jordan aquifers. The Prairie du Chien and Jordan aquifers are sources of drinking water for many private residences at the Site. There is little confining material between the two formations and, for the purpose of the FYR, they are analyzed together. Near the St. Croix River, where the Prairie du Chien and Jordan formations have largely been eroded away, the plume is present in the Tunnel City aquifer. The Tunnel City aquifer is the source of drinking water for the City of Bayport. Figure 3 shows a general cross-section of aquifers at the Site.

A map showing the location of the boundary of the TCE plume that exceeds a concentration of 0.4 µg/L TCE in the Prairie du Chien and Jordan aquifers from the most recent data (2014 to 2016) is shown in Figure 4. For this FYR, plume boundaries in these aquifers were compared to 2011 data and found to be predominantly stable. (The definition of the plume changed, due to the change in HRL for TCE in 2015, but the plume itself did not change significantly.) An example of how the plume boundary is delineated in shown in Figure 5, a detailed map of sampling locations in the Jordan aquifer showing 2015 to 2016 data.

A map showing the location of the contaminated groundwater plume in the Tunnel City aquifer in 2015 (most recent mapped data) is shown in Figure 6. Through most of the period of this FYR, the area of the plume near the City of Bayport that exceeds the MCL continued to expand eastward, leading to the need to treat an additional municipal well. This is discussed further under OU2 below.

At its eastern boundary, groundwater from the Tunnel City aquifer discharges to the St. Croix River. Pre-treatment monitoring data from the wells closest to the river, City Wells #3 and #4, show that TCE concentrations in this part of the aquifer range from 2 to 4 µg/L (see Table 4 below). The State of Minnesota designates the St. Croix River as an Outstanding Resource Value Water – restricted use, with a surface water quality chronic standard for TCE of 5 µg/L. Based on the data from City Wells #3 and #4, the current discharge of the plume to the river appears to be below the current chronic surface water quality standard for TCE. However, pre-treatment monitoring data from Well #2, only slightly further from the river, show TCE concentrations up to approximately 9 µg/L. Therefore, the possibility of an exceedance in the future has been added to the Issues and Recommendations section of this FYR.

Groundwater Trends

For this FYR, EPA and MPCA compared TCE concentrations in wells monitored at the Site that had consistent detections of TCE in the Prairie du Chien, Jordan, and Tunnel City aquifers during approximately the last five years. A comparison of changes in TCE concentrations for the 24 Prairie du Chien wells with consistent TCE detections shows a mean decrease in TCE concentration of 4.4 µg/L. For the 22 Jordan aquifer wells with consistent detections, there was overall no significant change in TCE concentration. Prairie du Chien wells are in general more highly contaminated than Jordan wells. Twenty-one of 24 Prairie du Chien wells had TCE concentrations greater than ten times the HRL (i.e., more than 4 µg/L TCE, a level approaching the MCL of 5 µg/L). Only five of 30 Jordan wells had TCE concentrations greater than 10 times the HRL.

Four Tunnel City wells showed increased concentrations during the period of the FYR, including several City of Bayport municipal wells, discussed further under OU2 below. However, three Tunnel City wells with decreases in TCE concentration are located up-gradient of the municipal wells, which suggests that concentrations may be expected to stabilize or decrease in the Tunnel City aquifer in the coming years.

Overall at the Site, TCE concentrations in the Prairie du Chien aquifer are generally decreasing, and concentrations in the Jordan and Tunnel City aquifers are generally stable. This is consistent with a conceptual site model of slow aquifer recovery.

OU2

The City of Bayport reports the results of pre- and post-treatment groundwater sampling for its municipal wells to MPCA and MDH. The enforceable standard, and the ARAR documented in the ROD, for the municipal drinking water wells is the MCL; however, MPCA and MDH recommend that municipal drinking water also meet the HRL for TCE. The MCL for TCE is 5 µg/L and the HRL is 0.4 µg/L.

Sampling results for the City of Bayport wells show that untreated groundwater pumped from Well #2 continues to be contaminated with TCE at concentrations above both the MCL and the HRL. Before treatment, groundwater pumped from Well #3 also exceeds the HRL but remains slightly below the MCL, although concentrations are increasing. These two wells are treated with air stripping, in addition to standard treatment. After treatment, TCE is not detected in drinking water from either well. The air stripper treatment system is performing as required. Well #4 is not connected to the air stripper. TCE is present in samples from this well at concentrations below the MCL but above the HRL. As explained in the Status of Implementation section of this FYR, the City uses Well #4 for emergency backup use only.

The table below provides a summary of the TCE concentrations in each of the Bayport municipal wells during the last five years, and the post-treatment results.

Table 1 – Bayport Municipal Well Sampling Results for TCE (µg/L)

Date Collected	Well #2 Before Treatment*	Well #3 Before Treatment*	Well #4 Before Treatment**	Post-Air Stripper (Wells #2 & #3)
1/19/2012	8.3	3.2	2.4	Non-detect
5/3/2012	9.0	3.1	2.5	Non-detect
7/24/2012	8.3	3.7	2.4	Non-detect
10/18/2012	8.1	3.1	2.1	Non-detect
1/29/2013	8.2	3.2	1.9	Non-detect
4/8/2013	7.7	2.8	2.3	Non-detect
7/11/2013	8.1		1.7	Non-detect
12/30/2013	7.1	3.3	1.4	Non-detect
2/11/2014	8.6	3.7	1.8	Non-detect
4/22/2014	6.5	2.3	1.2	Non-detect
7/23/2014	7.7	4.2	2.4	Non-detect
11/4/2014	7.4	3.8	2.2	Non-detect
1/12/2015	7.5	3.6	2.3	Non-detect
5/6/2015	6.8	3.4	2.2	Non-detect
7/21/2015	8.1	4.1	2.5	Non-detect
11/19/2015	8.3	3.8	2.2	Non-detect
2/18/2016	8.9	4.0	2.2	Non-detect
5/17/2016	--	3.8	2.9	Non-detect
7/12/2016	7.8	3.7	--	Non-detect
11/9/2016	7.6	3.8	--	Non-detect

*Wells #2 and #3 receive air stripper and conventional treatment.
** Well #4 receives conventional treatment only.

The data above suggest that TCE concentrations in Well #2 and Well #3 have likely stabilized, but this is less clear for Well #4. It is possible that portions of the plume are continuing to expand near Well #4 (see Figure 6 for well locations).

OU3

The extraction wells were shut down during in-situ treatment in order to improve treatment effectiveness and avoid fouling of the wells.

Two phases of full-scale in-situ treatment were performed at the source area during the period of this FYR. For Phase 1, MPCA used ISCO treatment for the main source area and ERD treatment for the southern source area. For ISCO in the main source area, MPCA's contractor injected sodium permanganate at 28 temporary injection points. Twenty-two of the injection points were located near and beneath the commercial building and were conducted at depths from 35 to 55 feet. The remaining six injection points were located just downgradient, at depths between 45 and 80 feet. MPCA's contractor conducted ERD treatment in the southern source area by injecting emulsified vegetable oil (EVO) at 17 points. The EVO injection points were located at depths between 46 and 70 feet, in an area south of the commercial building and separated from the ISCO treatment area by a buffer zone. The use of two different treatment methods allowed MPCA to evaluate the effectiveness of both, while avoiding potential vapor issues for the commercial building that might be caused by ERD.

Monitoring results following Phase 1 treatment indicated that TCE concentrations decreased as a result of both treatment methods; however, TCE concentrations in the ISCO area rebounded significantly, likely due to additional desorption of TCE from soil into groundwater. The hydraulic barrier was restarted in mid-February 2016 to control the rebound. The ERD treatment

resulted in sustained decreases in TCE concentration, and corresponding increases in cis-dichloroethene and vinyl chloride, suggesting biological degradation of TCE in the ERD treatment area. Following data review, MPCA determined that ERD treatment alone should be used for Phase 2.

MPCA's contractor conducted Phase 2 of source area treatment in May 2016 using injections of a lactate-EVO mixture for ERD treatment at 27 injection points. Treatment results to date varied across the source area, but were generally positive. As documented in the ESD, MPCA's interim goal for source area treatment is to reduce TCE concentrations at the eastern Hagberg property boundary to 25 µg/L or less. MPCA chose this interim goal as a concentration that may allow natural attenuation of the downgradient plume to concentrations below the MCL and HRL within a reasonable time period.

Recent sampling results for the source area are shown on Figure 7. Results to date indicate that the interim treatment objective for TCE (25 µg/L) has been achieved in more than half of the source area monitoring locations (13 of 21 locations.) In addition, the MCL (5 µg/L) has been achieved at about one quarter of the locations (approximately 6 of 21 locations) and the HRL (0.4 µg/L) has been achieved at two locations (RW-4 and MW-27.) In addition, two of three monitoring wells located approximately 800 feet downgradient have achieved the interim treatment goal (MW-39 and MW-40) and an additional monitoring well located further downgradient (MW-10B) is also beginning to show a decline in TCE, although results remain several orders of magnitude above the HRL.

As of January 2017, the hydraulic barrier system remains shut down because TCE concentrations continue to decrease as a result of the treatment. If the extraction wells were restarted, it would decrease the residence time of treatment residuals. MPCA continues to monitor treatment results and plans to keep the barrier system shut down as long as treatment continues to lower the TCE concentration; however, written re-start criteria should be developed. This has been added to the Recommendations section of this FYR.

Vapor Intrusion Summary

During the period of this FYR, periodic sub-slab and indoor air monitoring for the commercial building (Hagberg's Country Market) overlying the source area confirmed the lack of a complete vapor pathway. However, in 2015, MPCA installed a vapor mitigation system as a precaution against potential contaminant vapors being released during ERD treatment. The system is monitored regularly.

Also in 2015, MPCA investigated potential vapor intrusion risk in other areas of the Site with the most potential for vapor intrusion risk. Two soil gas surveys, one located in the City of Bayport and one area located near Lake Elmo Airport, found very low levels of several volatile contaminants, as is common in many developed areas. However, the sampling confirmed that none exceeded MPCA or EPA health-based screening levels for residential properties.

There may be a potential future vapor intrusion risk for an area down-gradient of the source area that is currently in agricultural use. This is discussed further in the IC Section of this FYR and is included in the Issues and Recommendations section.

Site Inspection

The inspection of the Site was conducted on January 4, 2017. Appendix C contains inspection photographs. Leah Evison, representing EPA, and Eric Pederson, Kurt Schroeder and Mark Elliott, representing MPCA, conducted the inspection. The purpose of the inspection was to assess the protectiveness of the remedy.

At the source area, the group inspected the vapor pressure manometers installed for the sub-slab vapor mitigation system at Hagberg's Country Market. At the time of the inspection, five of six suction ports showed a negative pressure differential as desired. MPCA discussed the one inactive suction port with its contractor, who explained that it is designed to draw air from a pit beneath the building and is to be turned on if methane is detected during periodic monitoring. The suction port was inactive due to the lack of methane.

The inspection team also observed select monitoring wells and well-heads for the extraction well system which were found to be in good condition. The exterior of the air stripper treatment plant in Bayport was also viewed and found to be in good condition. The treatment equipment is inspected regularly by the City and was not included in the FYR inspection because data have consistently shown good water treatment results, as discussed above. Likewise, individual GAC systems in homes were not inspected for this FYR because this is done regularly by MPCA and its contractor.

The Site inspection confirmed the protectiveness of the remedy and no issues impacting current and/or future protectiveness were observed during the inspection.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes.

Question A Summary:

The remedy is functioning as intended by the decision documents. Treatment remedies for private wells throughout the Site and for municipal wells in the City of Bayport are protecting residents from exposure to contaminated groundwater. Treatment of the source area is ongoing and appears to be working. The downgradient plume is generally stable and concentrations on the whole are slightly decreasing. ICs in the form of informational and governmental controls are in place for the Site. A recommendation to develop and implement LTS procedures has been added to this FYR to ensure ICs remain in place and are effective. MPCA and MDH are discussing whether the SWBCA should be expanded or other procedures should be put in place to address several small areas of the plume that extend beyond the SWBCA boundary. MPCA and MDH also plan to request meetings with the boards of affected townships to discuss means to improve compliance with township ordinances.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Yes.

Question B Summary:

The exposure assumptions and toxicity data used at the time of selection of the modified remedy are still valid. The ROD does not establish final cleanup levels for groundwater, but does include a site-wide RAO of achieving drinking water standards. MPCA uses current HRLs, which are lower than MCLs for the contaminants present at the Site, for action levels at the Site. RAOs

used at the time of remedy selection are still valid and no new exposure pathways have been identified. A vapor mitigation system has been installed for the building located at the source area, and soil gas surveys have confirmed the lack of vapor intrusion risk in other areas most likely to present unacceptable risk. One area of potential future vapor risk is addressed in the Issues and Recommendations section of this FYR.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No.

Question C Summary:

No other information has come to light that could call into question the current protectiveness of the remedy; however, the distal portion of the groundwater plume discharges to the St. Croix River and an annual comparison to chronic surface water quality criteria is needed to document future protectiveness. This has been added as a recommendation below.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU2

OU1	**Issue Category: Institutional Controls**			
	Issue: The current plume boundary extends outside of the SWBCA in several locations.			
	Recommendation: Expand the SWBCA or establish written procedures to provide equivalent safeguards for an interim period while the plume boundary is further monitored.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	September 29, 2017

OU1	Issue Category: Institutional Controls			
	Issue: Compliance issues with Township ordinances and State seller notification requirements have been noted.			
	Recommendation: Encourage townships to institute actions to improve compliance with ordinances and notification requirements.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	September 29, 2017

OU1	Issue Category: Institutional Controls			
	Issue: LTS procedures are needed to ensure that effective ICs are monitored, maintained and enforced.			
	Recommendation: Develop and implement a LTS plan which includes procedures for monitoring and tracking compliance with existing ICs, communicating with EPA, and providing an annual certification to EPA that the ICs remain in place and are effective.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	September 29, 2017

OU1	Issue Category: Remedy Performance			
	Issue: A comparison of distal plume groundwater data to surface water quality criteria is not routinely performed.			
	Recommendation: Compare distal plume groundwater data to surface water quality criteria annually.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	March 29, 2018

OU3	Issue Category: Institutional Controls			
	Issue: Undeveloped area immediately downgradient of source area is included in a long-range plan for potential residential development and may present a future vapor intrusion risk.			
	Recommendation: Evaluate potential for vapor intrusion risk and assess need for City of Lake Elmo IC to require vapor mitigation if area immediately downgradient of source area is developed, and implement IC if needed.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	March 29, 2018

OU3	Issue Category: Remedy Performance			
	Issue: ROD does not include a final cleanup goal for source-area groundwater.			
	Recommendation: Following additional monitoring, and additional treatment if needed, select a final cleanup goal for source area groundwater.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	March 29, 2019

OU3	Issue Category: Remedy Performance			
	Issue: Re-start criteria for the hydraulic barrier system following treatment are unclear.			
	Recommendation: Clarify re-start criteria for the hydraulic barrier system.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	September 29, 2017

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: OU1	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The remedy at OU1 currently protects human health and the environment because affected residential wells are receiving GAC treatment and ICs are in place and generally effective. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: expand the SWBCA or establish written procedures to provide equivalent safeguards for an interim period while the plume boundary is further monitored, encourage townships to institute actions to improve compliance with ordinances and notification requirements, develop and implement a LTS Plan, and compare distal plume groundwater data to surface water quality criteria annually.	

Protectiveness Statement(s)	
Operable Unit: OU2	*Protectiveness Determination:* Protective
Protectiveness Statement. The OU2 remedy at OU2 is protective of human health and the environment. Municipal drinking water is being effectively treated and RAOs continue to be met.	

Protectiveness Statement(s)	
Operable Unit:	*Protectiveness Determination:*
OU3	Short-term Protective

Protectiveness Statement:
The remedy at OU3 currently protects human health and the environment because source area groundwater is receiving in-situ treatment, a hydraulic barrier system is in place and available if needed, and a vapor intrusion mitigation system is operating in the on-Site building. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: evaluate potential for vapor intrusion risk and assess need for City of Lake Elmo IC to require vapor mitigation if area immediately downgradient of source area is developed, and implement IC if needed; following additional monitoring, and additional treatment if needed, select a final cleanup goal for source area groundwater; and clarify re-start criteria for the hydraulic barrier system.

Sitewide Protectiveness Statement
Protectiveness Determination:
Short-term Protective

Protectiveness Statement:
The remedy at the Site currently protects human health and the environment because affected residential and municipal drinking water wells are being treated, source-area groundwater is being treated, a vapor intrusion mitigation system is operating in a source-area building, and ICs for groundwater are in place and generally effective. However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure protectiveness: expand the SWBCA or establish written procedures to provide equivalent safeguards for an interim period while the plume boundary is further monitored; encourage townships to institute actions to improve compliance with ordinances and notification requirements; evaluate potential for vapor intrusion risk and assess need for City of Lake Elmo IC to require vapor mitigation if area immediately downgradient of source area is developed, and implement IC if needed; develop and implement a LTS Plan; compare distal plume groundwater data to surface water quality criteria annually; select a final cleanup goal for source area groundwater; and clarify re-start criteria for the hydraulic barrier system.

VIII. NEXT REVIEW

The next FYR report for the Baytown Township Groundwater Plume Superfund Site is required no less than five years from EPA's signature date of this review.

APPENDIX A – REFERENCE LIST

Record of Decision for Baytown Township Groundwater Contamination Site, MPCA, May 25, 2000

Record of Decision Amendment for Baytown Township Groundwater Contamination Site, MPCA, July 13, 2007

Explanation of Significant Differences for Baytown Township Groundwater Contamination Site, MPCA and EPA, July 21, 2015

Final Annual Reports 2012 through 2015, Terracon Consultants, Inc.

Design Report, Bayport - Well No. 3 Conveyance and TCE Treatment, AECOM, June 30, 2015

Second Five Year Review, Baytown Township Groundwater Contamination Site, MPCA and EPA, March 29, 2012

Soil Gas Assessment Report, Baytown Township Groundwater Contamination Site, Terracon Consultants, Inc., February 10, 2016

APPENDIX B – FIGURES

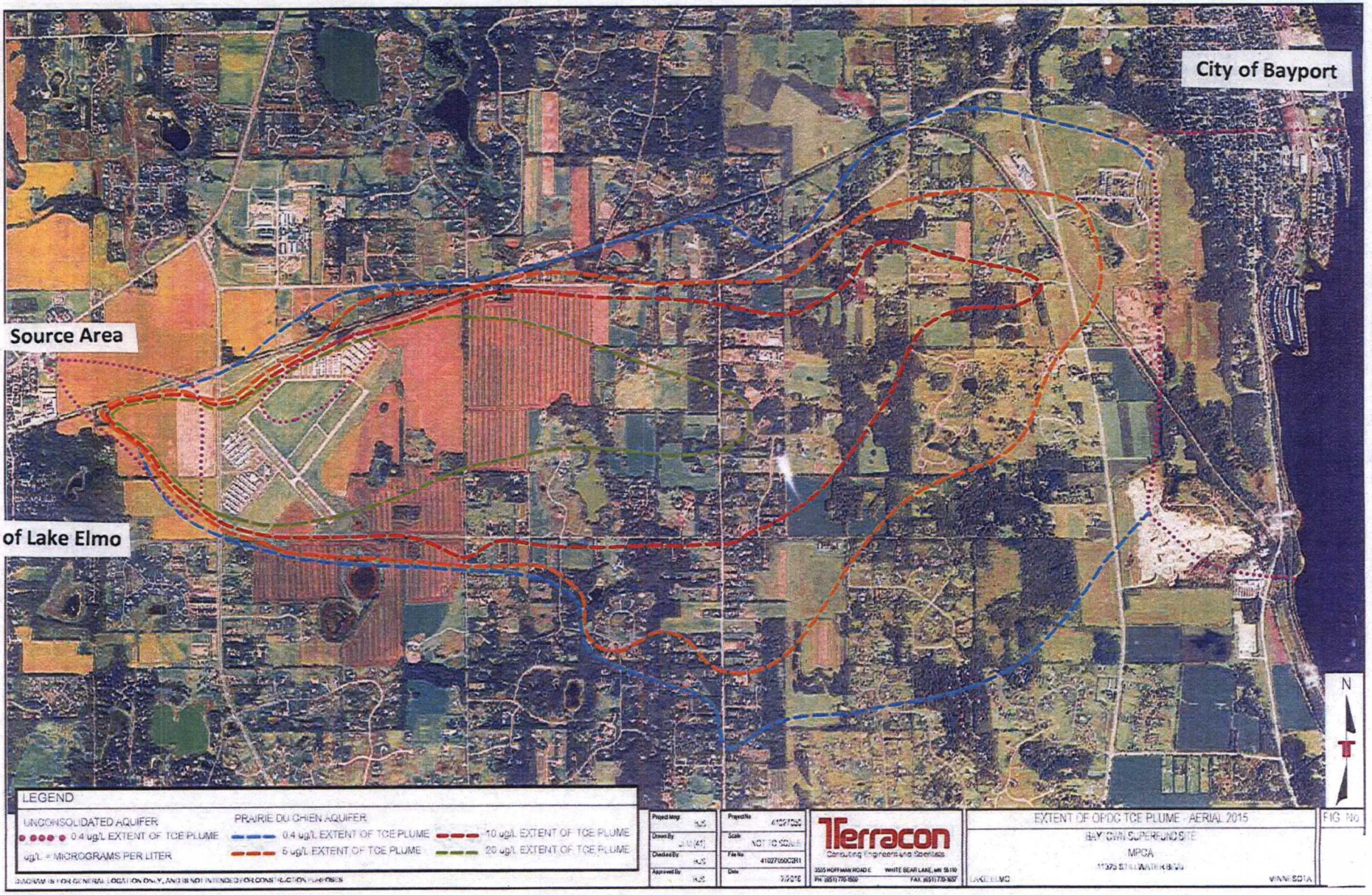


Figure 1. Site Location

(Dotted line shows location of >0.4 µg/L TCE plume in unconsolidated aquifer; blue dashed line shows location of same boundary in Prairie du Chien aquifer.)

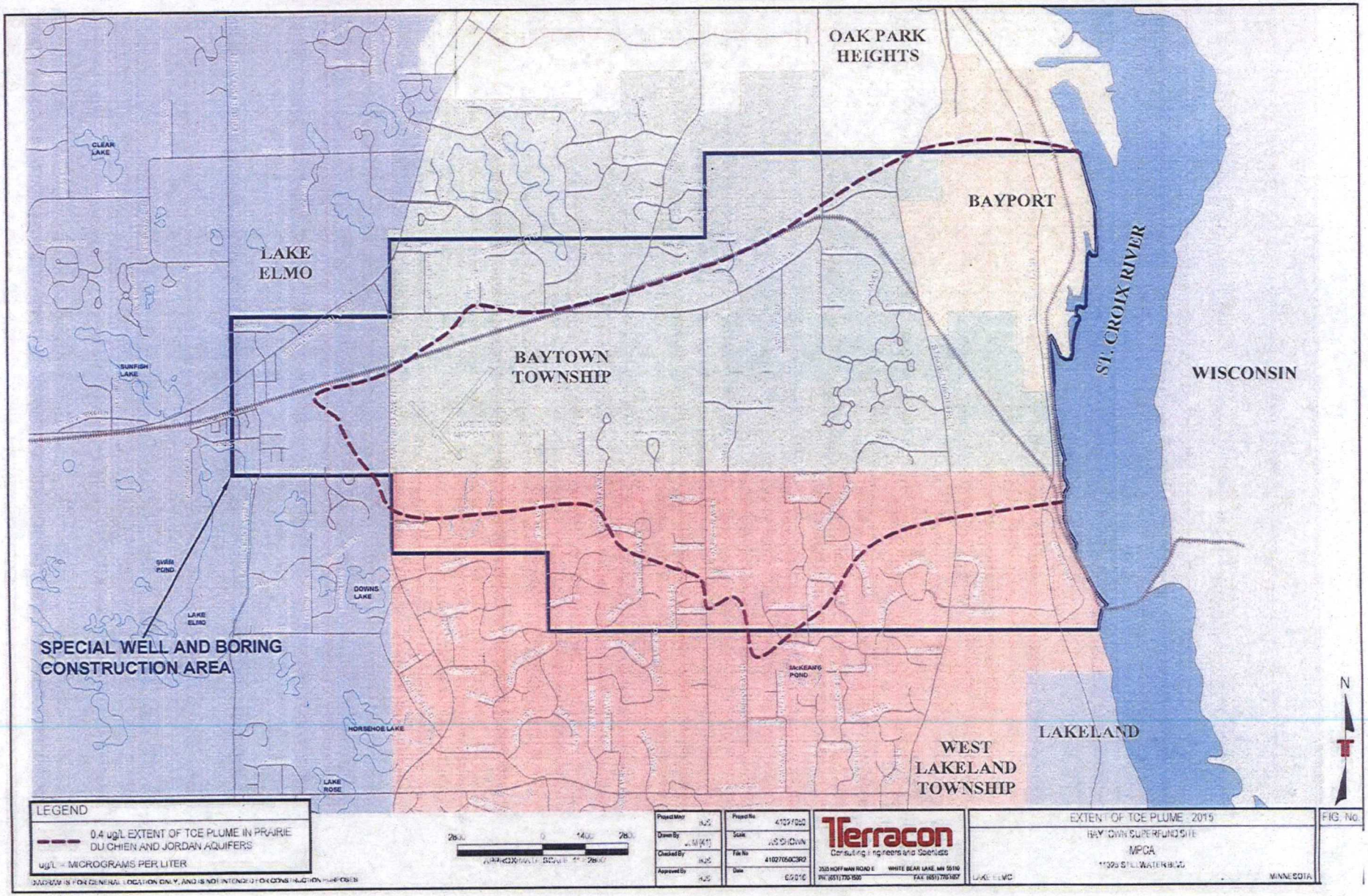


Figure 2. Institutional Controls Map

(Dashed line shows location of >0.4 µg/L TCE plume in bedrock aquifers.)

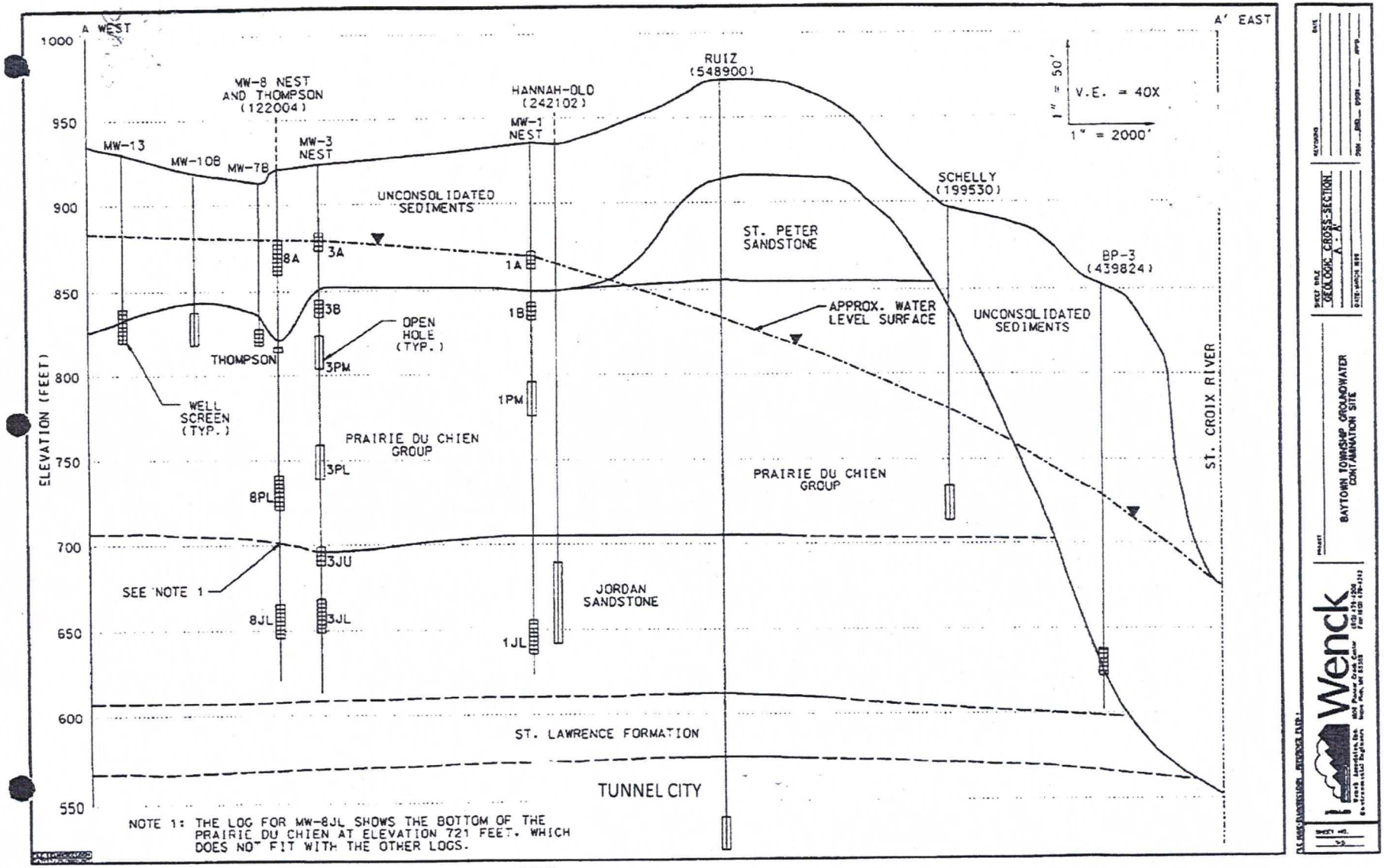


Figure 3. Geologic Cross-section
(Source area to left, City of Bayport and St. Croix River to right)

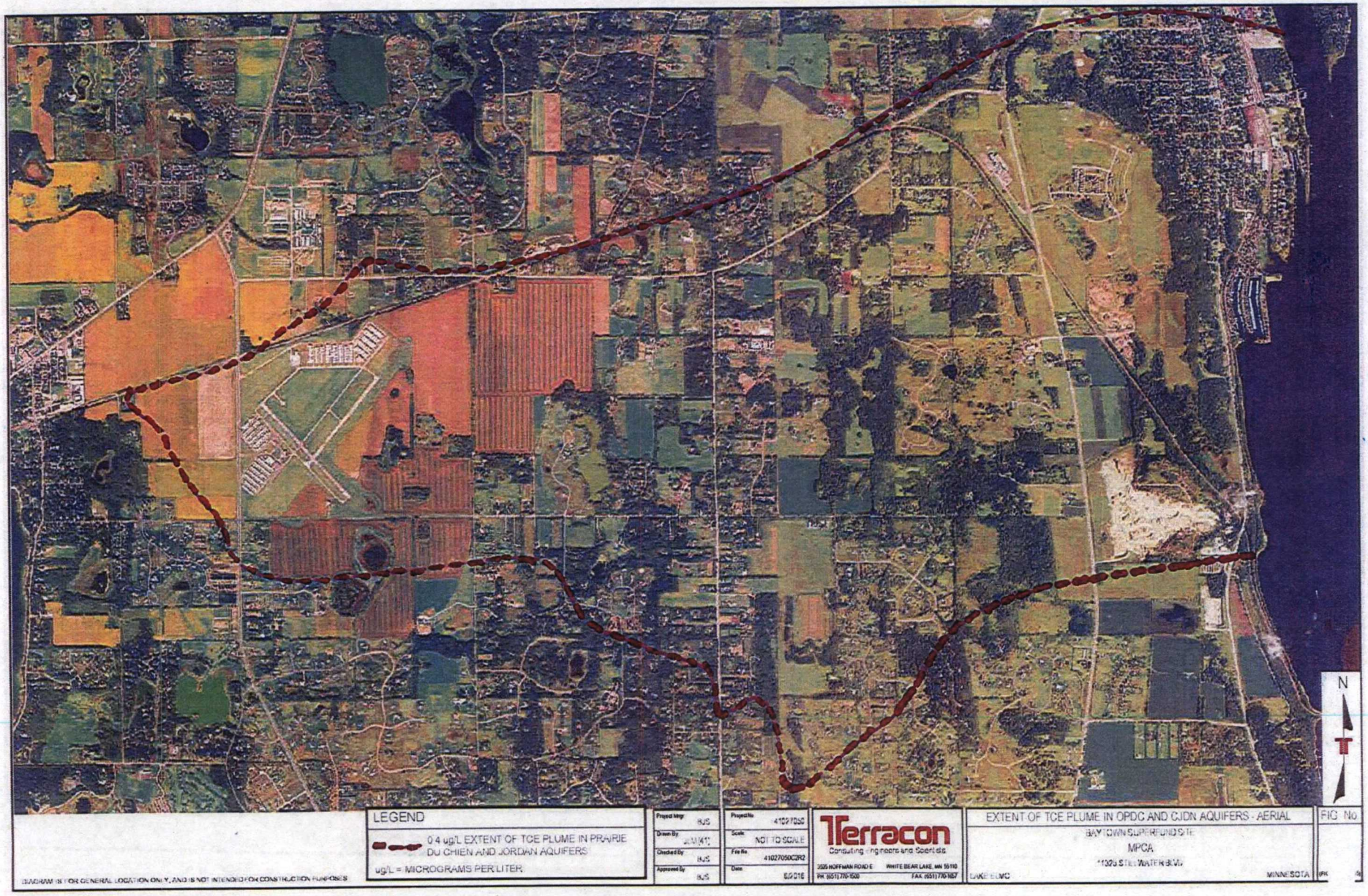


Figure 4. Plume Boundary in Prairie du Chien and Jordan Aquifers
(Based on exceedances of 0.4 µg/L TCE in 2016)

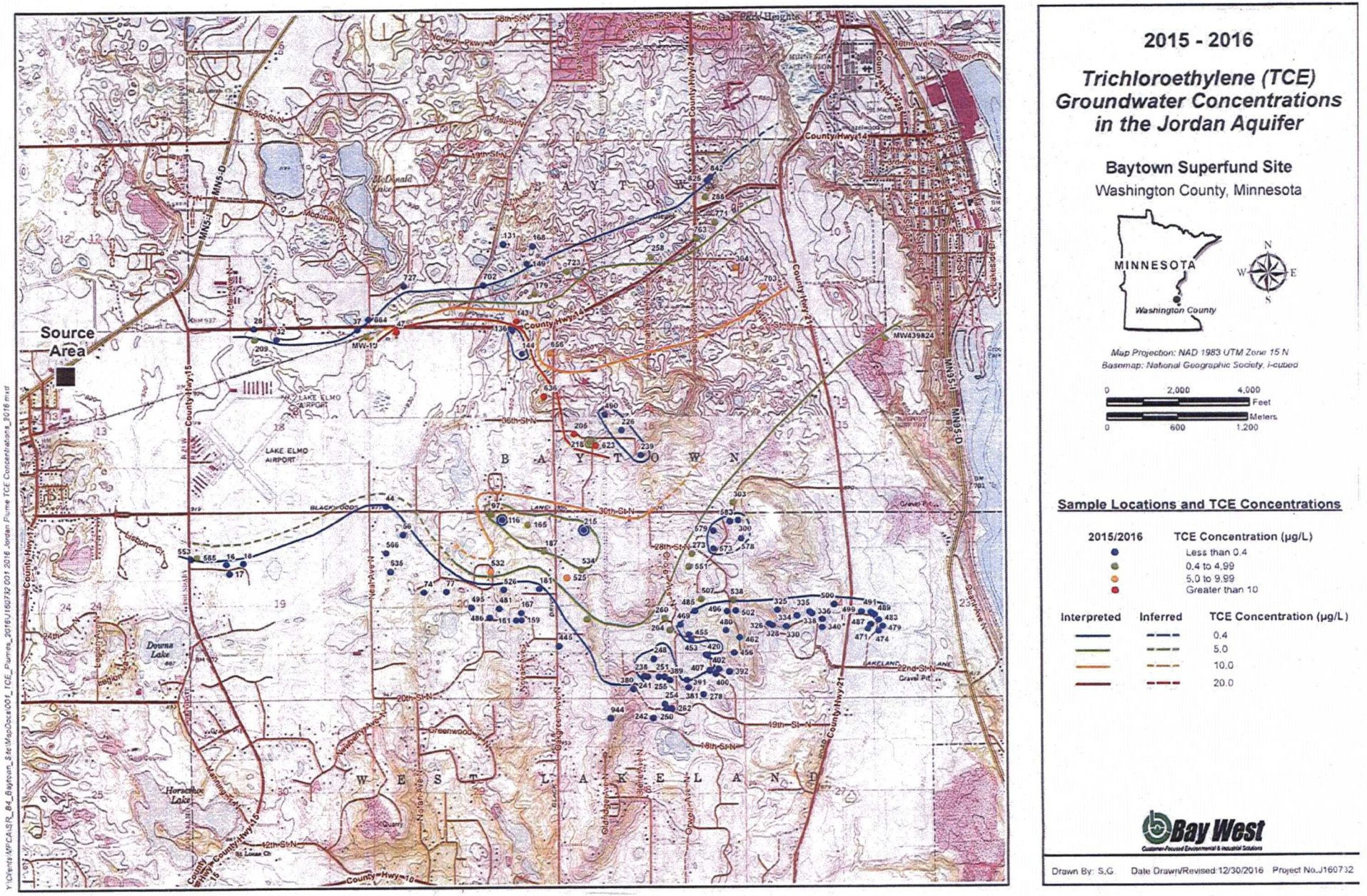


Figure 5. Boundary Delineation Detail

(Showing sampling locations from 2015 to 2016 in the Jordan aquifer. Red, yellow and green locations exceed HRL of 0.4 ug/L TCE; blue locations do not)

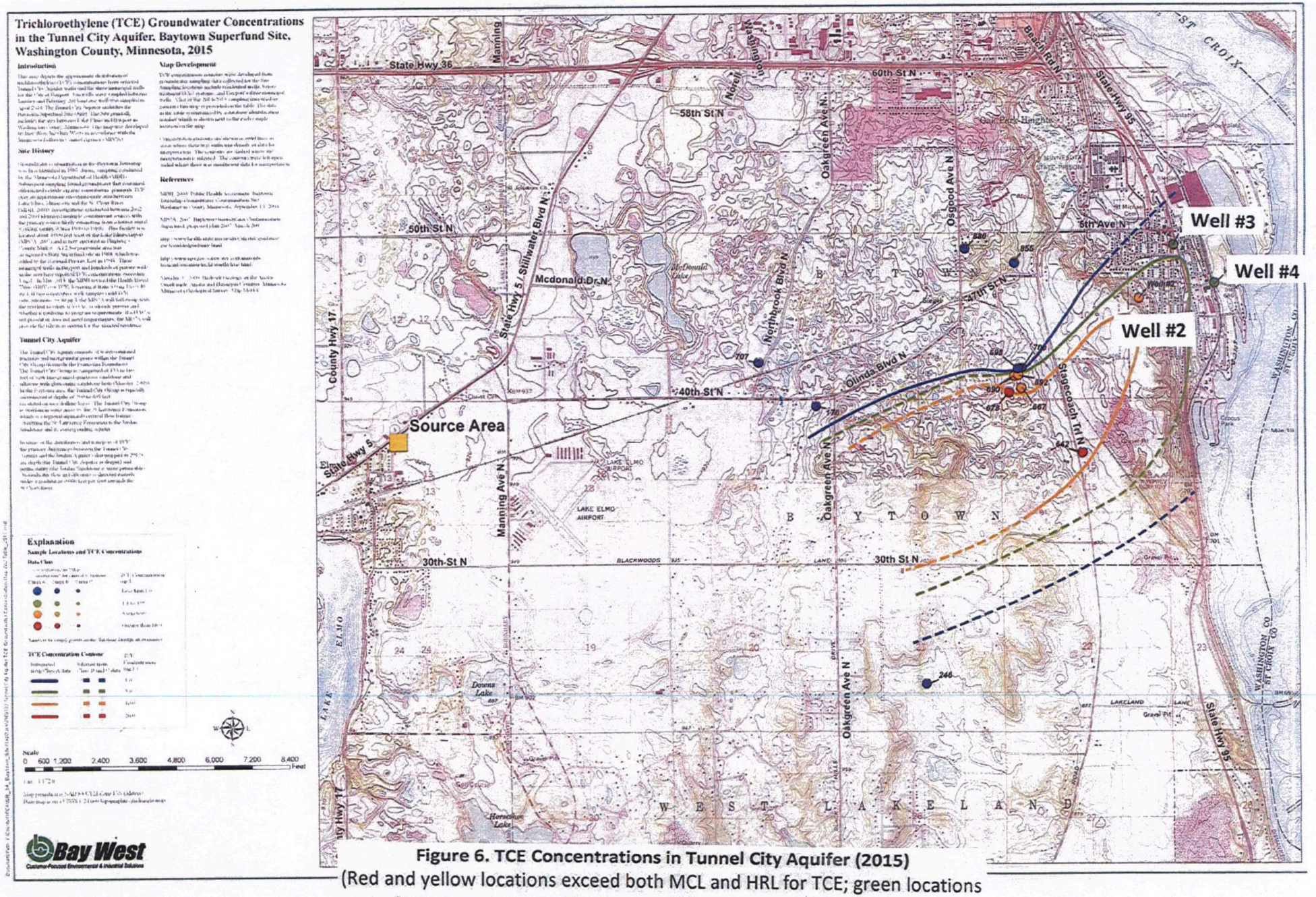


Figure 6. TCE Concentrations in Tunnel City Aquifer (2015)
(Red and yellow locations exceed both MCL and HRL for TCE; green locations exceed HRL but not MCL; blue locations do not exceed HRL or MCL)

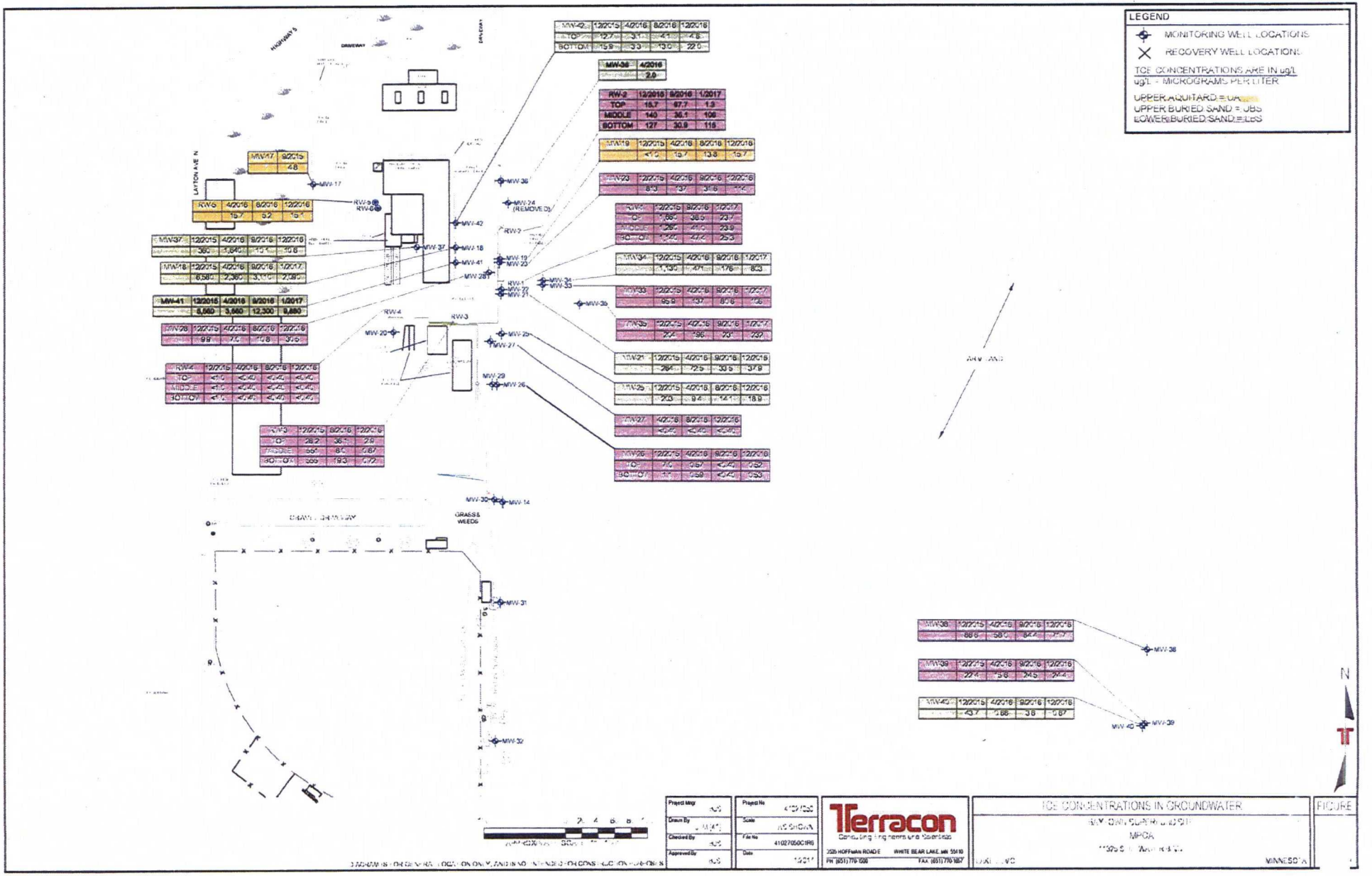
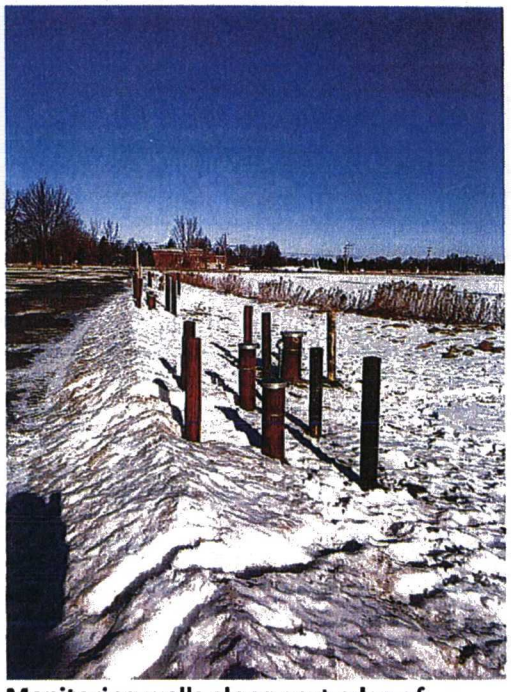
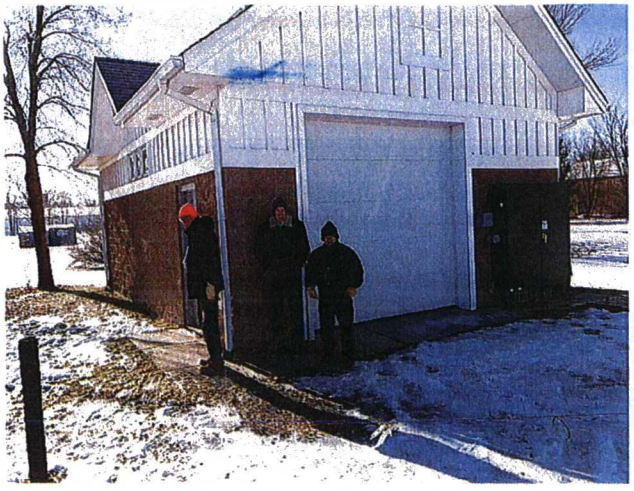


Figure 7. TCE Concentrations in Source Area Groundwater (2017)
(see Annual Report for additional information)

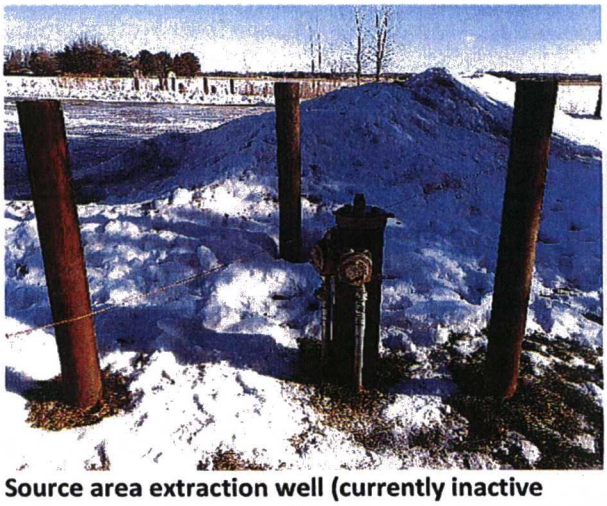
APPENDIX C – SITE INSPECTION PHOTOS



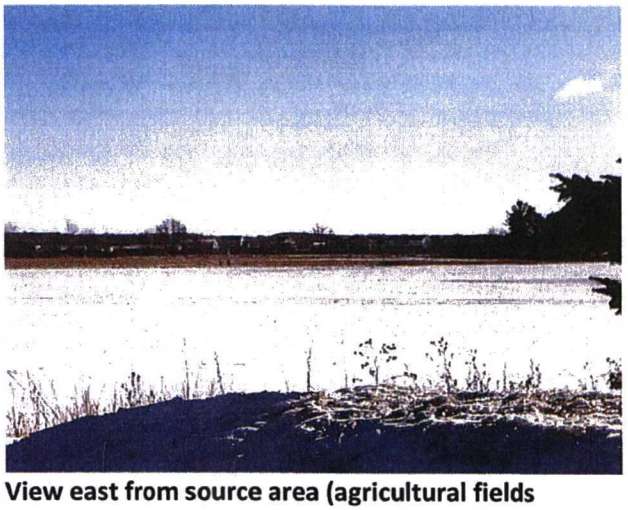
Monitoring wells along east edge of source area; view north



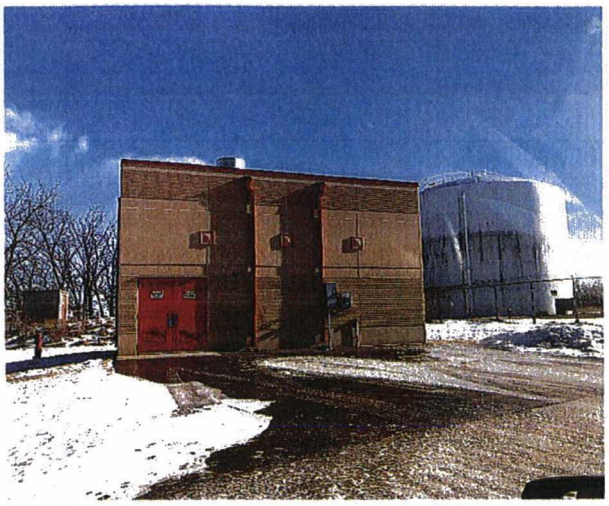
Building housing the source area air stripper (used to treat extracted source area groundwater; currently inactive to improve in-situ treatment effectiveness)



Source area extraction well (currently inactive to improve treatment effectiveness)

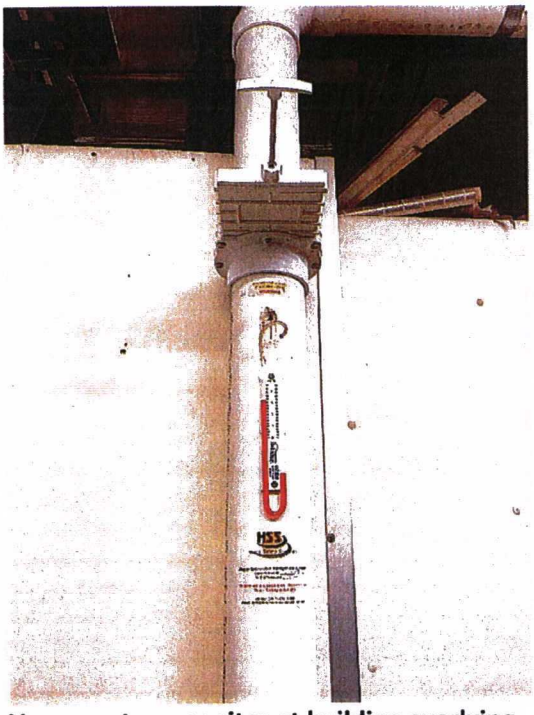


View east from source area (agricultural fields and homes along Manning Avenue)



City of Bayport treatment system building near Well #2

Vapor system monitor at building overlying source area, showing inactive pressure differential (currently unused port)



Vapor system monitor at building overlying source area, showing active pressure differential

Related Topics: Envirofacts

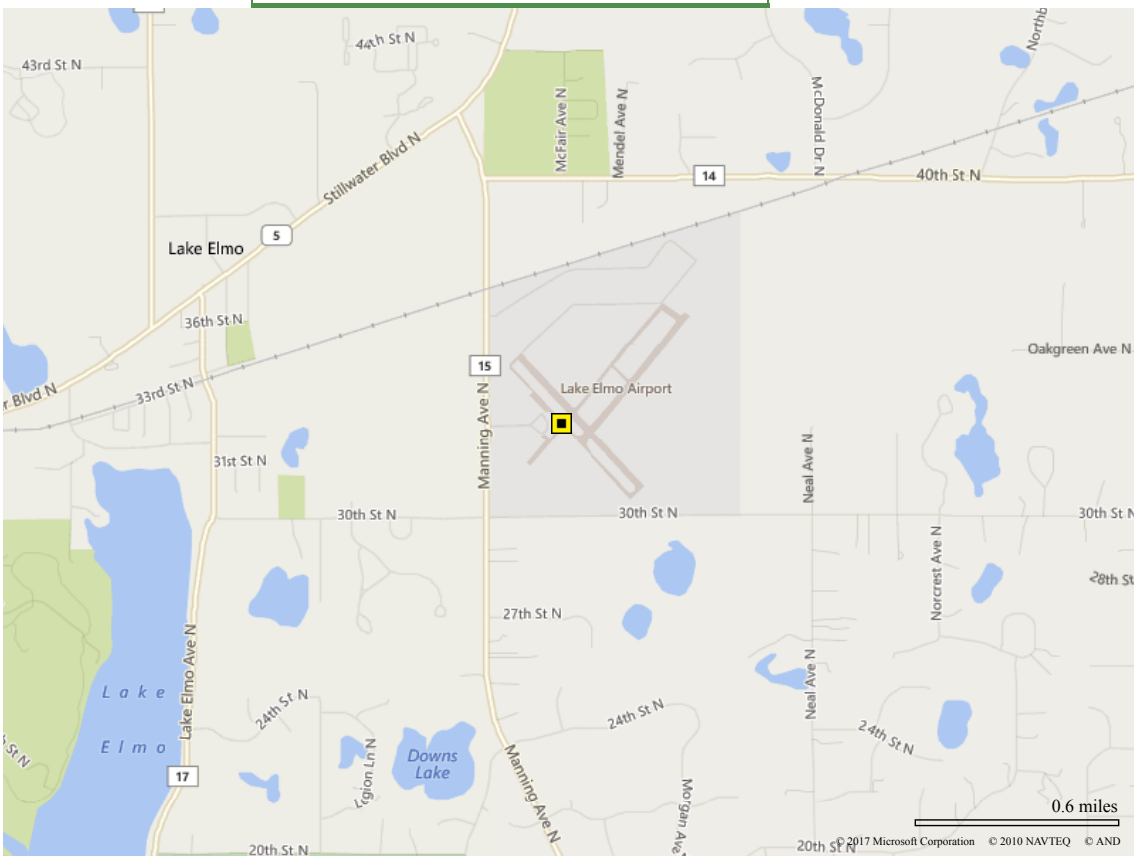
FRS

FRS Facility Coordinates

BAYTOWN TOWNSHIP GW CONTAMINATION SITE
SEE LOCATION DESCRIPTION
LAKE ELMO, MN 55042 UNITED STATES
FRS Registry ID:
110020699975

Facilty Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model



List of Facility Coordinates

Zoom to Coordinate	ObjectId	Conveyor	Geo Source Acronym	Geo Source Id	Program SubId	Latitude	Longitude	Horiz Datum	Best Pick	Distance to Best Pick (Meters)	Collectio Method
🔎	16443941	RCRAINFO	RCRAINFO	MNS000105718		44.996163	-92.857842	NAD83	Y	0	

Last updated on September 24, 2015

Appendix K. Interview Memorandums

Mead & Hunt, Inc.

Telephone memo

To: file

Company: Brad L., Lake Elmo Maintenance Manager

Recorded by: M. Sauer

Time: 2:30 pm

Date: 9/21/17

Telephone No.: 612-919-3508

Project: Lake Elmo Airport

Project No.: 2838700-161542.02

Subject: Hazardous Materials Investigation

Brad and I had a discussion had about the airport history and any previously known potentially hazardous materials that may impact or be impacted by proposed project activities. Specific questions discussed were as follows:

- Groundwater contamination – do they truck in water? Anything known about the site at all? Monitoring wells on site? Don't expect to encounter, but vapor intrusion?

Brad indicated his knowledge of the groundwater contamination is that it's not from the airport but from a metal working business and/or drycleaner located off-site nearby (This is consistent with research). Brad indicated there are groundwater monitoring wells on the airport and once a year, samples are taken from these (by a third party) and the airport is provided a copy of the reports.

- Valters Aviation Building – confirm location of tank on site.

As far as he knows, their only tank is an in-ground storage tank that's visible on the terminal ramp and it's not diesel since they don't carry that. Not sure what's inside, but believes it to be general airport maintenance and cleaning supplies and chemicals.

- Valters original location to east? Did they ever put a tank in the ground there?

Valters never did any other building. They used to own another hanger which was storage but it's been sold.

- Former maintenance building (1970's) in southwest corner accessed from 30th Street. - any tank there, previously?

This area was referred to as the Holiday Hangar as it's a hangar building currently used by Mark Holiday. There was another FBO at this location previously and it is unknown if there was ever underground fuel at this facility. Previously, this hanger building was owned by Mark Holiday's father and he did some maintenance out of it. Mark would be the best contact to determine the history of the site.

- Other

There used to be another maintenance building to the north-northwest of the current maintenance building. A 1980's tornado pretty much wiped that out. Brad did not know if there was fuel storage of any kind there. Mayer Aviation was previous FBO on site. The building is gone but the pad is visible to the northwest of the current maintenance on site. The space is currently used as storage for snow plows and commodities like salt, gravel, etc.

Telephone memo

Mead & Hunt, Inc.

To: file

Company:

Recorded by: M. Sauer

Time: 1:15 pm

Date: 8/23/17

Telephone No.: 651-426-6624 x55405

Project: Lake Elmo Airport

Project No.: 2838700-161542.02

Subject: Hangar 27E Site

I spoke with Nick Krueger regarding the Hangar 27E site. Nick indicated at the time of purchase of the hangar, he was required to register with the EPA and Minnesota Pollution Control Agency as a one-time generator of hazardous waste in order to have two 90 gallon containers of phosphoric acid (aluminum aircraft part surfacing materials) removed and disposed of by Safety Clean, a hazardous waste disposal company.

Nick was unaware of any additional potentially hazardous materials sites but did indicate Valter's Aviation previously attempted to build a well on site at a former location east of their current building but were unsuccessful because of groundwater contamination. In addition, Nick indicated the current Valter's building contains signs that the water on site is not potable and that the fire department did or does truck in water for an onsite storage tank to be used on site. The groundwater contamination is consistent with other database search results reviewed for the Airport.

cc:

Appendix I – Wildlife Hazard Site Visit Documentation & USDA-APHIS Correspondence

Content	Page
USDA-APHIS Wildlife Services Letter January 3, 2018	I-1
Wildlife Field Survey Letter Report November 6, 2017	I-2 thru I-7

USDA

United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services

St. Paul Downtown Airport
644 Bayfield Street, Suite 215
Saint Paul, MN 55107
Ph: 651-224-6027
Fax: 651-224-4271

January 3, 2018

Mr. R. Evan Barrett, AICP
Mead & Hunt, Inc.
257900 West 78th Street, STE 370
Minneapolis, MN 55439

Dear Mr. Barrett,

This letter is in response to your request to examine the potential wildlife hazards related to the proposed runway realignment and lengthening at Lake Elmo Airport (21D), Lake Elmo, Minnesota.

After reviewing the provided documents (USDA APHIS Letter 11.06.2017, Figure 3-10.PDF) and discussion, the proposed changes to the existing airport layout are unlikely to increase the wildlife hazards present at 21D. The changes proposed would have little effect on current hazardous wildlife use of the airport and surrounding area.

Feel free to contact the USDA Wildlife Services office at 651-224-6027 if you have any questions concerning these recommendations.

Sincerely,

Alan K. Schumacher
Wildlife Biologist

cc:
G. Nohrenberg, USDA-WS, St. Paul, MN
L. Bridges, Mead & Hunt, Minneapolis, MN

Mead & Hunt, Inc.
M & H Architecture, Inc.
7900 West 78th Street, Suite 370
Minneapolis, Minnesota 55439
952-941-5619
meadhunt.com

November 6, 2017

Mr. Alan K. Schumacher, Wildlife Biologist
USDA- Wildlife Services
644 Bayfield Street, STE. 215
Saint Paul, MN 55107

RE: Lake Elmo Airport (21D) Wildlife Attractants

Dear Mr. Schumacher,
Mead & Hunt is conducting an Environmental Assessment (EA) for airfield improvements at Lake Elmo Airport in Lake Elmo, Minnesota, on behalf of the Metropolitan Airports Commission (MAC). The proposed project would relocate the primary runway (Runway 14/32) to the northeast and increase the runway length from 2,849 feet to 3,500 feet, as shown in the attached Figure 1. It would also extend the crosswind runway (Runway 04/22) from 2,496 to 2,750 feet.

We would like to request your concurrence with our opinion of potential impacts related to hazardous wildlife associated with this project, which is detailed in this letter. Please review the following and provide your opinion regarding the validity of these findings, for inclusion as an appendix to the EA document.

Introduction
Two multiple day field surveys were completed related to wildlife habitat at Lake Elmo Airport. The first occurred in June 2017 to identify and delineate wetlands, and the second occurred in October 2017 to observe and characterize wildlife attractants. A variety of plant and animal species were identified within the proposed action area (see Figure 1) including insects, arachnids, birds, mammals, amphibians, and wetland and upland vegetation.

Birds identified in June 2017 included but were not limited to: American crow, red-winged blackbirds, blue jay, chickadee, vireo, swifts/swallows, and multiple sparrow species. One female white-tailed deer was observed and photographed. Frogs were observed in wetland areas. The wetland vegetation is well documented in wetland data sheets and a related wetland delineation and functional assessment report. The location of wetlands delineated during this visit are shown in Figure 2. Upland herbaceous vegetation was dominated by Kentucky bluegrass, alfalfa, red clover, dandelion, oxeye daisy, yarrow, thistle and plantains. Areas with these dominant plants are frequently mowed and maintained.

Wildlife attractants and birds observed in October 2017 included the American crow (4), eastern wood-pewee (12), Canada goose (400+) continuous morning flights traveling south to north, blue jay (5) and

approximately 300 red-winged blackbirds. Survey points (see Figure 3) were selected based on the ability to observe 90 percent or more of the airfield .

Wildlife Attractants

Attractants on the airport include agricultural land and wetlands. Approximately 300 acres on the airport are leased for farming with soybean and/or corn on a rotating basis. Grass/Alfalfa hay is also harvested onsite in areas not planted with corn or soybeans. During wet periods of the year the wetlands located onsite support ducks, shorebirds, passerines and wildlife that are dependent on wetland habitats.

The area to be impacted by the runway extension includes approximately 40 acres of land currently in agricultural production. Thus from a wildlife attractant perspective there would be approximately 40 fewer acres of wildlife habitat at the airport following implementation of the project.

Wildlife currently observed at the airport as reported by Airport staff include deer, birds, and other wildlife. Conversation with Airport maintenance staff (Mr. Brad Lavala) in September 2017 indicated that deer have been observed on the airport, and that Canada geese are increasing in numbers due to suburban development near the airport, which includes a new stormwater detention pond and open space. Mr. Lavala also indicated that most wildlife strikes during his tenure at the airport have been sparrows (seed eaters) and barn swallows (insect eaters) that nest in or near the hangars. Strike data recorded by Mr. Lavala indicated that, over a seven year period, two or three strike events included multiple birds per strike. Other strikes recorded indicate that single birds were struck. No more than six strikes have occurred during Mr. Lavala's tenure.

Additional wildlife observed at the airport include fox, coyote, deer, 13-lined ground squirrel (numerous), gopher, red-tailed hawk, crow, killdeer, rock pigeon, and starlings.

Other attractants near the airport include the fairgrounds approximately one mile north, which attracts Canada geese. Most deer are observed during the daylight hours and tend to congregate north and northeast of the AOA near trees. No golf courses, wastewater treatment facilities, landfills or waste transfer station are within one mile of the airport.

Fencing at the airport consists of a partial 8-foot fence that includes non-security Gate A and B. Gate A is utilized for the operations and Gate B is utilized by the FBO. There is no fence along the railroad which extends along the north side of the airport for a length of three quarters (3/4) of a mile. The east fence is overgrown and no maintenance occurs there on a regular basis. In summary approximately 50% of the AOA is fenced and 50% is unfenced. The fence that is in place in not continuous and has access opening for agricultural operations.

Mowing of the airfield turf areas and hangar lands occurs approximately three days a week and encompasses 180 acres. Some mowing is outsourced to a local entity. All mowed areas are cut to within 2 inches in height.

Project Impacts

The expansion of the airfield and associated hardscapes and safety areas will reduce habitat for birds and wildlife at the airport. However, the dislocated deer will continue to congregate near the remaining treed areas to the N-NE. Most deer adjust to manmade activity and will relocate to nearby habitat. Should the airport construct a regulation fence with barbed wire outriggers the deer would be removed from the AOA. Agricultural crops will be reduced by approximately 40 acres which will reduce potential bird strikes (sparrows and swallows) near hardscapes and associated safety areas.

The project would not reduce Canada goose strike potential other than reducing risk by eliminating approximately 40 acres of agricultural crops.

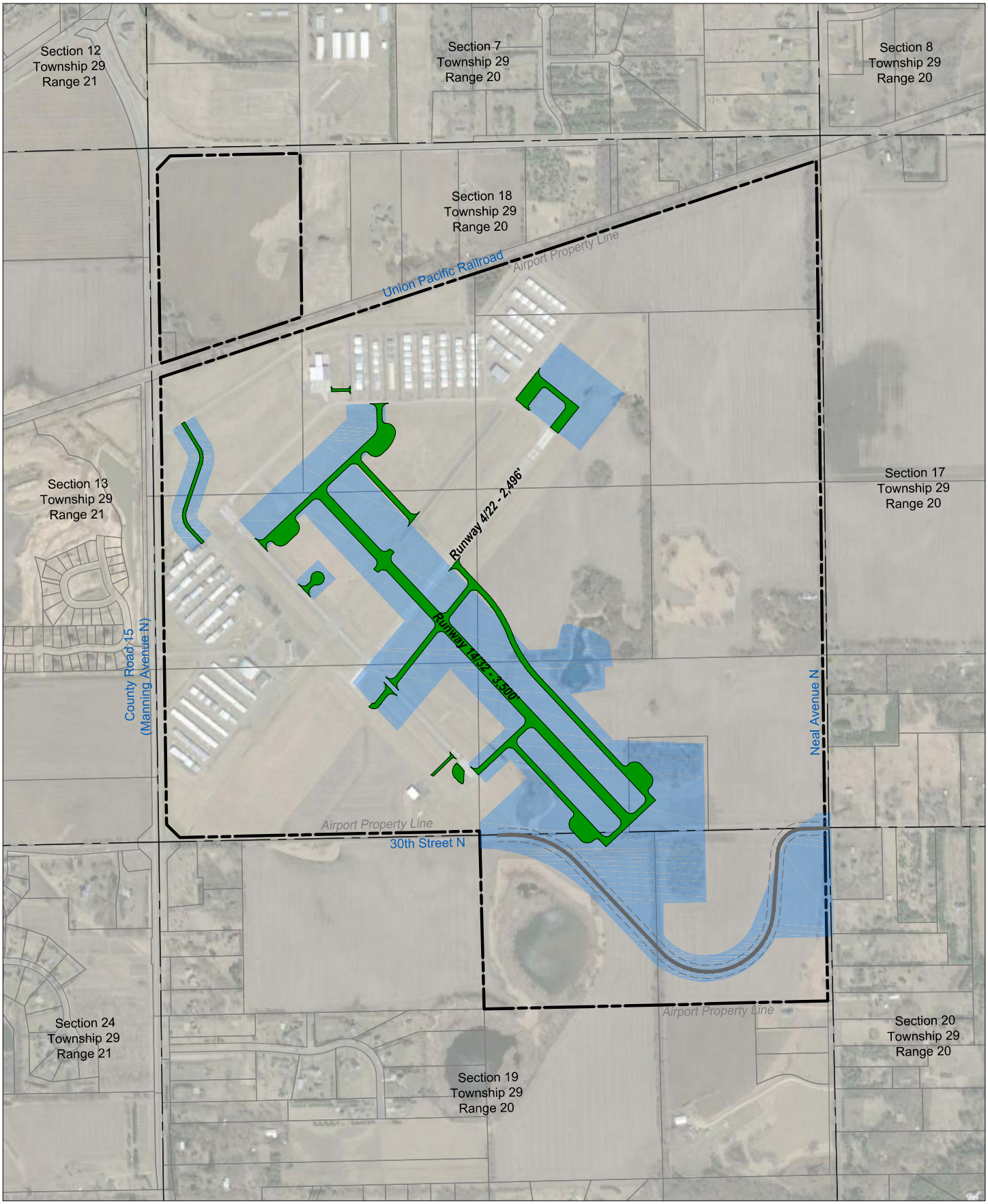
Please feel free to contact Evan Barrett at 952-941-5619 or Lou Bridges at 970-250-0135 if you should have any questions or need additional information

Louis J Bridges, PhD, PWS, CWB®
Senior Environmental Professional

Evan Barrett, AICP
Project Manager

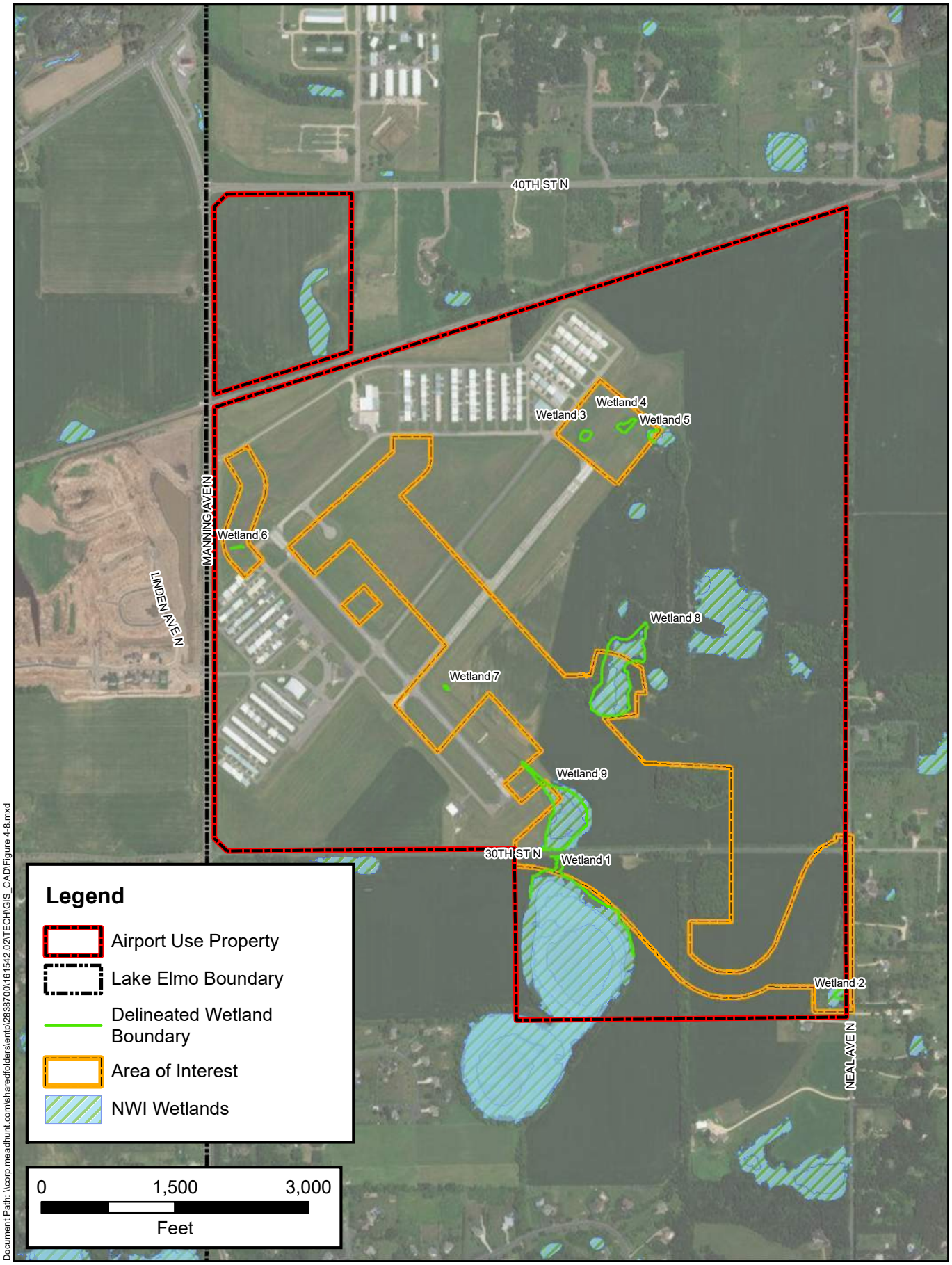
Attachments

Figure 1: Ground Disturbance area
Figure 2: Lake Elmo Wetlands
Figure 3: October 2017 Survey/Photo Points



Lake Elmo Airport
Runway 14-32

FIGURE 1
Project Area



Document Path: \\corp.meadhunt.com\sharedfolders\entp\283870\161542.02\TECH\GIS_CAD\Figure 4-8.mxd

Minnesota Department of Natural Resources - Public Waters Inventory (PWI) Map
http://www.dnr.state.mn.us/waters/watermgmt_section/pwi/maps.html

U.S. Fish & Wildlife Service - National Wetlands Inventory
https://www.fws.gov/wetlands/Data/Mapper.html

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FIGURE 2

Field Delineated Wetlands
Lake Elmo Airport
Environmental Assessment

LAKE ELMO AIRPORT
Photo Point Locations

LAKE ELMO AIRPORT

Proposed Runway 14-32 Runway Shift

Legend

- Photo Location
- Railroad
- Airport Property Boundary

N

0 150 300 600 900 1,200 Feet

Project Information

T29N, R20W, S18 and S19
City of Lake Elmo
Washington County, MN
Field work conducted:
October 17, 2017

Image Source: MnGEO WMS Image Service, Washington County (2016 color 7-county)

Mead & Hunt

Path: X:\283870016\1542.02\TECH\GIS_CAD\Maps\21D_LakeElmoWildlifePhotosPointsMap.mxd

Appendix J – Aircraft Noise Analysis Report

Content	Page
FAA AEDT Aircraft Substitution Approval Letter and Associated Request August 24, 2017	J-1 thru J-4
AEDT Modeling Inputs and Outputs Technical Memorandum December 21, 2017	J-5 thru J-17

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

8/24/2017

Josh Fitzpatrick
Environmental Protection Specialist
Federal Aviation Administration
Dakota-Minnesota Airport District Office
6020 28th Ave. S.
Minneapolis, MN 55450

Dear Josh,

The Office of Environment and Energy (AEE) has received the non-standard AEDT aircraft substitutions request memo, dated August 23rd 2017 referencing the Environmental Assessment for Lake Elmo Airport (21D) in Lake Elmo, Minnesota from Mead & Hunt Inc. on behalf of the Metropolitan Airports Commission.

Listed below are the AEE responses for the requested AEDT aircraft substitutions:

Aircraft Type	Aircraft Description	Proposed AEDT ANP Substitution	Required AEE AEDT ANP Substitution
Single Engine Piston	Van's RV-6/7/8/9/10/12	GASEPV	**Concur**
Single Engine Piston	Rockwell Commander 112	GASEPV	**Concur**
Twin Engine Piston	Cessna T-50 Bobcat	BEC58P	**Concur**
Twin Engine Piston	Diamond Twin Star DA42	PA30	**Concur**
Twin Engine Piston	Piper PA-44 Seminole	PA30	**Concur**
Twin Engine Piston	P-68 Observer	PA30	**Concur**

Please understand that this approval is limited to this particular request for the 2017 Environmental Assessment at Lake Elmo Airport for use with AEDT 2c SP2. All other non-standard AEDT inputs for this or any other project will require separate approval

Sincerely,

Rebecca Cointin
Manager
AEE-100/Noise Division

cc: Airports Contact (Frank Smigelski, Jim Byers APP-400)

Mead & Hunt, Inc.
M & H Architecture, Inc.
7900 West 78th Street, Suite 370
Minneapolis, Minnesota 55439
952-941-5619
meadhunt.com

August 23, 2017

Joshua Fitzpatrick, Environmental Protection Specialist
FAA Dakota-Minnesota Airports District Office, MSP-ADO-600
6020 28th Avenue South, Room 102
Minneapolis, MN 55450

CC to:
Sean Doyle, Environmental Protection Specialist AEE-100
FAA Office of Environment and Energy
800 Independence Avenue SW
Washington, DC 20591

Subject: Lake Elmo Airport – Environmental Assessment Request for AEDT Non-Standard Aircraft Substitutions

Dear Josh,

We are writing to request review and concurrence from the Federal Aviation Administration (FAA) for use of substitution aircraft noise profiles to represent aircraft types for which the Aviation Environmental Design Tool (AEDT) does not identify a standard substitution aircraft noise profile.

Environmental Assessment – Background

Mead & Hunt is conducting an Environmental Assessment (EA) for airfield improvements at Lake Elmo Airport in Lake Elmo, Minnesota, on behalf of the Metropolitan Airports Commission (MAC). The proposed project would relocate the primary runway (Runway 14/32) to the northeast and increase the runway length from 2,849 feet to 3,500 feet. It would also extend the crosswind runway (Runway 04/22) from 2,496 to 2,750 feet. The design aircraft for both runways are small aircraft with fewer than 10 passenger seats and weighing less than 12,500 pounds.

Noise Modeling – Background

Mead & Hunt will prepare AEDT noise contours for three proposed development alternatives and a no action alternative to evaluate in the EA. The proposed alternative contours represent 24,261 general aviation annual operations at the Lake Elmo Airport under a 2025 forecast scenario after the runways are extended as planned. The annual operations are distributed as follows:

- Single-Engine Piston – 22,563
- Multi-Engine Piston – 607
- Turboprop – 243
- Jet – 26
- Helicopters – 825

Based on noise contours developed by the MAC for its Long Term Comprehensive Plan, it is not expected that the 65 dB DNL contour will extend off airport property in any of the future development alternatives.

Noise Modeling – Proposed Grouping

Based on the MAC's flight track system data, we have identified six aircraft types which operated at the Airport and are not available in the AEDT. We propose the following substitutions to capture those operations:

Single Engine Piston NOT In AEDT	**Annual Operations**	**Proposed Substitutions**
Van's RV-6/7/8/9/10/12	4,625	GASEPV
Rockwell Commander 112	158	GASEPV
Twin Engine Piston NOT in AEDT		**Proposed Substitutions**
Cessna T-50 Bobcat	49	BEC58P
Diamond Twin Star DA42	16	PA30
Piper PA-44 Seminole	5	PA30
P-68 Observer	5	PA30

We respectfully request FAA AEE review/concurrence for the above substitutions for purposes of generating the noise contours for the Environmental Assessment for airfield improvements at Lake Elmo Airport.

Thank you for your assistance in this review. Please let me know if you require any additional information.

Sincerely,

Mead & Hunt, Inc.

Evan Barrett, AICP
Aviation Planner

Technical Memorandum

To: *Metropolitan Airports Commission, Airport Development & Environment Departments*
From: *Mead & Hunt, Inc.*
Date: *December 21, 2017*
Subject: *Lake Elmo Airport Federal EA/State EAW*
AEDT Modeling Inputs and Outputs

This technical memorandum presents the process and modeling inputs used in the creation of the following noise contour scenarios for the Lake Elmo Airport Federal EA/State EAW using the FAA's Aviation Environmental Design Tool (AEDT) Version 2c:

- 2016 Baseline Condition
- 2025 No-Action Alternative
- 2025 Alternatives B, B1 and B2

Per applicable FAA guidance, the environmental consequences section of an EA should include analysis of potential noise impacts of the proposed action and alternative(s) for each timeframe evaluated. Timeframes for this analysis were determined in consultation with the FAA Airports District Office in Minneapolis to represent appropriate baseline, no-action, and "with project" operational conditions. For aviation noise analyses, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of Yearly Day-Night Average Sound Level (DNL), the FAA's mandated noise metric for evaluating aircraft noise impacts and land use compatibility around US airports. This metric accounts for the noise levels of all individual aircraft events, the number of times those events occur, and the period of day/night in which they occur. The metric logarithmically averages aircraft sound levels at a location over a complete 24-hour period, with a 10-decibel (dB) adjustment added to those noise events occurring from 10:00 p.m. and up to 7:00 a.m. the following morning. This adjustment accounts for increased sensitivity to noise during normal nighttime hours and because ambient sound levels during nighttime are typically about 10 dB lower than during daytime hours.

The AEDT model was initially released in 2015 to replace a series of legacy tools, including the Integrated Noise Model (INM), which was previously used for noise modeling in the recently completed Long Term Comprehensive Plan (LTCP) for Lake Elmo Airport. According to FAA, there is an overlap in functionality and underlying methodologies between AEDT and the legacy tools, however updates were made in AEDT which result in differences when comparing outputs from AEDT and the legacy tools. The updates include smaller flight segments to more accurately model aircraft noise levels for a larger number of aircraft and positions and states along a flight path; a new standard (SAE-ARP-5534) for computing the effects of weather on noise; correcting misidentified aircraft engine mounted locations for three aircraft types; and moving from recursive grids to dynamic grids for noise contour generation.

Noise contours depict an annualized average day of aircraft noise impacts using model inputs, such as runway use, flight track use, aircraft fleet mix, aircraft performance and thrust settings, topography

information, and atmospheric conditions. Quantifying aircraft-specific noise characteristics in AEDT is accomplished through the use of a comprehensive noise database that has been developed under Federal Aviation Regulation Part 36. As part of the airworthiness certification process, aircraft manufacturers are required to subject aircraft to a battery of noise tests. Through the use of federally adopted and endorsed algorithms, this aircraft-specific noise information is used in the generation of DNL contours. Justification for such an approach is rooted in national standardization of noise quantification at airports.

Airport Operations

In coordination with MAC staff, Mead & Hunt developed 2016 baseline and 2025 forecast aircraft operations counts for the no-action and preferred alternative scenarios. The methodology for estimating these counts is explained in Appendix A, *Runway Length Needs Documentation*, which categorizes the operations according to specific aircraft make/model to each operation under the 2016 baseline scenario (see Table 14 in Appendix A), based on data provided from the FAA Traffic Management System Counts (TFMSC) and the MAC Noise and Operations Monitoring System (MACNOMS). For the 2025 forecast scenarios, the 2016 baseline distribution of flight track use for each aircraft make/model were applied to the 2025 forecasts (see Table 15 for 2025 No-Action (Base Case) forecast (Appendix A, Page A-14), and Table 18 for 2025 Extended Runway Scenario forecast (Appendix A, Page A-16)) for their respective engine type category to derive operations counts by specific aircraft make/model for the 2025 No-Action and Alternative B, B1, and B2 scenarios. **Tables 1**, **2**, and **3** attached to this memorandum present the daily baseline and forecast operations counts by aircraft type used to generate the AEDT inputs;

Runway Use

Specific 2016 baseline runway use and flight track distributions were estimated for each engine type category based on MACNOMS flight track data for which the aircraft type was known. The flight track distributions for operations to and from each runway end are the same in all scenarios, and the runway use distributions are the same in both the 2016 baseline and 2025 no-action scenarios. However, the runway use distributions were modified for the 2025 “with project” scenarios to account for runway improvements associated with the proposed action. **Tables 4** and **5** attached to this memorandum present the percentages used to distribute these daily operations among the four runway ends. Expected changes to runway use preference include the following:

- Piston aircraft are expected to use Runway 04/22 more often once the runway is extended and non-precision instrument approach procedures are established. Approximately 25% of piston operations occur on Runway 04/22 in the 2016 baseline and 2025 no-action scenarios, whereas approximately 35% occur on Runway 04/22 in the 2025 “with project” scenarios.
- Turboprop and jet aircraft are expected to use the Runway 14 end of the primary runway more often once an approach procedure is established. Approximately 30% of turboprop arrivals and no jet arrivals occur on Runway 14 in the 2016 baseline and 2025 no-action scenarios, whereas approximately 45% of turboprop arrivals and 33% of jet arrivals occur on Runway 14 in the 2025 “with project” scenarios. In all scenarios, all multi-engine turboprop and jet aircraft operations are expected to occur on the primary runway.

- Approximately 4% of single-engine turboprop operations are expected to occur on Runway 04/22 in the 2025 “with project” scenarios, whereas there are no single-engine turboprop operations on this runway in the 2016 baseline and 2025 no-action scenarios.

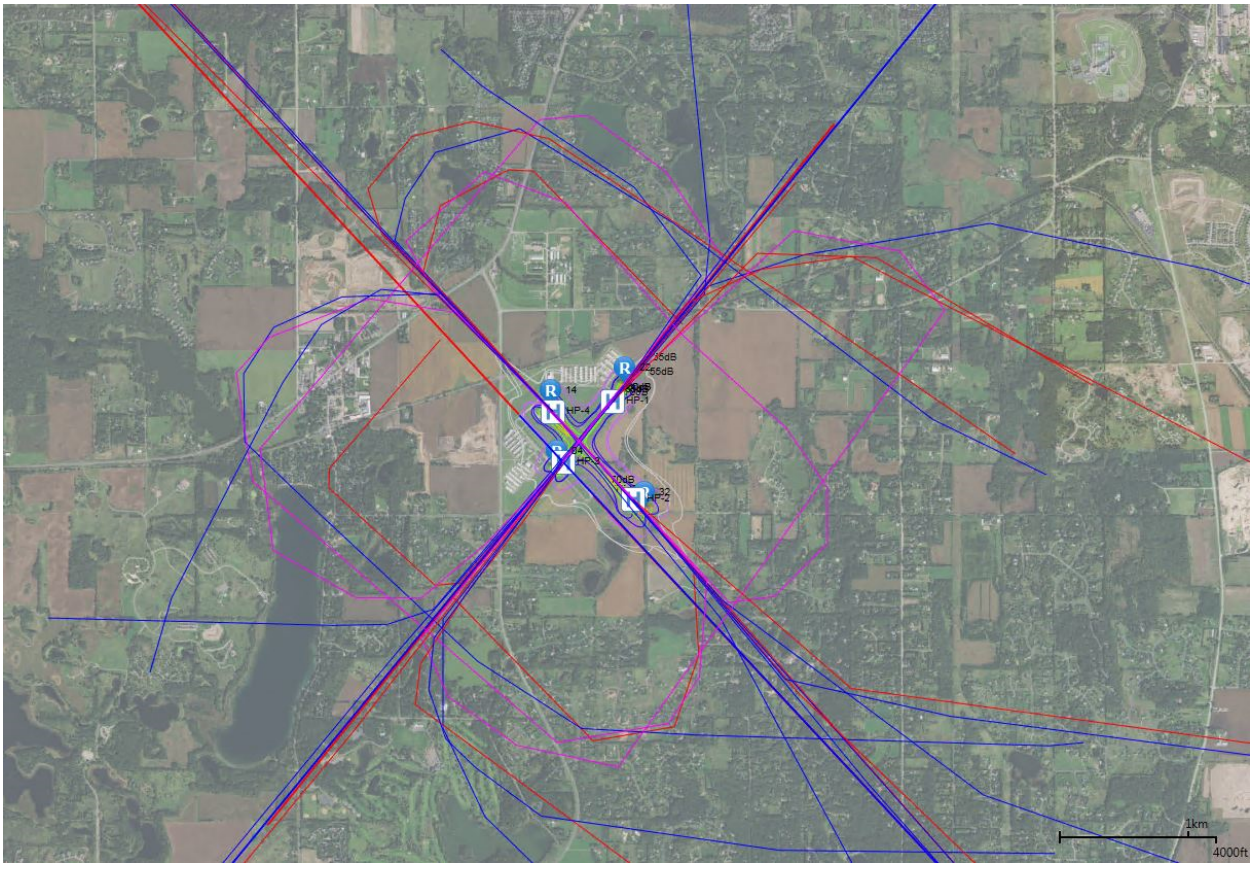
Day/Night Split

The 2016 MACNOMS data indicate that approximately 4% of total operations at Lake Elmo Airport occur during nighttime hours. To estimate nighttime operations and apply the 10-dB nighttime noise sensitivity penalty within the AEDT model, this percentage was applied to all operations for all aircraft makes/models in all scenarios.

Flight Tracks

Flight tracks were developed based on MACNOMS flight tracks and are consistent with those used in the recently completed Long Term Comprehensive Plan (LTCP). The AEDT study used two arrival tracks (straight-in, and left turn arrivals) and three departure tracks (straight-out, left turn departure, and right turn departure) for each runway end. The image below depicts arrival, departure and touch-and-go tracks as drawn in AEDT.

- Red are arrival tracks
- Blue are departure tracks
- Magenta are touch-and-go tracks



Track utilization percentages used in the AEDT study are shown in **Table 6** attached to this memorandum. It is worth noting that due to the low number of total operations, the locations of arrival and departure tracks, and track utilization percentages are not expected to impact the contour size and shape. The contours do not extend out to the point where tracks begin to make turns, therefore would not change with different percentage utilization. The primary drivers of where noise is located and distributed at this airport, is the runway end utilization percentages and aircraft types modeled.

Approval of Non-Standard Aircraft Substitutions

In a letter dated August 22, 2017, the FAA Office of Environment and Energy (AAE) approved use of specific aircraft noise profiles for this study, to represent aircraft types for which AEDT does not identify a standard substitution. These aircraft types and substitution aircraft noise profiles were as follows:

- Van's RV-6/7/8/9/1012 and Rockwell Commander 112 substituted with GASEPV noise profile.
- Cessna T-50 Bobcat substituted with BEC58P noise profile.
- Diamond Twin Star DA42, Piper PA-44 Seminole, and P-68 Observer substituted with PA30 noise profile.

Weather

The weather data used in the noise study were acquired from the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center, which are auto-populated in the AEDT model based on the Airport's location. Two separate data sources were used from NOAA, 30-year normals for 1971-2000 and 10-year averages for 1994-2004. Because there was not a weather station present at Lake Elmo Airport during either of these historic periods, weather data from St. Paul Downtown Airport was substituted by the model. The following weather inputs were used within the AEDT model to represent average operating conditions at Lake Elmo Airport:

- Ambient temperature = 46° Fahrenheit
- Sea level pressure = 1016.150024 millibars
- Relative humidity = 70.63%
- Dew point = 36.58° Fahrenheit
- Headwind speed = 7.37 knots

Graphics depicting the 2016 baseline, 2025 no-action alternative, and 2025 preferred alternative (B1) noise contours are shown in **Figures 5-1**, **5-2**, and **5-3**, attached to this memorandum. These graphics are also included in the Environmental Consequences chapter of the EA/EAW.

As shown in the figures, the 65 DNL contour would be contained entirely on Airport property under all three scenarios. As a result, there are no significant noise impacts to mitigate for the no-action or preferred alternatives. Noise contours were developed for the 60 DNL for informational purposes only, as FAA does not consider the 60 DNL significant per FAA Orders. The 60 DNL extends west of Airport property in the Baseline 2016 and No Action 2025 scenarios, but is contained entirely on Airport property in the Preferred Alternative 2025 scenario.

Table 1: 2016 Baseline Average Daily Operations

Aircraft Type		AEDT Aircraft ID	Departures			Arrivals			Touch and Gos			Total Operations		
			Day	Night	Total	Day	Night	Total	Day	Night	Total	Day	Night	Total
Helicopter			1.341	0.000	1.341	1.341	0.000	1.341	0.000	0.000	0.000	2.682	0.000	2.682
	Robinson R44	R44	1.341	0.000	1.341	1.341	0.000	1.341	0.000	0.000	0.000	2.682	0.000	2.682
Small Jet			0.004	0.000	0.004	0.004	0.000	0.004	0.000	0.000	0.000	0.008	0.000	0.008
	Cessna Citation Jet 560XLS	CNA560XL	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.000	0.000	0.004	0.000	0.004
	Cessna Mustang	CNA510	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.000	0.000	0.004	0.000	0.004
Single-Engine Piston			24.653	1.043	25.696	24.653	1.054	25.707	13.981	0.598	14.579	63.286	2.695	65.982
	Piper PA-28/32 Cherokee/Warrior/Dakota/Arrow	GASEPF	7.458	0.316	7.774	7.458	0.319	7.777	4.232	0.181	4.413	19.149	0.815	19.964
	Van's RV-6/7/8/9/10/12	GASEPV	5.046	0.214	5.260	5.046	0.216	5.262	2.863	0.122	2.986	12.955	0.552	13.507
	Cessna 172	GASEPF	2.166	0.092	2.258	2.166	0.093	2.259	1.229	0.053	1.281	5.561	0.237	5.798
	Cessna 182	CNA182	1.342	0.057	1.399	1.342	0.057	1.400	0.762	0.033	0.794	3.446	0.147	3.593
	Cirrus SR20/SR22/SR22-Turbo	COMSEP	2.954	0.125	3.079	2.954	0.126	3.080	1.676	0.072	1.748	7.584	0.323	7.907
	Beech Bonanza 33/34/35/36	CNA208	1.920	0.081	2.001	1.920	0.082	2.002	1.089	0.047	1.136	4.929	0.210	5.139
	Cessna 150	GASEPF	1.403	0.059	1.462	1.403	0.060	1.463	0.796	0.034	0.830	3.602	0.153	3.756
	Cessna 205/206/210	GASEPV	0.911	0.039	0.949	0.911	0.039	0.950	0.517	0.022	0.539	2.338	0.100	2.438
	Mooney M-20 (various models)	GASEPV	0.689	0.029	0.718	0.689	0.029	0.719	0.391	0.017	0.408	1.770	0.075	1.845
	Lancair LC-41 Columbia 300/400	GASEPV	0.418	0.018	0.436	0.418	0.018	0.436	0.237	0.010	0.248	1.074	0.046	1.120
	Rockwell Commander 112	GASEPV	0.172	0.007	0.180	0.172	0.007	0.180	0.098	0.004	0.102	0.442	0.019	0.461
	Piper PA-24 Comanche	GASEPV	0.123	0.005	0.128	0.123	0.005	0.128	0.070	0.003	0.073	0.316	0.013	0.329
	Piper PA-46 Malibu	GASEPF	0.049	0.002	0.051	0.049	0.002	0.051	0.021	0.001	0.022	0.120	0.005	0.125
Twin-Engine Piston			0.595	0.025	0.621	0.595	0.025	0.621	0.132	0.006	0.138	1.323	0.056	1.379
	Cessna 335/337/340	BEC58P	0.160	0.007	0.167	0.160	0.007	0.167	0.036	0.002	0.037	0.356	0.015	0.371
	Beech Baron 55/58	BEC58P	0.098	0.004	0.102	0.098	0.004	0.102	0.022	0.001	0.023	0.217	0.009	0.226
	Piper PA-30 Twin Comanche	PA30	0.095	0.004	0.099	0.095	0.004	0.099	0.021	0.001	0.022	0.212	0.009	0.221
	Piper PA-31 Navajo / Chieftain	BEC58P	0.058	0.002	0.061	0.058	0.002	0.061	0.013	0.001	0.014	0.130	0.006	0.135
	Piper PA-23 Apache/Aztec	BEC58P	0.053	0.002	0.055	0.053	0.002	0.055	0.012	0.001	0.012	0.118	0.005	0.123
	Cessna T-50 Bobcat	BEC58P	0.048	0.002	0.050	0.048	0.002	0.050	0.011	0.000	0.011	0.106	0.005	0.111
	Cessna 421	BEC58P	0.018	0.001	0.019	0.018	0.001	0.019	0.004	0.000	0.004	0.040	0.002	0.042
	Cessna Chancellor 414	BEC58P	0.018	0.001	0.019	0.018	0.001	0.019	0.004	0.000	0.004	0.040	0.002	0.042
	Diamond Twin Star DA42	PA30	0.015	0.001	0.016	0.015	0.001	0.016	0.003	0.000	0.004	0.034	0.001	0.035
	Piper PA-34 Seneca	BEC58P	0.011	0.000	0.011	0.011	0.000	0.011	0.002	0.000	0.002	0.024	0.001	0.025
	Cessna 310	BEC58P	0.011	0.000	0.011	0.011	0.000	0.011	0.002	0.000	0.002	0.024	0.001	0.025
	Piper PA-44 Seminole	PA30	0.005	0.000	0.006	0.005	0.000	0.006	0.001	0.000	0.001	0.012	0.001	0.012
	P-68 Observer	PA30	0.005	0.000	0.006	0.005	0.000	0.006	0.001	0.000	0.001	0.012	0.001	0.012
Single-Engine Turbo Prop			0.041	0.002	0.043	0.041	0.002	0.043	0.000	0.000	0.000	0.083	0.004	0.086
	Socata TBM-700/850	CNA208	0.032	0.001	0.033	0.032	0.001	0.033	0.000	0.000	0.000	0.063	0.003	0.066
	Piper PA-46T Malibu Meridian	CNA441	0.004	0.000	0.004	0.004	0.000	0.004	0.000	0.000	0.000	0.008	0.000	0.009
	Pilatus PC-12	CNA208	0.003	0.000	0.003	0.003	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.006
	Cessna 208 Caravan	CNA208	0.003	0.000	0.003	0.003	0.000	0.003	0.000	0.000	0.000	0.006	0.000	0.006
Twin-Engine Turboprop			0.043	0.000	0.043	0.043	0.000	0.043	0.000	0.000	0.000	0.086	0.000	0.086
	Beech King Air 90	DHC6	0.007	0.000	0.007	0.007	0.000	0.007	0.000	0.000	0.000	0.014	0.000	0.014
	Beech King Air 200	DHC6	0.007	0.000	0.007	0.007	0.000	0.007	0.000	0.000	0.000	0.014	0.000	0.014
	Cessna Conquest 441	CNA441	0.014	0.000	0.014	0.014	0.000	0.014	0.000	0.000	0.000	0.029	0.000	0.029
	Swearingen Merlin III	DHC6	0.014	0.000	0.014	0.014	0.000	0.014	0.000	0.000	0.000	0.029	0.000	0.029
TOTAL			26.678	1.070	27.748	26.678	1.081	27.759	14.113	0.604	14.717	67.469	2.755	70.224

*Totals may not add due to rounding

Table 2: 2025 No Action Average Daily Operations

Aircraft Type		AEDT Aircraft ID	Departures			Arrivals			Touch and Gos			Total Operations		
			Day	Night	Total	Day	Night	Total	Day	Night	Total	Day	Night	Total
Helicopter			1.251	0.000	1.251	1.251	0.000	1.251	0.000	0.000	0.000	2.501	0.000	2.501
	Robinson R44	R44	1.251	0.000	1.251	1.251	0.000	1.251	0.000	0.000	0.000	2.501	0.000	2.501
Small Jet			0.004	0.000	0.004	0.004	0.000	0.004	0.000	0.000	0.000	0.008	0.000	0.008
	Cessna Citation Jet 560XLS	CNA560XL	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.000	0.000	0.004	0.000	0.004
	Cessna Mustang	CNA510	0.002	0.000	0.002	0.002	0.000	0.002	0.000	0.000	0.000	0.004	0.000	0.004
Single-Engine Piston			23.026	0.975	24.001	23.026	0.984	24.011	13.059	0.559	13.617	59.111	2.518	61.628
	Piper PA-28/32 Cherokee/Warrior/Dakota/Arrow	GASEPF	6.966	0.295	7.261	6.966	0.298	7.264	3.953	0.169	4.122	17.885	0.762	18.647
	Van's RV-6/7/8/9/10/12	GASEPV	4.713	0.199	4.913	4.713	0.202	4.915	2.674	0.114	2.789	12.101	0.515	12.616
	Cessna 172	GASEPF	2.023	0.086	2.109	2.023	0.086	2.109	1.148	0.049	1.197	5.194	0.221	5.415
	Cessna 182	CNA182	1.254	0.053	1.307	1.254	0.054	1.307	0.711	0.030	0.742	3.219	0.137	3.356
	Cirrus SR20/SR22/SR22-Turbo	COMSEP	2.759	0.117	2.876	2.759	0.118	2.877	1.565	0.067	1.632	7.083	0.302	7.385
	Beech Bonanza 33/34/35/36	CNA208	1.793	0.076	1.869	1.793	0.077	1.870	1.018	0.044	1.061	4.604	0.196	4.800
	Cessna 150	GASEPF	1.310	0.055	1.366	1.310	0.056	1.367	0.744	0.032	0.775	3.365	0.143	3.508
	Cessna 205/206/210	GASEPV	0.851	0.036	0.887	0.851	0.036	0.887	0.483	0.021	0.503	2.184	0.093	2.277
	Mooney M-20 (various models)	GASEPV	0.644	0.027	0.671	0.644	0.028	0.671	0.365	0.016	0.381	1.653	0.070	1.723
	Lancair LC-41 Columbia 300/400	GASEPV	0.391	0.017	0.407	0.391	0.017	0.408	0.222	0.009	0.231	1.003	0.043	1.046
	Rockwell Commander 112	GASEPV	0.161	0.007	0.168	0.161	0.007	0.168	0.091	0.004	0.095	0.413	0.018	0.431
	Piper PA-24 Comanche	GASEPV	0.115	0.005	0.120	0.115	0.005	0.120	0.065	0.003	0.068	0.295	0.013	0.308
	Piper PA-46 Malibu	GASEPF	0.046	0.002	0.048	0.046	0.002	0.048	0.020	0.001	0.021	0.112	0.005	0.117
Twin-Engine Piston			0.557	0.024	0.581	0.557	0.024	0.581	0.124	0.005	0.129	1.238	0.053	1.291
	Cessna 335/337/340	BEC58P	0.150	0.006	0.156	0.150	0.006	0.156	0.033	0.001	0.035	0.333	0.014	0.347
	Beech Baron 55/58	BEC58P	0.091	0.004	0.095	0.091	0.004	0.095	0.020	0.001	0.021	0.203	0.009	0.212
	Piper PA-30 Twin Comanche	PA30	0.089	0.004	0.093	0.089	0.004	0.093	0.020	0.001	0.021	0.198	0.008	0.207
	Piper PA-31 Navajo / Chieftain	BEC58P	0.055	0.002	0.057	0.055	0.002	0.057	0.012	0.001	0.013	0.121	0.005	0.126
	Piper PA-23 Apache/Aztec	BEC58P	0.050	0.002	0.052	0.050	0.002	0.052	0.011	0.000	0.011	0.110	0.005	0.115
	Cessna T-50 Bobcat	BEC58P	0.045	0.002	0.047	0.045	0.002	0.047	0.010	0.000	0.010	0.099	0.004	0.103
	Cessna 421	BEC58P	0.017	0.001	0.018	0.017	0.001	0.018	0.004	0.000	0.004	0.037	0.002	0.039
	Cessna Chancellor 414	BEC58P	0.017	0.001	0.018	0.017	0.001	0.018	0.004	0.000	0.004	0.037	0.002	0.039
	Diamond Twin Star DA42	PA30	0.014	0.001	0.015	0.014	0.001	0.015	0.003	0.000	0.003	0.032	0.001	0.033
	Piper PA-34 Seneca	BEC58P	0.010	0.000	0.010	0.010	0.000	0.010	0.002	0.000	0.002	0.022	0.001	0.023
	Cessna 310	BEC58P	0.010	0.000	0.010	0.010	0.000	0.010	0.002	0.000	0.002	0.022	0.001	0.023
	Piper PA-44 Seminole	PA30	0.005	0.000	0.005	0.005	0.000	0.005	0.001	0.000	0.001	0.011	0.000	0.011
	P-68 Observer	PA30	0.005	0.000	0.005	0.005	0.000	0.005	0.001	0.000	0.001	0.011	0.000	0.011
Single-Engine Turbo Prop			0.039	0.002	0.041	0.039	0.002	0.041	0.000	0.000	0.000	0.079	0.003	0.082
	Socata TBM-700/850	CNA208	0.030	0.001	0.032	0.030	0.001	0.032	0.000	0.000	0.000	0.060	0.003	0.063
	Piper PA-46T Malibu Meridian	CNA441	0.004	0.000	0.004	0.004	0.000	0.004	0.000	0.000	0.000	0.008	0.000	0.008
	Pilatus PC-12	CNA208	0.003	0.000	0.003	0.003	0.000	0.003	0.000	0.000	0.000	0.005	0.000	0.006
	Cessna 208 Caravan	CNA208	0.003	0.000	0.003	0.003	0.000	0.003	0.000	0.000	0.000	0.005	0.000	0.006
Twin-Engine Turboprop			0.041	0.000	0.041	0.041	0.000	0.041	0.000	0.000	0.000	0.082	0.000	0.082
	Beech King Air 90	DHC6	0.007	0.000	0.007	0.007	0.000	0.007	0.000	0.000	0.000	0.014	0.000	0.014
	Beech King Air 200	DHC6	0.007	0.000	0.007	0.007	0.000	0.007	0.000	0.000	0.000	0.014	0.000	0.014
	Cessna Conquest 441	CNA441	0.014	0.000	0.014	0.014	0.000	0.014	0.000	0.000	0.000	0.027	0.000	0.027
	Swearingen Merlin III	DHC6	0.014	0.000	0.014	0.014	0.000	0.014	0.000	0.000	0.000	0.027	0.000	0.027
TOTAL			24.919	1.000	25.918	24.918	1.010	25.928	13.182	0.564	13.746	63.019	2.574	65.593

*Totals may not add due to rounding

Table 3: 2025 With Project Average Daily Operations

Aircraft Type		AEDT Aircraft ID	Departures			Arrivals			Touch and Gos			Total Operations		
			Day	Night	Total	Day	Night	Total	Day	Night	Total	Day	Night	Total
Helicopter			1.084	0.046	1.130	1.084	0.046	1.130	0.000	0.000	0.000	2.168	0.093	2.260
	Robinson R44	R44	1.084	0.046	1.130	1.084	0.046	1.130	0.000	0.000	0.000	2.168	0.093	2.260
Small Jet			0.032	0.001	0.033	0.032	0.001	0.033	0.000	0.000	0.000	0.063	0.003	0.066
	Cessna Citation Jet 560XLS	CNA560XL	0.016	0.001	0.016	0.016	0.001	0.016	0.000	0.000	0.000	0.032	0.001	0.033
	Cessna Mustang	CNA510	0.016	0.001	0.016	0.016	0.001	0.016	0.000	0.000	0.000	0.032	0.001	0.033
Single-Engine Piston			23.125	0.989	24.114	23.125	0.989	24.114	13.113	0.561	13.674	59.364	2.538	61.902
	Piper PA-28/32 Cherokee/Warrior/Dakota/Arrow	GASEPF	6.996	0.299	7.295	6.996	0.299	7.295	3.970	0.170	4.139	17.962	0.768	18.730
	Van's RV-6/7/8/9/10/12	GASEPV	4.734	0.202	4.936	4.734	0.202	4.936	2.686	0.115	2.801	12.153	0.520	12.672
	Cessna 172	GASEPF	2.032	0.087	2.119	2.032	0.087	2.119	1.153	0.049	1.202	5.216	0.223	5.439
	Cessna 182	CNA182	1.259	0.054	1.313	1.259	0.054	1.313	0.714	0.031	0.745	3.233	0.138	3.371
	Cirrus SR20/SR22/SR22-Turbo	COMSEP	2.771	0.118	2.889	2.771	0.118	2.889	1.572	0.067	1.639	7.114	0.304	7.418
	Beech Bonanza 33/34/35/36	CNA208	1.801	0.077	1.878	1.801	0.077	1.878	1.022	0.044	1.066	4.624	0.198	4.822
	Cessna 150	GASEPF	1.316	0.056	1.372	1.316	0.056	1.372	0.747	0.032	0.779	3.379	0.144	3.524
	Cessna 205/206/210	GASEPV	0.854	0.037	0.891	0.854	0.037	0.891	0.485	0.021	0.505	2.193	0.094	2.287
	Mooney M-20 (various models)	GASEPV	0.647	0.028	0.674	0.647	0.028	0.674	0.367	0.016	0.383	1.660	0.071	1.731
	Lancair LC-41 Columbia 300/400	GASEPV	0.393	0.017	0.409	0.393	0.017	0.409	0.223	0.010	0.232	1.008	0.043	1.051
	Rockwell Commander 112	GASEPV	0.162	0.007	0.169	0.162	0.007	0.169	0.092	0.004	0.096	0.415	0.018	0.433
	Piper PA-24 Comanche	GASEPV	0.115	0.005	0.120	0.115	0.005	0.120	0.066	0.003	0.068	0.296	0.013	0.309
	Piper PA-46 Malibu	GASEPF	0.046	0.002	0.048	0.046	0.002	0.048	0.018	0.001	0.019	0.110	0.005	0.115
Twin-Engine Piston			0.726	0.031	0.757	0.726	0.031	0.757	0.161	0.007	0.168	1.613	0.069	1.681
	Cessna 335/337/340	BEC58P	0.195	0.008	0.204	0.195	0.008	0.204	0.043	0.002	0.045	0.434	0.019	0.452
	Beech Baron 55/58	BEC58P	0.119	0.005	0.124	0.119	0.005	0.124	0.026	0.001	0.028	0.265	0.011	0.276
	Piper PA-30 Twin Comanche	PA30	0.116	0.005	0.121	0.116	0.005	0.121	0.026	0.001	0.027	0.258	0.011	0.269
	Piper PA-31 Navajo / Chieftain	BEC58P	0.071	0.003	0.074	0.071	0.003	0.074	0.016	0.001	0.016	0.158	0.007	0.165
	Piper PA-23 Apache/Aztec	BEC58P	0.065	0.003	0.067	0.065	0.003	0.067	0.014	0.001	0.015	0.144	0.006	0.150
	Cessna T-50 Bobcat	BEC58P	0.058	0.002	0.061	0.058	0.002	0.061	0.013	0.001	0.013	0.129	0.006	0.135
	Cessna 421	BEC58P	0.022	0.001	0.023	0.022	0.001	0.023	0.005	0.000	0.005	0.049	0.002	0.051
	Cessna Chancellor 414	BEC58P	0.022	0.001	0.023	0.022	0.001	0.023	0.005	0.000	0.005	0.049	0.002	0.051
	Diamond Twin Star DA42	PA30	0.019	0.001	0.019	0.019	0.001	0.019	0.004	0.000	0.004	0.041	0.002	0.043
	Piper PA-34 Seneca	BEC58P	0.013	0.001	0.013	0.013	0.001	0.013	0.003	0.000	0.003	0.029	0.001	0.030
	Cessna 310	BEC58P	0.013	0.001	0.013	0.013	0.001	0.013	0.003	0.000	0.003	0.029	0.001	0.030
	Piper PA-44 Seminole	PA30	0.006	0.000	0.007	0.006	0.000	0.007	0.001	0.000	0.001	0.014	0.001	0.015
	P-68 Observer	PA30	0.006	0.000	0.007	0.006	0.000	0.007	0.001	0.000	0.001	0.014	0.001	0.015
Single-Engine Turbo Prop			0.160	0.007	0.167	0.160	0.007	0.167	0.000	0.000	0.000	0.320	0.014	0.333
	Socata TBM-700/850	CNA208	0.122	0.005	0.128	0.122	0.005	0.128	0.000	0.000	0.000	0.245	0.010	0.255
	Piper PA-46T Malibu Meridian	CNA441	0.016	0.001	0.017	0.016	0.001	0.017	0.000	0.000	0.000	0.032	0.001	0.033
	Pilatus PC-12	CNA208	0.011	0.000	0.011	0.011	0.000	0.011	0.000	0.000	0.000	0.021	0.001	0.022
	Cessna 208 Caravan	CNA208	0.011	0.000	0.011	0.011	0.000	0.011	0.000	0.000	0.000	0.021	0.001	0.022
Twin-Engine Turboprop			0.159	0.007	0.166	0.159	0.007	0.166	0.000	0.000	0.000	0.319	0.014	0.333
	Beech King Air 90	DHC6	0.027	0.001	0.028	0.027	0.001	0.028	0.000	0.000	0.000	0.053	0.002	0.055
	Beech King Air 200	DHC6	0.027	0.001	0.028	0.027	0.001	0.028	0.000	0.000	0.000	0.053	0.002	0.055
	Cessna Conquest 441	CNA441	0.053	0.002	0.055	0.053	0.002	0.055	0.000	0.000	0.000	0.106	0.005	0.111
	Swearingen Merlin III	DHC6	0.053	0.002	0.055	0.053	0.002	0.055	0.000	0.000	0.000	0.106	0.005	0.111
TOTAL			25.286	1.081	26.367	25.286	1.081	26.367	13.274	0.568	13.842	63.846	2.730	66.575

*Totals may not add due to rounding

Table 4: 2016 Baseline Condition & 2025 No-Action Alternative Average Annual Runway Use

		Arrivals			Departures			Touch and Gos		
Aircraft Group	**Rwy**	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**
Helicopter	4	13%	13%	13%	4%	4%	4%	0%	0%	0%
	14	34%	34%	34%	23%	23%	23%	0%	0%	0%
	22	15%	15%	15%	26%	26%	26%	0%	0%	0%
	32	39%	39%	39%	47%	47%	47%	0%	0%	0%
Single Piston	4	7%	0%	7%	11%	22%	11%	10%	12%	10%
	14	38%	60%	38%	40%	33%	40%	34%	37%	34%
	22	18%	0%	17%	15%	11%	15%	23%	19%	22%
	32	38%	40%	38%	34%	33%	34%	33%	33%	33%
Twin Piston	4	8%	0%	6%	19%	14%	18%	0%	0%	0%
	14	44%	50%	45%	33%	14%	33%	50%	0%	50%
	22	12%	0%	9%	15%	0%	14%	0%	0%	0%
	32	36%	50%	39%	33%	71%	35%	50%	0%	50%
Single Turboprop	4	0%	0%	0%	0%	0%	0%	0%	0%	0%
	14	31%	0%	31%	57%	0%	57%	0%	0%	0%
	22	0%	0%	0%	0%	0%	0%	0%	0%	0%
	32	69%	0%	69%	43%	0%	43%	0%	0%	0%
Twin Turboprop	4	0%	0%	0%	0%	0%	0%	0%	0%	0%
	14	30%	0%	30%	30%	0%	30%	0%	0%	0%
	22	0%	0%	0%	0%	0%	0%	0%	0%	0%
	32	70%	0%	70%	70%	0%	70%	0%	0%	0%
Jet	4	0%	0%	0%	0%	0%	0%	0%	0%	0%
	14	0%	0%	0%	0%	0%	0%	0%	0%	0%
	22	0%	0%	0%	0%	0%	0%	0%	0%	0%
	32	100%	0%	100%	100%	0%	100%	0%	0%	0%

Note: Totals may not add to 100% due to rounding.

Source: MAC, Mead & Hunt

Table 5: 2025 With Project Condition Average Annual Runway Use

		Arrivals			Departures			Touch and Gos		
Aircraft Group	**Rwy**	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**	**Day**	**Night**	**Total**
Helicopter	4	13%	13%	13%	4%	4%	4%	0%	0%	0%
	14	34%	34%	34%	23%	23%	23%	0%	0%	0%
	22	15%	15%	15%	26%	26%	26%	0%	0%	0%
	32	39%	39%	39%	47%	47%	47%	0%	0%	0%
Single Piston	4	10%	3%	10%	15%	27%	15%	15%	17%	15%
	14	35%	57%	35%	37%	30%	37%	30%	32%	30%
	22	22%	3%	21%	18%	14%	18%	27%	22%	26%
	32	33%	37%	34%	30%	29%	30%	28%	29%	29%
Twin Piston	4	10%	2%	8%	24%	17%	22%	0%	0%	0%
	14	42%	48%	43%	29%	12%	29%	50%	0%	50%
	22	15%	2%	14%	18%	2%	18%	0%	0%	0%
	32	33%	48%	35%	29%	69%	31%	50%	0%	50%
Single Turboprop	4	2%	0%	2%	2%	0%	2%	0%	0%	0%
	14	48%	50%	48%	55%	50%	55%	0%	0%	0%
	22	2%	0%	2%	2%	0%	2%	0%	0%	0%
	32	48%	50%	48%	41%	50%	41%	0%	0%	0%
Twin Turboprop	4	0%	0%	0%	0%	0%	0%	0%	0%	0%
	14	40%	40%	40%	40%	40%	40%	0%	0%	0%
	22	0%	0%	0%	0%	0%	0%	0%	0%	0%
	32	60%	60%	60%	60%	60%	60%	0%	0%	0%
Jet	4	0%	0%	0%	0%	0%	0%	0%	0%	0%
	14	33%	33%	33%	40%	40%	40%	0%	0%	0%
	22	0%	0%	0%	0%	0%	0%	0%	0%	0%
	32	67%	67%	67%	60%	60%	60%	0%	0%	0%

Notes: All new twin turboprop and jet aircraft operations assigned to Runway 14/32 due to length requirements. Greater share of overall piston and single turboprop aircraft operations assigned to Runway 04/22 due to planned extension, lighting, and approach procedures. Greater share of 14/32 operations in all categories except helicopters assigned to 14 due to new approach procedure. Totals may not add to 100% due to rounding.

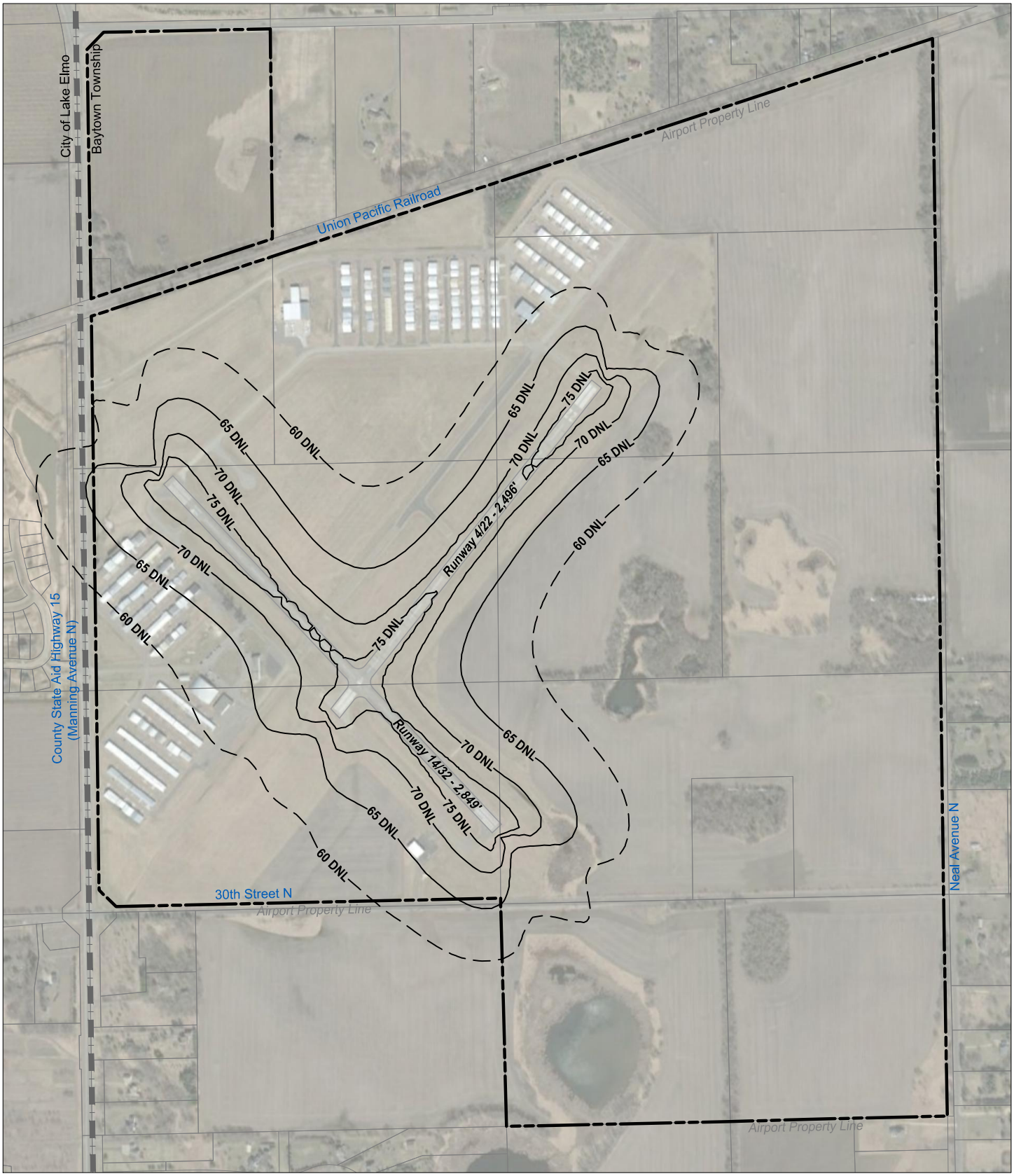
Source: MAC, Mead & Hunt

Table 6: Flight Track Use Distribution (all scenarios and runway ends)

Track		Helicopter	Single Piston	Twin Piston	Single Turboprop	Twin Turboprop	Jet
Arrival	Straight-In	25%	25%	25%	25%	25%	25%
	Left Turn	25%	25%	25%	25%	25%	25%
Departure	Straight-Out	45%	3%	17%	17%	17%	25%
	Left Turn	5%	38%	17%	17%	17%	25%
	Right Turn	0%	10%	17%	17%	17%	0%

Note: Totals may not add to 100% due to rounding.

Source: Mead & Hunt



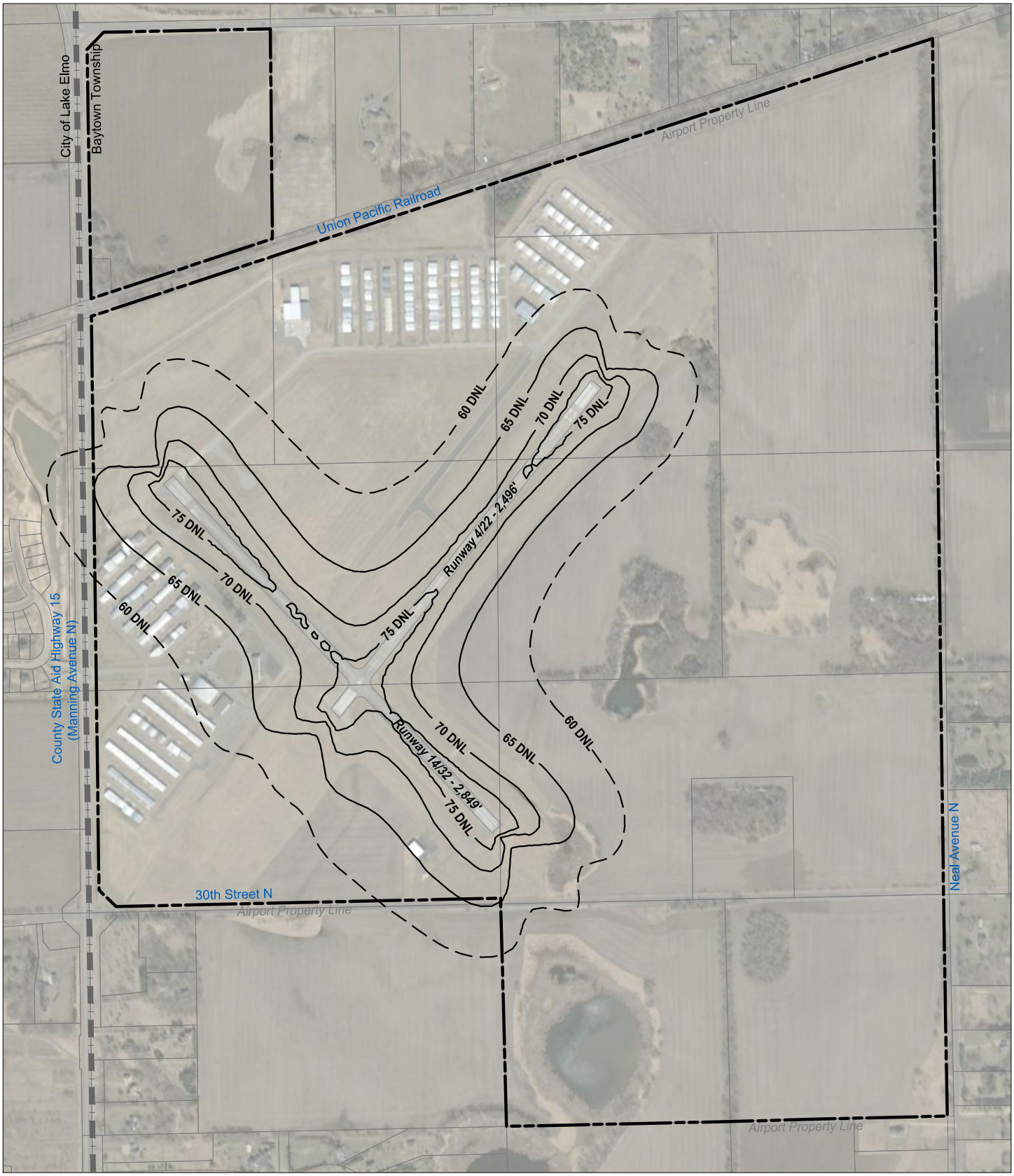
Note: Aircraft noise contour 60 DNL is shown for informational purposes only.

0 400' 800' 1600'

GRAPHIC SCALE IN FEET

Lake Elmo Airport
Runway 14-32

FIGURE 5-1
2016 Baseline Aircraft Noise Contours



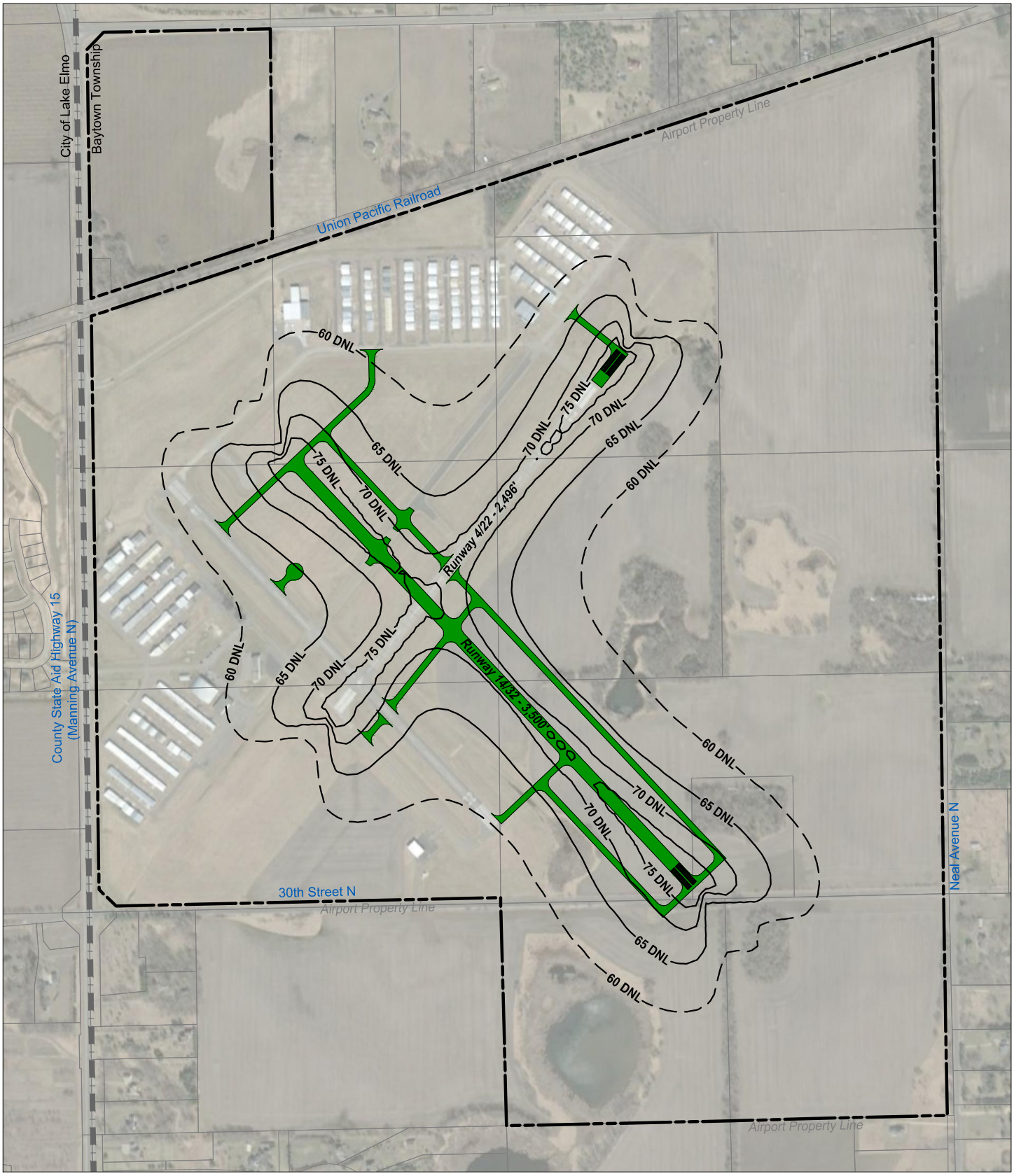
Note: Aircraft noise contour 60 DNL is shown for informational purposes only.

0 400' 800' 1600'

GRAPHIC SCALE IN FEET

Lake Elmo Airport
Runway 14-32

FIGURE 5-2
2025 No Action Alternative Aircraft Noise Contours



Note: Aircraft noise contour 60 DNL is shown for informational purposes only.

0 400' 800' 1600'

GRAPHIC SCALE IN FEET

Lake Elmo Airport
Runway 14-32

J-17

FIGURE 5-3
2025 Alternative B1 Aircraft Noise Contours

Appendix K – Agency Scoping Documentation & Correspondence

Content	Page
Agency Scoping Meeting Documentation February 21, 2017	K-1 thru K-17
U.S. Environmental Protection Agency Letter February 27, 2017	K-18 thru K-22

LAKE ELMO AIRPORT FEDERAL EA / STATE EAW

Agency Scoping Meeting Meeting Minutes

Lake Elmo Public Library
February 21, 2017
10:00 A.M.

Attendees	Representing
John Hanson	Valley Branch Watershed District (Barr Engineering)
Jay Riggs	Washington Conservation District
Becky Horton	Minnesota Department of Natural Resources
Jen Sorensen	Minnesota Department of Natural Resources
Chad Leqve	Metropolitan Airports Commission
Evan Barrett	Mead & Hunt
Laura Morland	Mead & Hunt
Colleen Bosold	Mead & Hunt

(Sign in sheet attached along with presentation and meeting materials distributed)
The attached report represents this writer's interpretation of items discussed during the meeting. Any corrections or additional information should be brought to our attention for clarification.

The purpose of the meeting was to:

- Provide background information on the proposed action and planned environmental analysis to be undertaken at the Lake Elmo Airport.
- Seek input from regulatory agencies to incorporate into the project Scope of Work.

Items discussed were as follows:

After introduction of participants, Chad Leqve provided an overview of Lake Elmo Airport and the proposed action; Evan Barrett discussed the purpose and need, alternatives, planned environmental analysis, and project schedule; and Chad Leqve concluded with a general discussion and Q&A.

Jay Riggs asked if airport operations were expected to increase as a result of the proposed airport improvements. Chad Leqve responded that they were not.

Jay Riggs asked about the difference between a precision and non-precision approach. Chad Leqve explained that precision approaches can be used in a wider variety of weather conditions.

Regarding the wetland delineation, John Hanson commented that a function and value assessment will also be required. The Minnesota Rapid Assessment Methodology (MnRAM) computer model developed by the State Board of Water and Soil Resources (BWSR) was mentioned as an acceptable method. The

Watershed District noted these assessments are often done to establish buffer standards. For State-designated public waters, John Hanson said the minimum buffer is 25 feet, and greater if involving regulated fill. He said that Barr Engineering has recently completed updates to the floodplain and buffer assessments on and near the Airport, which are available on their website. He believed the last one was done approximately 10 years ago, and would need to be updated. He also mentioned there are some project areas on the PowerPoint slides that the Watershed District has not previously assessed that may need to be assessed.

John Hanson asked if we were in contact with the Minnesota Pollution Control Agency (MPCA) regarding known underground tricholoroethylene (TCE) contamination on the Airport. Evan Barrett responded that the MPCA and U.S. Environmental Protection Agency (EPA) were asked for scoping comments and that the environmental review will identify and acknowledge the contamination as part of the hazardous materials review.

John Hanson offered to send Evan Barrett the Watershed District's Rules and Regulations, which are available on the Watershed District's website. Evan Barrett said Mead & Hunt will amend the Scope of Work to account for these rules and regulations.

Jay Riggs asked about wildlife impacts (specifically birds) and how they would be assessed/addressed within the project. He stated there are a lot of bird species flying through the area with the St. Croix River close by. He also said he wouldn't be surprised if we hear a lot of questions or concerns from the public on this topic. Evan Barrett responded that the project team will assess the wildlife impacts as part of the environmental review process.

Jen Sorensen asked what kind of traffic is on 30th Street North. Evan Barrett said existing and future traffic would be analyzed as part of the environmental review. Chad Leqve said it is a low volume road used mostly by local residents.

John Hanson asked if the MAC would consider taking over ownership of 30th Street. Chad Leqve replied that it would not.

John Hanson asked if there are inundation period standards for airports. Discussion ensued about FAA requirements for stormwater infiltration and drainage, which typically require drainage within 48 hours of a storm event.

Jay Riggs asked if the airport service road has different requirements with relation to the runway protection zones (RPZs), as this road goes through the proposed RPZ but does not seem to be an issue. MAC and Mead & Hunt responded that the RPZ guidance refers to public roads as incompatible uses and because the service road has limited access the requirements are less stringent.

Jen Sorensen asked how the State EAW process fits in with the Federal EA. Evan Barrett responded that EA narrative will cross reference each EAW section, and a table will be developed for the EA that refers to each EAW section to ease agency review.

John Hanson asked whether 30th Street North could be kept as far to the northeast as possible to avoid or maximize the distance from the wetland. Discussion ensued regarding potential modifications to the road alignment and potential wetland/floodplain impacts.

Becky Horton asked why 30th Street North could not be relocated to the south to adjoin to Neal Avenue at a 90 degree angle south of the existing intersection. Chad Leqve responded that this was one of the

original alternatives that was evaluated but there was a lot of public concern regarding moving the intersection during the LTCP process.

The timing of the project was discussed. The earliest construction start would be in 2019.

The meeting adjourned at approximately 10:45 a.m.

Lake Elmo Airport
Federal EA/State EAW
Agency Scoping Meeting
February 21, 2017, 10:00 A.M.

Participant Sign-In Sheet

Name	Organization/Address	Phone or email	
John Hanson	4300 Marketpointe Dr Mpls MN 55435	952-832-2622 jhanson@barr.com	Barr
Jay Riggs	455 Hayward Ave Oakdale, MN 55128	jriggs@mnwcd.org	watershed district
Becky Horton	1200 Warner Rd St Paul	becky.horton@state.mn.us	DNR
Evan Barrett	Mead & Hunt, 7900 W 78th St Suite 370 Minneapolis MN 55439	evan.barrett@meadhunt.com	
Jen Sorensen	1200 Warner Rd, St. Paul 651-259-5754	jenifer.sorensen@state.mn.us	DNR
Colleen Bosold	Mead & Hunt 7900 West 78th St. Mpls, MN 55439	colleen.bosold@meadhunt.com	
Laura Morland	MEAD & HUNT	Laura.Morland@meadhunt.com	

Thank you for your participation!

LAKE ELMO AIRPORT EA/EAW - AGENCY SCOPING INVITEES

Agency	c/o	Subdivision (if applicable)	Address	City	Zip Code	Email Address
Minnesota Department of Agriculture	Becky Balk		625 N. Robert Street	St. Paul, MN	55155	becky.balk@state.mn.us
Minnesota Department of Commerce	Ray Kirsch		85 Seventh Place East, Suite 500	St. Paul, MN	55101	raymond.kirsch@state.mn.us
Minnesota Department of Health	Michele Ross	Environmental Health Division	625 N. Robert Street	St. Paul, MN	55155	health.review@state.mn.us
Minnesota Department of Natural Resources	Randall Doneen	Environmental Review Unit	500 Lafayette Road	St. Paul, MN	55155	randall.doneen@state.mn.us
Minnesota Pollution Control Agency	Dan Card	Environmental Review Unit - 4th Floor	520 Lafayette Road North	St. Paul, MN	55155	dan.card@state.mc.us
Minnesota Department of Transportation	Debra Moynihan	MnDOT Office of Environmental Stewardship	395 John Ireland Blvd, MS 620	St. Paul, MN	55155	debra.moynihan@state.mt.us
Minnesota Board of Water and Soil Resources	Travis Germundson		520 Lafayette Road	St. Paul, MN	55155	travis.germundson@state.mn.us
U.S. Army Corps of Engineers	Chad Konickson	Regulatory Branch	180 Fifth Street East, Suite 700	St. Paul, MN	55101	chad.konickson@usace.army.mil
U.S. Environmental Protection Agency	Kenneth Westlake	Office of Enforcement and Compliance Assurance	77 W. Jackson Blvd (mail code: E-19J)	Chicago, IL	60604	westlake.kenneth@epa.gov
U.S. Fish and Wildlife Service	Project Leader	Twin Cities Field Office E.S.	4101 American Blvd East	Bloomington, MN	55425	twincities@fws.gov
Metropolitan Council	Review Coordinator	Local Planning Assistance	390 Robert Street North	St. Paul, MN	55101	reviewscoordinator@metc.state.mn.us
Valley Branch Watershed District	John Hanson	Barr Engineering	4300 MarketPointe Drive, Suite 200	Bloomington, MN	55435	jhanson@barr.com
Washington Conservation District	Jay Riggs		455 Hayward Ave North	Oakdale, MN	55128	jriggs@mnwcd.org
Federal Aviation Administration	Josh Fitzpatrick	Dakota-Minnesota Airports District Office	6020 28th Avenue South, Room 102	Minneapolis, MN	55450	joshua.fitzpatrick@faa.gov
MN Indian Affairs Council	Dennis Olson		161 St. Anthony Ave, Ste 919	St. Paul, MN	55103	Dennis.W.Olson@state.mn.us

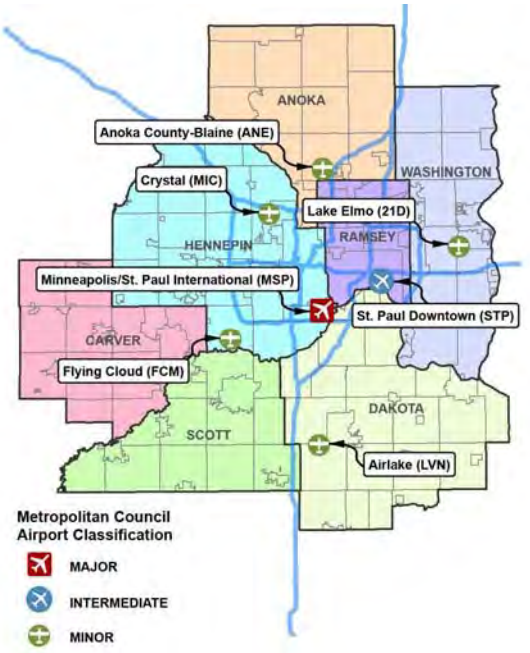
Lake Elmo Airport
Federal Environmental Assessment (EA)/ State Environmental Assessment (EAW) Worksheet

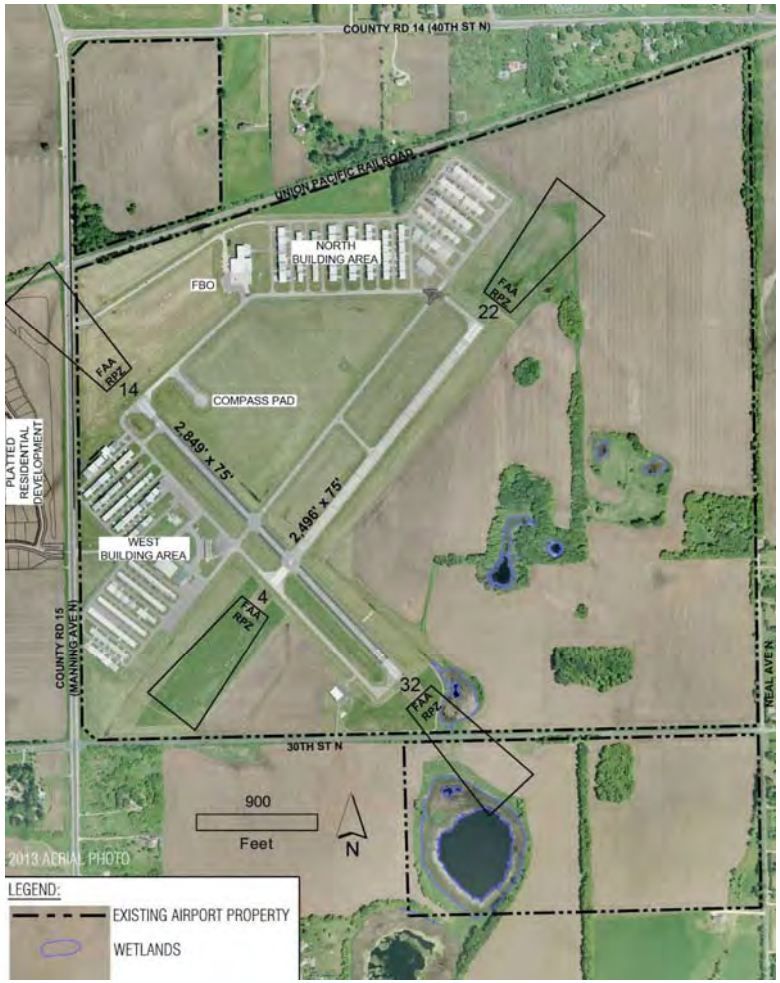
February 21, 2017 – Agency Scoping Meeting
EA/EAW Scope Review

Agenda

- Introductions
- Airport Overview
- Proposed Action
- Purpose & Need
- Alternatives
- Planned environmental analysis
- Project schedule
- Discussion

Airport Overview





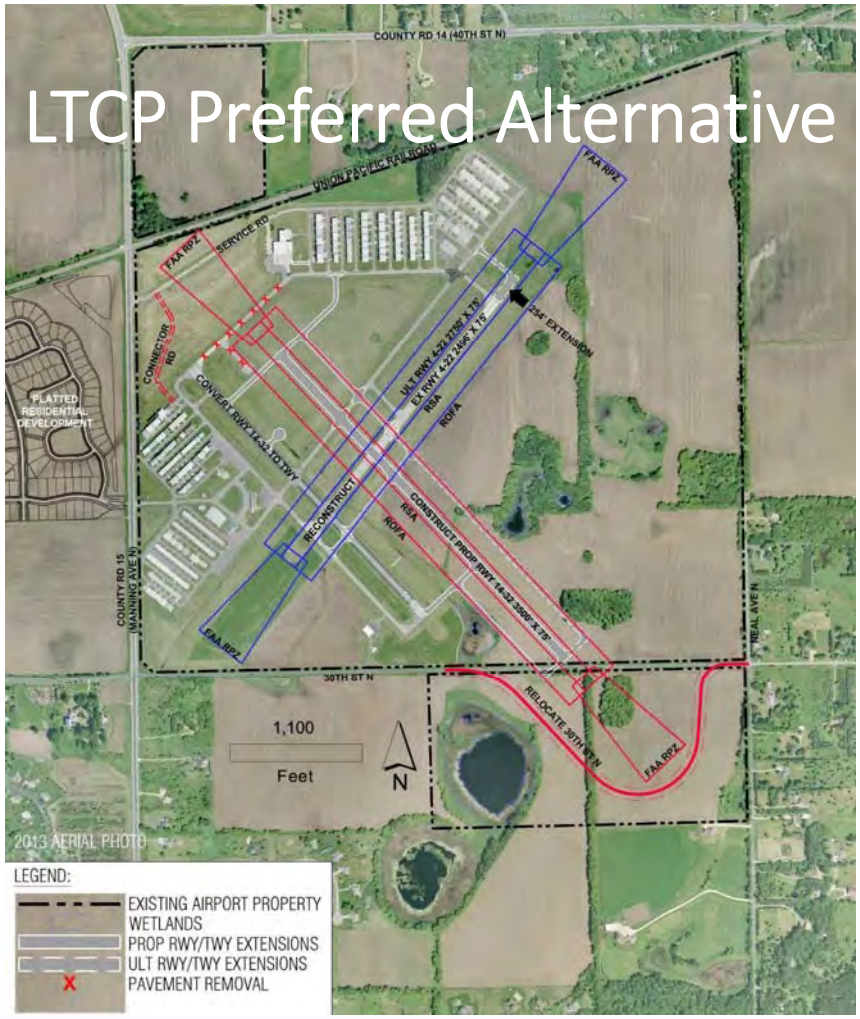
Airport Overview

Primary Role of Lake Elmo Airport

- Integral part of the regional Reliever Airport system
- Accommodates Personal, Recreational, and some Business Aviation users
- Design Aircraft is and will continue to be small, propeller driven aircraft with < 10 passenger seats
- Role not expected to change in forecast period
- Only public airport in Washington County

Existing Facility & Activity Level Overview

- ~200 Based Aircraft
- ~26,000 Aircraft Operations
- Airport Context



Proposed Action

- Relocate and extend Runway 14/32
- Realign 30th Street North around the new Runway 32 RPZ
- Reconstruct and extend Runway 4/22
- Construct a new cross-field taxiway to serve the new Runway 14 end
- Convert existing Runway 14/32 to a partial parallel taxiway and construct other taxiways as needed to support the relocated runway
- Establish a new non-precision approach to Runway 14 and upgrade existing Runway 4 approach to RNAV (GPS)

EA/EAW Supplemental Planning Analysis

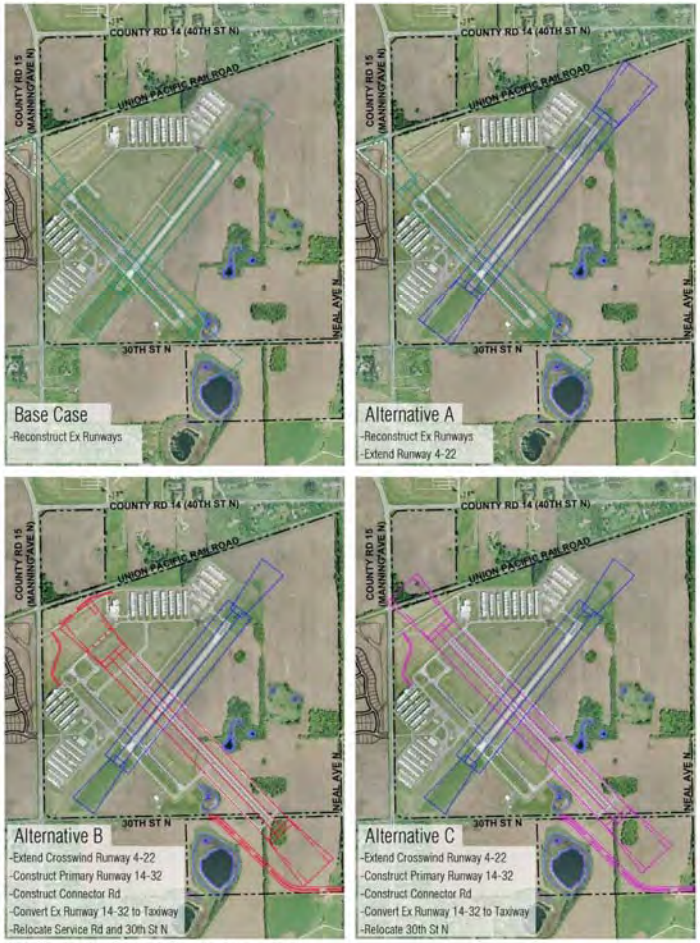
- Review & Verify LTCP Aircraft Operations Forecasts
- Review & Verify LTCP Runway Length Analysis
- Review & Verify Preferred Alternative

Purpose and Need

- Purpose and Need Components:
  - Provide the required runway length justification for design aircraft needs.
  - Prevent existing incompatible uses in the Runway 14/32 runway protection zones (RPZs).
  - Replace failing runway and taxiway pavement.
  - Provide adequate runway to taxiway separation.
  - Resolve hangar penetrations to Runway 14/32 transitional surface.
  - Provide adequate and modernized instrument approach capability for users.

"...comments submitted to the Sponsor during the LTCP process regarding the proposed project will be reviewed and integrated into the alternatives analysis as appropriate to resolve community concerns while providing facilities needed to comply with the project objectives."

Figure ES-4: Original LTCP Development Alternatives Considered



Note: See the alternatives analysis section for more detail.

Alternatives

- No-Action Alternative
- Airport Relocation
- Use of other Airports in the Vicinity
- LTCP Alternatives
- LTCP Preferred Alternative
- Preferred Alternative Refinement Recommendations from Supplemental Analysis

Planned Environmental Analysis

- Air quality modeling
- Historic, architectural, archeological, and cultural resources
- Aircraft noise and land use compatibility
- Hazardous materials inventory
- Wetland delineation
- Other NEPA categories

Figure ES-7: 2035 Final Preferred Alternative RPZs, State Safety Zones, and Noise Contours

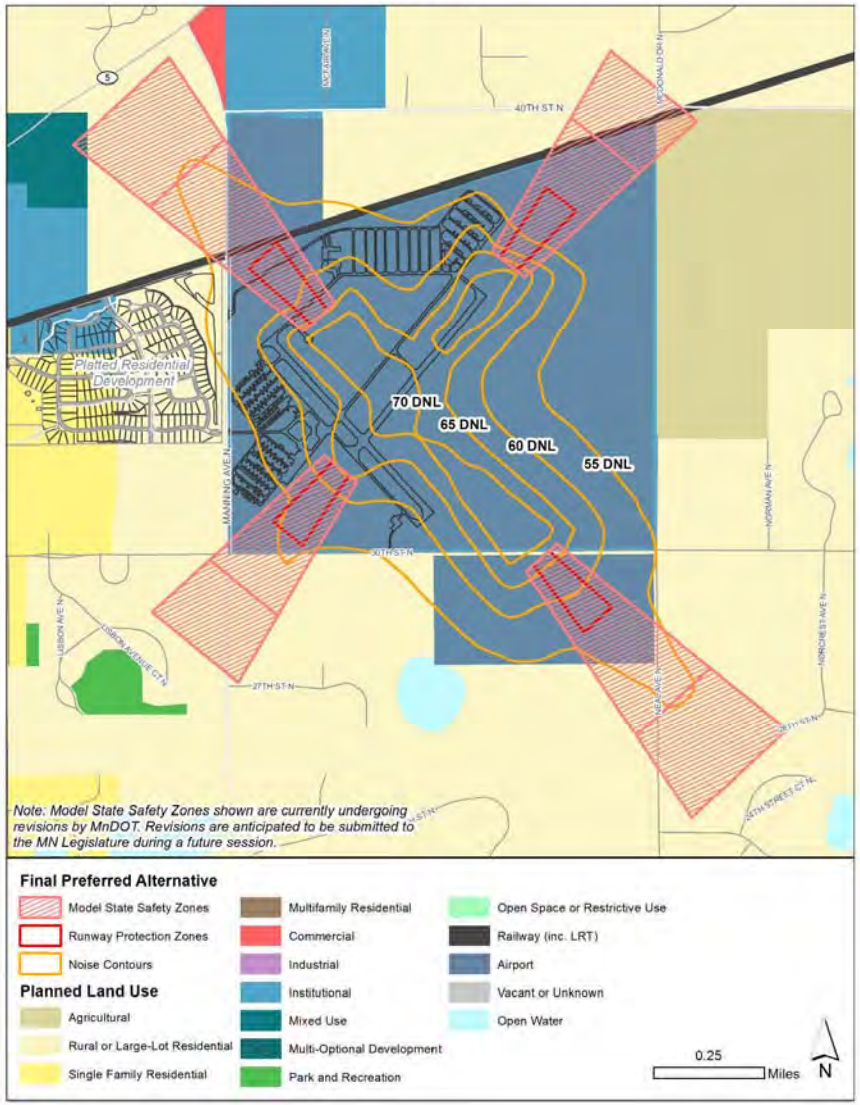
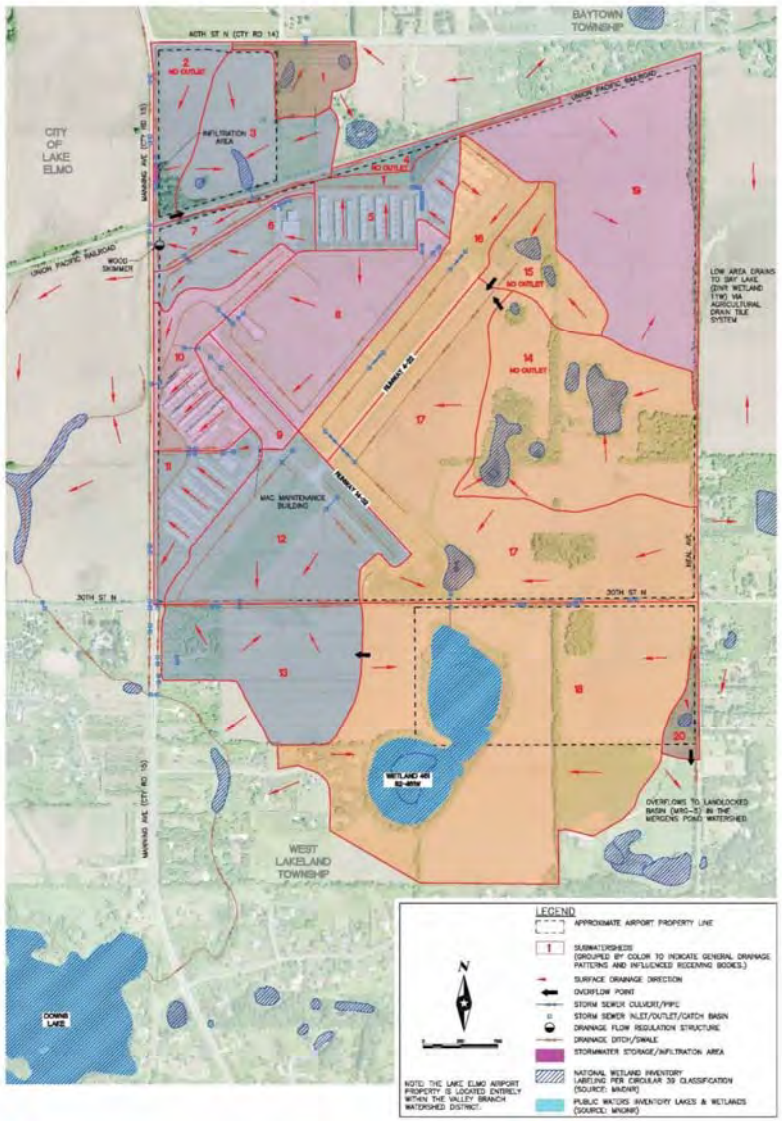
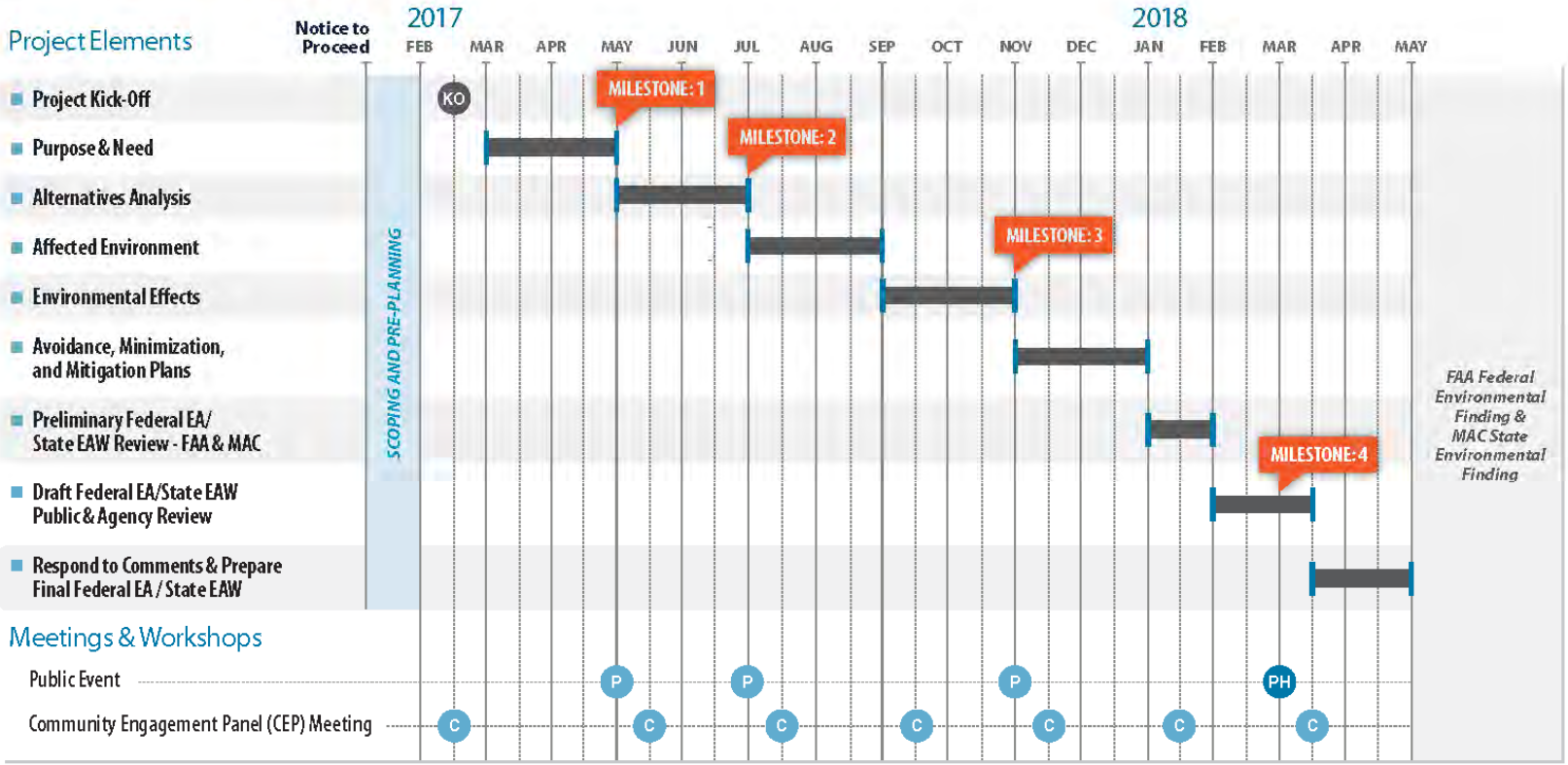


Figure 2-10: Airport Drainage and Wetlands



EA Project Timeline



Time Frame
Kickoff Meeting
Public Event
Community Engagement Panel (CEP) Meeting
Public Hearing

MAC

Environmental Assessment
Lake Elmo Airport

Discussion/Questions

- Please send written comments to:
  - Mead & Hunt, Inc., Attn: Evan Barrett, 7900 W 78th Street, Suite 370, Minneapolis, MN 55439
  - Evan.barrett@meadhunt.com
- If you have questions regarding the project, please contact Chad Leqve at 612.725.6326, or chad.leqve@mspmac.org

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 2 7 2017

REPLY TO THE ATTENTION OF:
E-19J

Josh Fitzpatrick
Federal Aviation Administration
Minneapolis Airport District Office
6020 28th Avenue South, Room 102
Minneapolis, Minnesota 55450

Re: Project Scoping for Airport Improvements at Lake Elmo Airport, Lake Elmo, Washington County, Minnesota

Dear Mr. Fitzpatrick:

The U.S. Environmental Protection Agency (EPA) has reviewed the referenced project scoping document, which was emailed to me by Chad Leqve of the Metropolitan Airports Commission (MAC) on February 8, 2017. The scoping document was prepared by Mead & Hunt, Inc., consultant to the Federal Aviation Administration (FAA) and the MAC. We are providing comments pursuant to our authorities under the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The proposed action involves:

- Relocating Runway 14/32 by shifting it 615 feet to the northeast and extending it to 3,500 feet, including all necessary grading, clearing, and runway lighting;
- Realigning 30th Street North around the new Runway 14/32 Runway Protection Zone (RPZ), and reconnecting to the existing intersection with Neal Avenue;
- Constructing a new cross-field taxiway to serve the new Runway 14/32 end, including taxiway lighting and/or reflectors;
- Converting existing Runway 14/32 to a partial parallel taxiway and constructing other taxiways as needed to support the relocated runway, including taxiway lighting and/or reflectors;
- Reconstructing Runway 4/22 and extend to 2,750 feet, including necessary lighting and taxiway connectors, and

- Establishing a new non-precision approach to Runway 14 end and upgrade existing Runway 4/22 approach to area navigation (RNAV)

Based on our review, we have comments relating to water quality, wetlands, air quality strategies, green infrastructure, climate change, energy efficiency, recycling and reuse of construction materials, creating a federal strategy to promote the health of honey bees and other pollinators, and consultation records, as stated below.

Water Quality

The EA should describe how the proposed action may affect water bodies listed as impaired under Section 303(d) of the Clean Water Act[1] and their listing status as impaired. We recommend that this section of the document discuss current impairments, and how the proposed action may affect, either positively or detrimentally, the impairment.

Wetlands

The EA should explain how the Clean Water Act Section 404(b)(1) guidelines have been applied with regard to both stream and wetland impacts. The Section 404 (b)(1) guidelines call for the Least Environmentally Damaging Practicable Alternative to be selected to address impacts to wetlands, streams, and other waters of the United States. The guidelines also require the sequence of first avoiding, then minimizing, and finally mitigating for any unavoidable impacts to aquatic resources. Please also provide discussion of proposed mitigation for unavoidable, minimized, aquatic impacts (if applicable).

Air Quality Strategies

We recommend FAA analyze best available control strategies, and utilize emission reduction activities to the maximum extent possible. The enclosed document, *U.S. Environmental Protection Agency Diesel Emission Reduction Checklist,* provides a list of common best management practices and mitigation measures that we recommend be used during construction.

Green Infrastructure

One-hundred-year storm events are occurring with increasing frequency. The number of storm events occurring with greater intensity is also increasing. We recommend that FAA and the local sponsor account for increased storm frequency and intensity in the design of this project in order to help ensure the health and safety of the public, by constructing appropriate green infrastructure (GI). GI includes elements of the natural environment – green space, lakes, wetlands, riparian corridors, prairies, and trees – as well as elements of the constructed environment – green roofs, bioswales, rain gardens, community gardens, permeable pavements, and medians along main streets of cities.

[1] For a list of Minnesota 303(d) listed waterbodies, see: https://ofmpub.epa.gov/waters10/attains_state.control?p_state=MN

GI contributes to environmental quality, healthy communities, reduced long-term maintenance costs, and economic value within communities by:

- reducing the amount of polluted stormwater runoff entering rivers and lakes,
- decreasing flood risk by slowing and reducing stormwater runoff into waterways,
- positively impacting air quality through carbon sequestration and reducing fugitive dust and air pollutants,
- reducing traffic speeds through design elements and providing a buffer between pedestrians and the roadway,
- providing linkages between habitat corridors to support plant and animal communities, including rare species,
- encouraging outdoor physical activity and increasing walkability, leading to a healthier population and decreased crime, and
- saving money for residential, commercial, industrial, and municipal entities by using natural systems rather than expanding traditional, built systems and by reducing energy consumption.

EPA recently released a video entitled, *Green Streets: The Road to Clean Water*. This video highlights green streets techniques for managing stormwater and providing other economic and community benefits. It includes examples from localities that have worked with EPA and other partners to incorporate green streets into their stormwater management plans. Green features shown include porous pavement, rain gardens, vegetative curb areas and sidewalk trees.
For more examples of GI and information regarding economic and structural performance, visit EPA's GI webpage at https://www.epa.gov/green-infrastructure/what-green-infrastructure or *The Economic Benefits of Green Infrastructure: A Case Study of Lancaster, PA* (2014). For case studies, including several from the Midwest, and funding sources, visit: http://www3.epa.gov/region5/sustainable/stormwater-greenstreets.html.

Green infrastructure can be a cost-effective approach to improve water quality and help communities stretch their infrastructure investments further by providing multiple environmental, economic, and community benefits. For additional information to learn how other communities have realized cost savings through their green infrastructure programs as well as about tools you can use to inform your own cost-benefit analysis, visit: https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources.
EPA recognizes that vegetation management at and near airports must be consistent with FAA standards to minimize the risk of attracting wildlife that could pose a safety threat to aircraft. Include a discussion on adaptation and, as appropriate, consider practicable changes to the alternatives to make them more resilient to anticipated future conditions.

Energy Efficiency
We encourage the use of energy-efficient runway and taxiway lighting, use of sustainable building materials, and installation of renewable energy sources. Section 438 of the Energy Independence and Security Act provides excellent examples of how to integrate energy efficiency into Federal projects.

Recycling and Reuse of Construction Materials

We recommend pavement (asphalt, concrete, or cement) and structural materials be reclaimed for future use for this project, or elsewhere. A discussion on the benefits of reclaiming pavement can be found at the following Federal Highway Administration website: http://www.fhwa.dot.gov/pavement/recycling/rap/index.cfm.

Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators

The 2014 Presidential Memorandum (PM) entitled, "Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators[2]," responds to evidence of steep declines in certain pollinator populations. Pollinators are critical contributors to our nation's economy, food system, and environmental health. Vegetation within the project area can provide much needed habitat for pollinators, providing food, shelter, and connections to other patches of habitat. Maintenance staff and landscape designers can all take steps to improve the quality of vegetation to benefit pollinators, steps that can also reduce costs, maintain public safety, and improve public good will.

Consultation Records

EPA recommends attaching consultation documents regarding historic resources (Minnesota State Historic Preservation Agency), wetlands (U.S. Army Corps of Engineers), and Federal and state threatened and endangered species (U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources) with the draft EA. Please include, in the draft environmental assessment (EA), a list of agency contacts.

We are available to discuss these comments at your convenience. Please feel free to contact Mike Sedlacek of my staff at 312-886-1765, or by email at sedlacek.michael@epa.gov.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

Enclosure: U.S. Environmental Protection Agency Diesel Emission Reduction Checklist

cc: Evan Barrett, Mead & Hunt, Inc.
Chad Leqve, Metropolitan Airports Commission

[2] www.whitehouse.gov/briefing-room/presidentialactions/presidential-memoranda

U.S. Environmental Protection Agency
Diesel Emission Reduction Checklist

- Use low-sulfur diesel fuel (15 ppm sulfur maximum) in construction vehicles and equipment.
- Retrofit engines with an exhaust filtration device to capture diesel particulate matter before it enters the construction site.
- Position the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, reducing the fume concentration to which personnel are exposed.
- Use catalytic converters to reduce carbon monoxide, aldehydes, and hydrocarbons in diesel fumes. These devices must be used with low sulfur fuels.
- Use enclosed, climate-controlled cabs pressurized and equipped with high efficiency particulate air (HEPA) filters to reduce the operators' exposure to diesel fumes. Pressurization ensures that air moves from inside to outside. HEPA filters ensure that any incoming air is filtered first.
- Regularly maintain diesel engines, which is essential to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures. Smoke color can signal the need for maintenance. For example, blue/black smoke indicates that an engine requires servicing or tuning.
- Reduce exposure through work practices and training, such as turning off engines when vehicles are stopped for more than a few minutes, training diesel-equipment operators to perform routine inspection, and maintaining filtration devices.
- Repower older vehicles and/or equipment with diesel- or alternatively-fueled engines certified to meet newer, more stringent emissions standards. Purchase new vehicles that are equipped with the most advanced emission control systems available.
- Use electric starting aids such as block heaters with older vehicles to warm the engine reduces diesel emissions.
- Use respirators, which are only an interim measure to control exposure to diesel emissions. In most cases, an N95 respirator is adequate. Workers must be trained and fit-tested before they wear respirators. Depending on work being conducted, and if oil is present, concentrations of particulates present will determine the efficiency and type of mask and respirator. Personnel familiar with the selection, care, and use of respirators must perform the fit testing. Respirators must bear a NIOSH approval number.
- Per Executive Order 13045 on Children's Health,[3] EPA recommends operators and workers pay particular attention to worksite proximity to places where children live, learn, and play, such as homes, schools, daycare centers, and playgrounds. Diesel emission reduction measures should be strictly implemented near these locations in order to be protective of children's health.

[3] Children may be more highly exposed to contaminants because they generally eat more food, drink more water, and have higher inhalation rates relative to their size. Also, children's normal activities, such as putting their hands in their mouths or playing on the ground, can result in higher exposures to contaminants as compared with adults. Children may be more vulnerable to the toxic effects of contaminants because their bodies and systems are not fully developed and their growing organs are more easily harmed. EPA views childhood as a sequence of life stages, from conception through fetal development, infancy, and adolescence.