City of Bel Aire, Kansas

STAFF REPORT

DATE: September 20, 2022

TO: City Manager

FROM: Anne Stephens, PE

RE: Cedar Pass Wetland Mitigation

BACKGROUND:
The Cedar Pass subdivision has approximately 0.32 acres of wetlands as identified by a wetland delineation study by GSI Engineering. Per federal requirements, Cedar Pass must either not disturb the delineated wetland, construct a new wetland to offset the removal of the existing wetland, or purchase a wetland mitigation offset at an off-site property.

DISCUSSION:
During the preliminary design phase of the development of the Cedar Pass subdivision, a wetland delineation study was performed by GSI Engineering to determine if any existing wetlands exist on site, and if so, how much. Per United States Army Corps of Engineers guidelines, existing wetlands must be mitigated either on-site or off, when impacted by a construction project. The Developer, in coordination with Garver has determined that they wish to pursue an off-site wetland mitigation with the Sunflower Land Trust. The United States Army Corps of Engineers is acceptable to this request. This is a one-time fee for purchase and there will be no annual maintenance costs associated with this mitigation purchase.

The Sunflower Land Trust was recommended to the Developer by the United States Corps of Engineers as a provider they are comfortable working with.

FINANCIAL CONSIDERATIONS: The cost of the offset is $23,000 and will be paid for out of the project budget and will be included in the special assessments for this project. The price for the offset is fixed based on the acreage being secured. The Sunflower Land Trust did indicate that they would hold this price for us until such time as the funds need to be deposited.

POLICY DECISION: In discussions with the Project Engineer, purchasing the wetland mitigation credit will be less hassle in the near-term and long-term with creating and maintaining a wetland area on-site.

RECOMENDATION: It is Staff's recommendation that the Council approve the purchase of the wetland mitigation offset from the Sunflower Land Trust.

1995 Midfield Road
Wichita, KS 67209

TEL 316.264.8008

www.GarverUSA.com

September 20, 2022

Anne Stephens, PE
City Engineer – City of Bel Aire, Kansas
astephens@belaireks.gov

Re: Cedar Pass Addition Stormwater Drain Project, City of Bel Aire, Kansas (Anne Stephens, P.E. City Engineer)
US Army Corps of Engineers JD (NWK-2022-00436) Sarah Reznicek, Regulatory Project Manager
Northeast Developers, LLC, Eugene Vitarelli, Managing Member (subdivision owner)

Dear Ms. Stephens,

During the permitting process for the Stormwater Drain Project, the US Army Corps of Engineers determined the existence of jurisdictional wetlands in Reserve C, Cedar Pass Addition. Upon a more formal review including a wetland determination performed by GSI Engineering, an area of 0.32 acres of wetland was found on site.

As you know, the US Army Corps of Engineers has jurisdiction over waters of the United States, particularly in areas identified as wetlands. Construction of the new stormwater detention facility will remove this wetland, and to offset this loss, the Corps accepts the formal purchase of a wetland offset as mitigation. The Sunflower Land Trust provides this service with a wetland pool area they have created at their facility, and they are Corps of Engineers approved provider for this service.

The Corps has requested a direct 1:1 ratio of wetland offset to be provided due the development of the Stormwater project for a total of 0.32 acres. The Sunflower Land Trust will provide this mitigation for a fee of $23,000.00. Since the project is a City of Bel Aire Stormwater project, costs for this mitigation can be included in the petitioned project for the Stormwater Drain. This offset takes the place of designing, constructing and perpetually maintaining a new wetland area on the site which is impractical given the residential and commercial character of the site.

Please present the request of allocating $23,000 from the Stormwater Drain Project for Cedar Creek Addition for the 0.32-acre wetland mitigation offset to the City of Bel Aire City Council. We will coordinate with Bel Aire to time the actual transfer of funds in coordination with the Corps permitting process.

Do not hesitate to contact me should you require any additional information.

Best regards,

GARVER

Christopher Bohm, Senior Project Manager

From: Jim Michael
To: Anne Stephens
Subject: Re: Cedar Pass Addition - Sunflower Land Trust
Date: Thursday, September 22, 2022 5:16:22 PM
Attachments: image005.png
image006.png
image007.png
image008.png
image009.png
image010.png
image011.png
image012.png
image013.png

Thank you for contracting the Sunflower Land Trust for your wetland mitigation needs at the Cedar Pass Storm Drain project. It is our understanding that the Corps of Engineers is requiring the City of Bel Aire to purchase 0.32-acre of wetlands to offset damages prior to their submission of the project for a Nationwide Permit. Usually the SLT gets a mitigation request once the Permit has been granted. The bid price for the 0.32 wetland acreage is $23,000.00. The bid price is effective through November 15, 2022.

Should you need anything more, feel free to call me at 316-734-7545. Like most of us, I spend more time in the field than in the office.

Thank you for your request.

Jim E. Michael, CEO
Sunflower Land Trust, Inc.

On Wed, Sep 21, 2022 at 4:00 PM Anne Stephens <AStephens@belaireks.gov> wrote:

> Thanks Chris!
>
> Jim – Would you be able to provide me with a confirmation on the mitigation cost for the Cedar Pass project? I would greatly appreciate it if I could have something by the end of the week so I can get this in front of our Council for their consideration.
>
> City of Bel Aire
> LIFE'S better ON THE EDGE!
>
> **Anne Stephens, PE**
> *City Engineer*
> 7651 E. Central Park Ave.
> Bel Aire, KS 67226
> P: (316) 744-2451 ext: 133
>
> ---
>
> **From:** Bohm, Christopher M. <CMBohm@GarverUSA.com>

Sent: Wednesday, September 21, 2022 3:59 PM
To: Anne Stephens <AStephens@belaireks.gov>; Jim Michael <slt.ks.usa@gmail.com>
Subject: Cedar Pass Addition - Sunflower Land Trust

Good afternoon Anne,

Please see the attached, revised, letter to the Sunflower Land Trust that you can include in the Council Packet. Jim Michael with the Trust would like to email him directly for the confirmation of the mitigation cost, which he will provide to you and the Council. Thanks for your continued assistance with this process and let me know if you have any questions.

All the best - Chris

Christopher Bohm
Senior Project Manager
Transportation Team

316-264-8008
316-258-3237

GSI Engineering

888.767.8854
www.gsinetwork.com

Preliminary Wetland Identification and Delineation

Cedar Pass Addition
North Webb Road and East 53rd Street North
NE¼, Section 17, Township 26S, Range 02E
Bel Aire, Kansas

GSI Project No. 22W2004.01
August 2022

Prepared for:
Garver, LLC
1995 Midfield Rd.
Wichita, Kansas 67209

Prepared by:
GSI Engineering, LLC
4503 E. 47th St. South
Wichita, Kansas 67210

Ray Montez
Staff Scientist

Sean Corns
Senior Staff Scientist

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APPENDICES

EXECTUTIVE SUMMARY

At the request of Garver, LLC (Garver), GSI Engineering, LLC (GSI) conducted a preliminary jurisdictional wetland determination for potential jurisdictional wetlands on subject property of interest to Garver.

The subject property is in Bel Aire, Sedgwick County, Kansas at North Webb Road and East 53rd Street North, approximately 8.0 miles northeast of downtown Wichita, situated within the NE quarter of Section 17, Township 26 South, Range 02 East (Lat/Long: 37.781775, -97.231897). The 80-acre Site is undeveloped, consisting of agricultural cropland and open pasture that feature potential Waters of the United States (WOTUS), including jurisdictional wetland.

GSI reviewed relevant aerial imagery, USGS Topographical Maps, National Wetland Inventory Maps, NRCS Soil Maps, and conducted an on-site assessment to identify potential WOTUS on the subject property. WOTUS include streams, ponds, lakes, wetlands, and other waterbodies that may be protected under Sections 404 and 401 of the Clean Water Act. Under the Navigable Waters Protection Rule (NWPR), WOTUS include traditional navigable waters, intermittent and perennial tributaries, lakes, ponds, and impoundments of jurisdictional waters, and adjacent wetlands. Ephemeral features and isolated wetlands are not considered jurisdictional WOTUS.

GSI identified potential WOTUS that includes approximately 2.90-acres of pond, approximately 1,335-feet of surface drainage identified as USGS blue line stream, approximately 581-feet of agricultural drainage, and approximately 0.32-acres of wetland within the Site boundaries. The pond is connected to the USGS blue line stream. The blue line stream is an unnamed tributary of Whitewater Creek, meeting the current Clean Water Act definition of WOTUS. The identified wetland areas are connected to the unnamed tributary, therefore, meeting the definition of jurisdictional wetlands. The channelized agricultural drainage feature may be classified as WOTUS since it is connected to the identified pond.

The U.S. Army Corps of Engineers reserves the right to determine the jurisdictional status of these water bodies on a case-by-case basis. GSI recommends that the USACE be contacted prior to the initiation of any work that could impact identified aquatic resources within the area of delineation.

1.0 INTRODUCTION

GSI Engineering LLC (GSI) was retained by Garver, LLC (Garver) to conduct a preliminary jurisdictional wetland determination for potential wetlands on subject property (Site) of interest. This report presents the results of the preliminary jurisdictional wetland determination performed by GSI.

1.1 Project Location and Description

The Site is in Bel Aire, Sedgwick County, Kansas North Webb Road and East 53rd Street North, approximately 8.0 miles northeast of downtown Wichita **(Appendix A – Figure 1)**, situated within the NE quarter of Section 17, Township 26 South, Range 02 East (Lat/Long: 37.781775, -97.231897). The 80-acre Site is undeveloped, consisting of agricultural cropland and open pasture that feature potential Waters of the United States (WOTUS), including jurisdictional wetland.

1.2 Scope of Work

GSI understands that this assessment is for due diligence prior to development of the Site. GSI has conducted this preliminary jurisdictional wetland determination by reviewing relevant aerial imagery, USGS Topographical Maps, National Wetland Inventory Maps, NRCS Soil Maps, and conducting an on-Site assessment to identify potential WOTUS. WOTUS include streams, ponds, lakes, wetlands, and other waterbodies that may be protected under Sections 404 and 401 of the Clean Water Act. Under the Navigable Waters Protection Rule (NWPR), WOTUS include traditional navigable waters, intermittent and perennial tributaries, lakes, ponds, and impoundments of jurisdictional waters, and adjacent wetlands. Ephemeral features and isolated wetlands are not considered jurisdictional WOTUS. The United States Army Corps of Engineers (USACE) (*Federal Register 1982*) and the United States Environmental Protection Agency (EPA) (*Federal Register 1980*) jointly define “wetlands” as: *those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”*. The purpose of the preliminary jurisdictional wetland identification and delineation is to make an initial determination as to whether streams or potential wetlands on the subject property fall under federal jurisdiction pursuant to the Clean Water Act (33 CFR §328.3).

2.0 METHODOLOGY

GSI performed this wetland delineation according to the methods described in the USACE *Wetlands Delineation Manual* (1987) and the *Great Plains Regional Supplement (Version 2.0)* (2010). Wetland conditions are determined by the presence of three criteria: 1) a predominance of hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. Documents are obtained and reviewed relative to these three criteria, then field verified by cataloguing plant types in suspect WOTUS locations, collecting soil samples at multiple locations in representative areas of the project for assessing hydric conditions, and observations for wetland hydrology. Assessment points and interpreted jurisdictional limits as determined in the field are located using a differentially corrected, sub-meter Global Positioning System (GPS).

Jurisdictional streams are determined by visual assessment and characterization of stream channel characteristics, as well as by a study of the geomorphology and hydrology of a project site. Of primary importance is the presence of an ordinary high-water mark and bed and bank features which result from scouring forces from a concentration of flowing water along channel banks. Upon observation of an ordinary high-water mark, physical attributes of the stream are surveyed and measured to determine the extent and frequency of stream flow. Ephemeral channels only carry storm flow for short durations after rain events and are typically void of pools after more than several days following a rain event. Intermittent streams carry storm flow for seasonal durations, are influenced by groundwater flows, and often contain pools that provide habitat to macroinvertebrates adapted to aquatic habitats. Pool formation is supported by groundwater flow between rain events. Perennial streams run continuously and are observed to maintain relatively consistent flows. Perennial streams are often associated with a steady ground water source and are also dependent upon upstream ephemeral and intermittent stream flow. Only perennial and intermittent streams are considered jurisdictional under the 2020 Navigable Waters Protection Rule. The state of Kansas does not regulate isolated wetland and ephemeral streams.

3.0 DOCUMENT REVIEW

3.1 Aerial Photographs

GSI reviewed Google Earth's aerial images (1996 – 2022) to attempt to identify land use, natural aquatic features and areas exhibiting potential inundation at the Site. Aerial imagery from 2022 indicates that the Site is undeveloped. A hedgerow splits the Site into two land uses. The western portion of the Site is agricultural cropland, while the eastern portion of the Site consists of sparsely vegetated pasture that possesses surface water features. (**Appendix A – Figure 2**). Aerial imagery (2022) reveals the presence of one pond, surface drainage features, and areas of potential inundation. Surface drainage features appear to be connected to the pond. The pond appears to be connected to an unnamed tributary of Whitewater Creek. These features appear natural and are present in aerial images dating back to 1996.

We utilized and viewed EPAs geospatial waters data (WATERSKMZ v1.10 (.kmz)) to assist further in WOTUS identification of the Site. The KMZ layer indicating streams shows no streams on the Site.

3.2 USGS Topographic Maps

GSI reviewed the 7.5-minute United States Geological Survey (USGS) Topographical Map (Greenwich quadrangle) for the presence of WOTUS. The map indicates the presence of one stream (unnamed stream/tributary) and one pond on the Site. The stream features are mapped as solid (Perennial stream) and broken blue lines (Intermittent stream). The pond is mapped as blue polygons (Perennial pond). The map indicates that the unnamed tributary connects to Whitewater Creek. The full 7.5-minute USGS Topographical map (Greenwich) is provided in **Appendix B.**

3.3 National Wetlands Inventory Map

The United States Fish and Wildlife Service (USFWS) maintains a National Wetlands Inventory (NWI) for surface waters and wetlands of the United States. The USFWS NWI was reviewed to obtain information pertaining to NWI-mapped wetlands and waterbodies at the Site. The NWI maps are prepared by USFWS using aerial photography but are not field verified. The NWI map indicates one freshwater pond and freshwater emergent wetland at the Site. The freshwater pond and the emergent wetland appear to be hydrologically connected to Whitewater Creek. A copy of the NWI map for the Site is provided in **Appendix C.**

3.4 FEMA FIRM Map

The Federal Emergency Management Agency (FEMA) maintains an official online database to locate flood hazards using mapping services. Mapping products created for the National Flood Insurance Program (FIRM) are used to determine where flood zones exist. According to the FEMA FIRM map, eastern portions of the Site are within Zone A (special flood hazard areas). A copy of the FEMA FIRM map coverage of the Site is included in **Appendix D.**

3.5 NRCS Soil Survey

Soils at the Site were identified using the NRCS Web Soil Survey the Web Soil Survey, prepared by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), was reviewed for information concerning hydric soils in the area. Hydric soils as defined by the National Technical Committee for Hydric Soils are “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions.” According to the Web Soil Survey, the Site is underlain by two non-hydric soil types as summarized in Table 3.1. See **Appendix E** for a soil distribution map.

Table 3.1: NRCS Soil Survey Summary

Map Unit Name (Symbol)	Percent Slope	Drainage Class	Hydric Rating		Description
			YES	NO	
Goessel silty clay (3858)	1 to 3	Moderately well drained		X	Paleoterraces composed of silty clay/clay loam derived from clayey alluvium over loamy alluvium
Rosehill silty clay (3911)	1 to 3	Well drained		X	Hillslopes composed of silty clay derived from residuum weathered from clayey shale

4.0 FIELD CONDITIONS SUMMARY

GSI conducted an on-Site assessment of the subject property on August 5, 2022, to verify and document the potential WOTUS findings presented in Section 3.0. The Site assessment confirms the presence of surface drainage patterns and a pond at the Site. Other than the pond, there were no other areas inundated at the time of the Site visit. Identified drainage patterns are to the west, and to the south of the pond and appear to be hydrologically connected. These surface drainage features may be considered as an ephemeral stream, as they appear to flow only during precipitation events and do not appear connected to the groundwater table. However, GSI notes that this Site is within a designated floodplain and its possible that these drainage channels may have formed from active floodwaters, overflow from the pond to the south, or from backflow from the pond onsite. Based on our observations it appears that an emergent wetland has developed along these drainage corridors that are listed as blue line streams on the USGS map found in **Appendix B**. GSI concluded that these drainage patterns were wetlands based on vegetation, hydric soil, and wetland hydrology. The Site's WOTUS features are mapped in **Appendix A – Figure 4**, summarized below in Table 4.1, and detailed in this section.

Table 4.1: Summary of WOTUS Findings

Map ID	Type of Aquatic Resource	Estimated Amount	Preliminary WOTUS Determination	
			NO	YES
P1	Pond	2.90-ac		X
AD1	Agricultural drainage	581-ft		X
BD1	Braided drainage patters	1,335-ft		X
W1	Wetland	0.32-ac		X

4.1 Ponds

Pond 1

Pond 1 is approximately 2.90-acres in size and appears to have been established by historical damming. The pond shows a hydrologic connection with White Water Creek to the north. Only a portion (2.46-acres) of the pond is within the Site boundary. The depth of the pond was approximately 2 to 3 feet, which appeared significantly low, based on observed high water mark, exposed bare soils along pond edges, and historical aerial imagery. At the time of the Site

assessment cattle were utilizing the pond for heat relief. This pond is identified on USFWS NWI maps.

4.2 Streams

Agricultural Drainage

On site observation found remnants of a meandering channel to the west of the pond. This drainage feature appears to be either a natural ephemeral tributary of Whitewater Creek, or artificial agricultural drainage developed by property owners. This agricultural drainage feature begins at the southwest end of the pond and terminates at the agricultural field, near the hedgerow, approximately 878-ft to the west of the pond. The assumed agricultural drainage is in some areas channelized and well defined; however, site observations noted bare dry soils, upland vegetation, and signs of ephemeral drainage. The drainage channel is approximately 1.0 to 3.0 feet wide and in a few areas approximately 0.75 to 1.0 foot deep, respectively. No flowing water or fauna were observed at the time of the Site visit. A shovel point was attempted but the soil was hard and dry and could not be penetrated, no signs of hydrophytic vegetation were noted along this drainage.

Braided Drainage Patterns

Surface drainage features to the south of the pond were braided-dry channels that had exposed-moist soils, and intermittent bank characteristics. Some drainage patterns branched off the main channel, but terminated with minimal distance, while the main drainage channel bed and bank features were intermittently visible for approximately 1,335-ft to the south and continued off Site via culvert under East 53rd Street. The braided drainage system was observed to be intermittently channelized, well defined in areas and contained evidence (saturated and areas where the concave soil bed of the soil channels features were cracked) of intermittent drainage. The braided channel was 3.0 to 4.0 feet wide near the ponded area and tapered off to 1.5 to 2.0 feet wide with distance from the pond. Evidence of vegetative stress was observed in Osage Orange (*Maclura pomifera*) trees that were within, or adjacent to the braided-dry channel system. This stress appears to be a result of prolonged inundation, as they were leafless and appeared to be dead. The main channel of the braided drainage system may be considered jurisdictional by the USACE based on the observed features, its USGS-mapped status, and its connection to a USFWS NWI classified pond.

4.3 Wetlands

GSI identified and delineated areas having hydrophytic vegetation, hydric soils, and wetland hydrology. These features were recorded on USACE Great Plains Region Wetland Determination forms **(Appendix F).** Soils were evaluated using "2020 pocket guide to Hydric Soil Indicators" and "Munsell Soil Color Book". Site photos can be found in **Appendix G**. Based on these results, GSI is making the preliminary determination that approximately 0.30-acres of emergent wetland are present at this Site. This emergent wetland is likely to be considered jurisdictional, meeting the definition of WOTUS. See below for details on the wetland determination.

Wetland

GSI delineated an area of approximately 0.32-acres that contained hydric plants, hydric soils and hydrology that is consistent with emergent wetland habitat. These linear areas were within the braided drainage channel to the south of the identified pond. Vegetation in these areas were dominated by Sumpweed (*Iva annua*), Fox Sedge (*Carex vulpinoidea*), Curly dock (*Rumex crispus*), and Black Willow (*Salix Nigra*). Soils were indicative of redox below a dark surface (F6) 10YR 4/1 0 to 1 inch, and 10YR 3/1 from 1 to 16 inches with a 40 percent redox color of 5YR8 from 1 to 16 inches below ground surface. Hydrological indicators observed were drainage patterns, surface soil cracks, algal mat or crust, and crayfish burrows. Observation Points (OB) representative of wetland habitat are OB-1 and OB-3 in Figure 4. The remaining OB points with letters in Figure 4 represent non-wetland areas.

5.0 CONCLUSION

GSI has conducted a preliminary jurisdictional wetland determination for the 80-acre Site located at North Webb Road and East 53rd Street North in Bel Aire, Sedgwick County, Kansas. Document review and field verification/observation revealed the presence of one pond, evidence of surface drainage and potential jurisdictional wetlands at the Site. The pond and the hydrologically connected wetland features are likely to be considered jurisdictional by the USACE. In this case, jurisdiction has been determined by the identified drainage status as a USGS blue line stream, and its hydrologic connection to the NWI listed pond. The identified wetland area is within assumed jurisdictional WOTUS and would likely be considered jurisdictional by the USACE due to its connection to Whitewater Creek. Field observations identified agricultural drainage that may be considered as ephemeral or potentially a tributary of Whitewater Creek. The USACE interpretation will make final determination on their jurisdictional status.

6.0 LIMITATIONS

This report has been prepared on behalf of and for the exclusive use of the addressee, solely for use in a wetland delineation of the Site. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of GSI. Unless other contractual agreements were made, the services described in this report were carried out in accordance with the General Conditions for GSI's Services which accompanied the proposal.

The delineation provided herein is based upon our research and observations during site reconnaissance. Our findings have been prepared for the client solely for a wetland delineation of the project site. This report may be used as part of a submittal to the USACE for confirmation of permit status. GSI is not responsible for independent conclusions or recommendations made by others. The United States Army Corps of Engineers (USACE) has final authority deciding whether the proposed activities associated with planned development require permits. Our delineation and recommendations do not supersede any decision made by the USACE.

This delineation was performed in accordance with the generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GSI observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. The findings and conclusions stated herein must be considered not as scientific certainties, but rather as professional opinions concerning the significance of the limited data gathered during the course of the wetland delineation. No other warranties, expressed or implied, are made. Specifically, GSI does not and cannot represent that the site contains no wetlands or other jurisdictional waterbodies beyond that observed by GSI during its site assessment.

The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedure beyond the scope of described services. Furthermore, such conclusions are based solely on, on-site conditions, and rules and regulations, which were in effect, at the time of the study.

In preparing this report, GSI has relied on certain information provided by state and local officials and other parties referenced therein, and on information contained in the files of state and/or local agencies available to GSI at the time of the site assessment. Although there may have been some

degree of overlap in the information provided by these various sources, an attempt to independently verify the accuracy or completeness of all information reviewed or received during this site assessment was not made.

If information is developed relative to wetlands issues at the site and not contained in this report, such information shall be brought to GSI's attention. GSI will evaluate such information and, based on this evaluation, may modify the conclusions stated in this Report.

The purpose of this Report was to present the results of a wetland delineation performed in substantial conformance with the 2010 USACE Great Plains Regional Supplement to the Routine Method presented in the 1987 Federal Wetlands Delineation Manual (Environmental Laboratory, 1987), or other superseding local requirements. No specific attempt was made to check on the compliance of present or past owners or operators of the site with federal, state, or local laws and regulations, environmental or otherwise.

See **Appendix H** for a summary of qualifications from those performing the preliminary wetland determination.

7.0 RECOMMENDATIONS

GSI recommends that this report be submitted to USACE for a jurisdictional determination for applicable permitting, if any, for the Site. The USACE is solely entrusted with making the final determination as to what constitutes a Jurisdictional WOTUS.

8.0 REFERENCES

National Wetland Inventory Map, U.S. Fish and Wildlife Service Online Wetland Mapper, http://www.fws.gov/wetlands

USDA. Natural Resources Conservation Service (NRCS) Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

U.S. Army Corps of Engineers, Engineer Research and Development Center, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2)*, March 2010.

U.S. Army Corps of Engineers, Waterways Experiment Station, *Corps of Engineers Wetlands Delineation Manual, Wetlands Research Program Technical Report Y-87-1* (on - line addition), January 1987

USDA. Natural Resources and Conservation Service Plants Database, <https://plants.usda.gov/java/, (last modified 03/12/2018).

USEPA. The Waterskmz Tool. Water Data and Tools. WATERSKMZ v1.10(kmz): https://www.epa.gov/waterdata/viewing-waters-data-using-google-earth

USGS. National Geospatial Program. US Topo: Maps for America Topo builder Application v:1.0.0 https://topobuilder.nationalmap.gov/

Munsell Color. (2019). *Munsell soil-color charts: With genuine Munsell Color Chips*.

Wetland Training Institute, Inc. 2020 Pocket Guide to Hydric Soil Field Indicators v. 8.2 Robert J Pierce (ed.). Wetland Training Institute, Inc., Stevens Point, Wisconsin. 196 p.

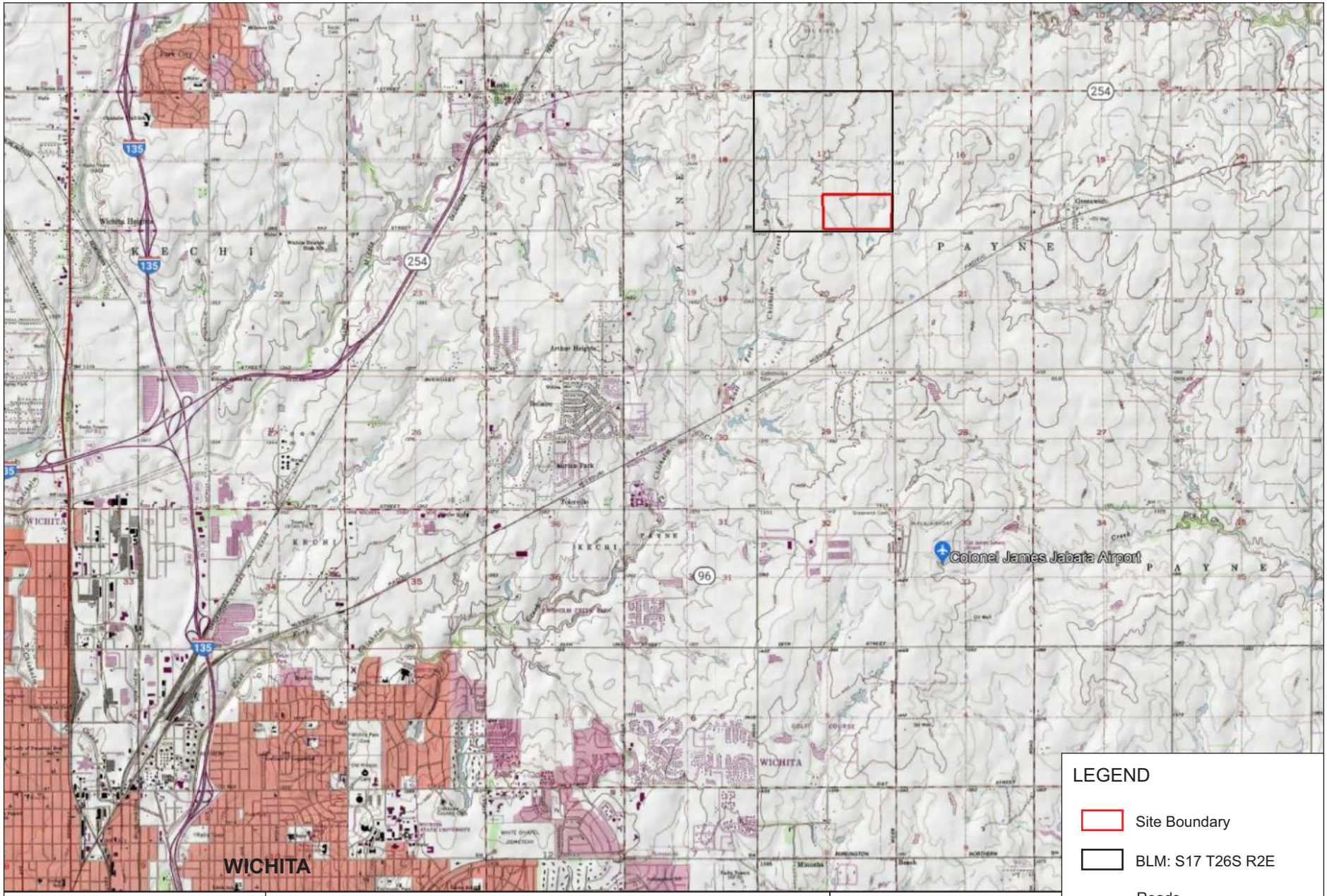
APPENDIX A

Figure 1: Site Location Map

Figure 2: Site Aerial Imagery Map

Figure 3: Site Observation (OB) Points Locations Map

Figure 4: Site WOTUS Map



GSI Engineering

Cedar Pass
E. 53rd Street North and N. Webb Road
Bel Aire, Kansas

2.0
mile

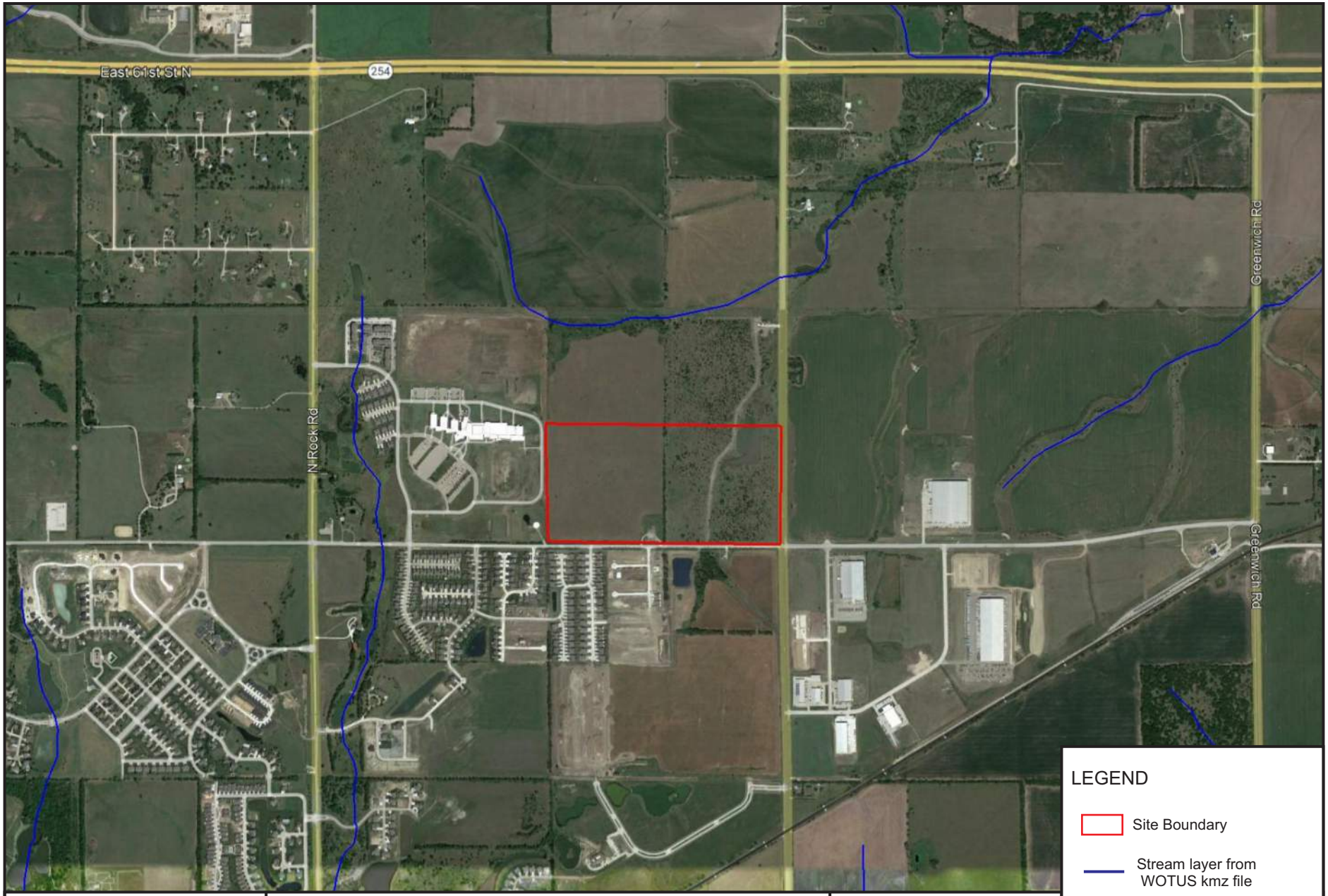
NORTH

GSI PROJECT NO.: 22W2004.01

DATE CREATED: 08.17.2022

BY: R.MONTEZ

FIGURE 1
Site Location Map



GSI Engineering

Cedar Pass
E. 53rd Street North and N. Webb Road
Bel Aire, Kansas

3,000
feet

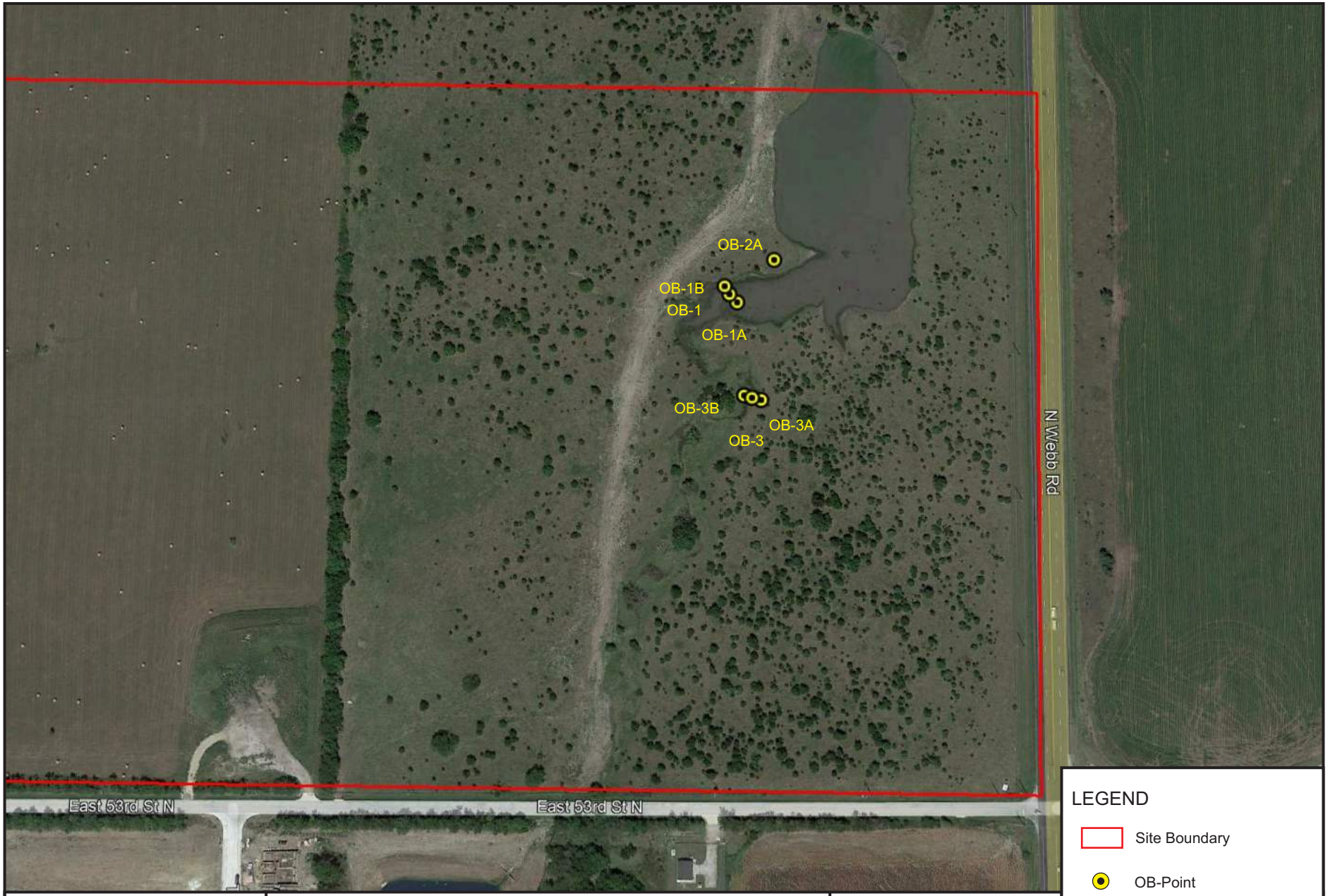
NORTH

GSI PROJECT NO.: 22W2004.01

DATE CREATED: 08.17.2022

BY: R.MONTEZ

FIGURE 2
Google Earth Aerial Imagery



GSI Engineering

Cedar Pass
E. 53rd Street North and N. Webb Road
Bel Aire, Kansas

600
feet

NORTH

GSI PROJECT NO.: 22W2004.01

DATE CREATED: 08.17.2022

BY: R.MONTEZ

LEGEND

Site Boundary

OB-Point

Roads

BOUNDARIES ARE APPROXIMATE

FIGURE 3
Site OB-Point Locations

GSI Engineering

FIGURE: 4.0	FIGURE NAME: Site WOTUS Map
Date: 8/17/2022	PROJECT NUMBER: 22W2004.01-Cedar Pass Addition
DRAWN BY:PM	PROJECT MANAGER: S. Corns

Scale: 1" = 100'

N W E S

0 50 100 Feet

Cedar Pass Addition
E. 53rd St. N
Bel Aire, Kansas 67226

Legend

Waypoints — Wetland — Pond

OB Points — Wetland

ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE

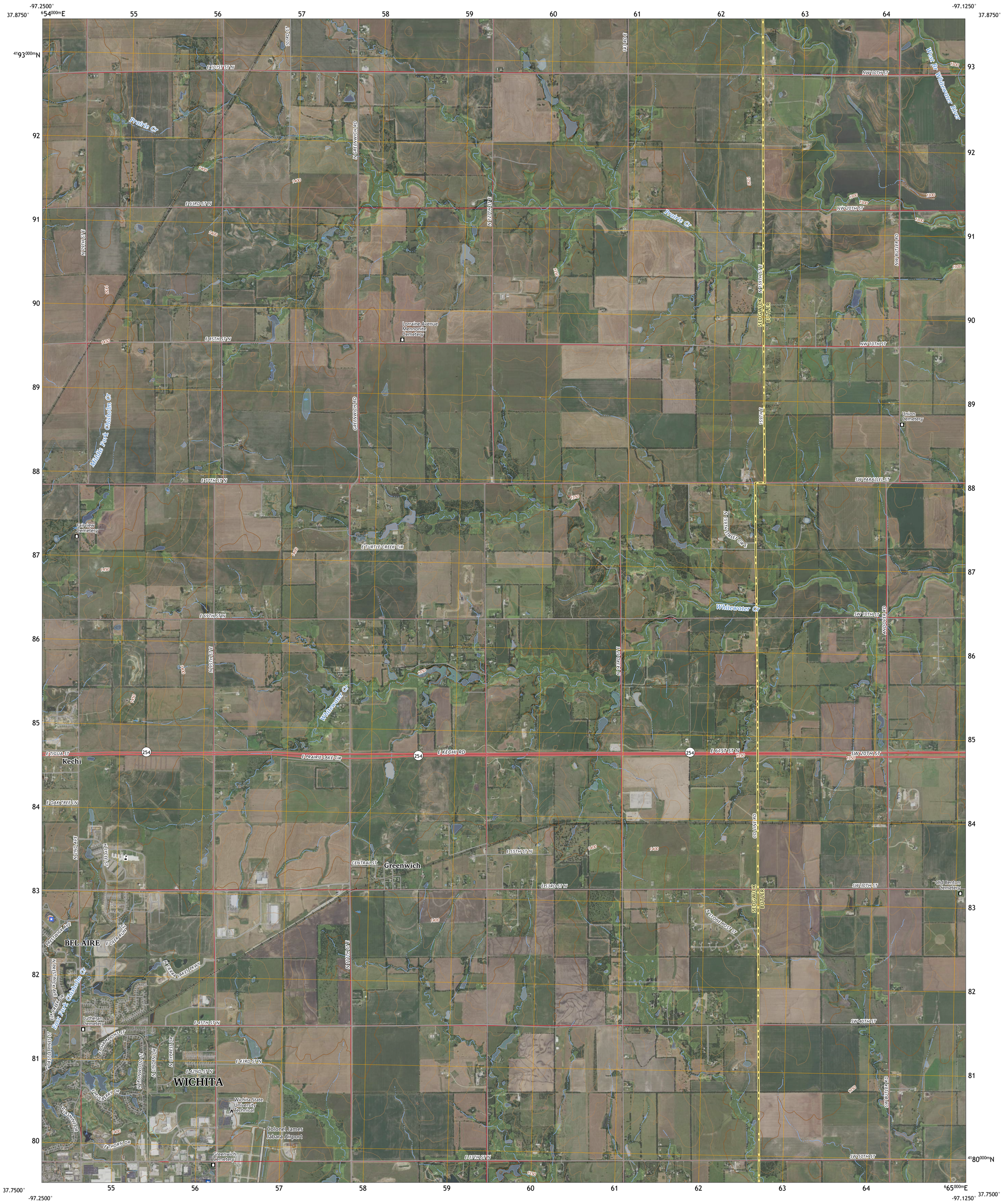
APPENDIX B

USGS Topographic Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
OnDemand Topo

GREENWICH QUADRANGLE
KANSAS
7.5-MINUTE TOPO


-97.2500°
-97.1250°
37.8750°
37.7500°
654000mE
665000mE
4193000mN
4180000mN
Prairie Cr
Whitewater River
Whitewater Cr
Little Fork Chisholm Cr
Big Fork Chisholm Cr
E 101ST ST N
E 93RD ST N
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Union Cemetery
Fairview Cemetery
Lutheran Cemetery
Old Benton Cemetery
Greenwich Cemetery
Kechi
E TIGUA ST
E PRAIRIE LAKE CIR
E KECHI RD
E OAK TREE LN
Greenwich
CENTRAL ST
BEL AIRE
E DEER RUN
N PRESTWICK AVE
E GREEN DR
N TERRACE LAKES PKWY
E CHAMPIONS ST
N WOODWORTH ST
N LINDEN DR
N CYPRESS DR
BAYBERRY DR
E THORN DR
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Wichita State University Technical
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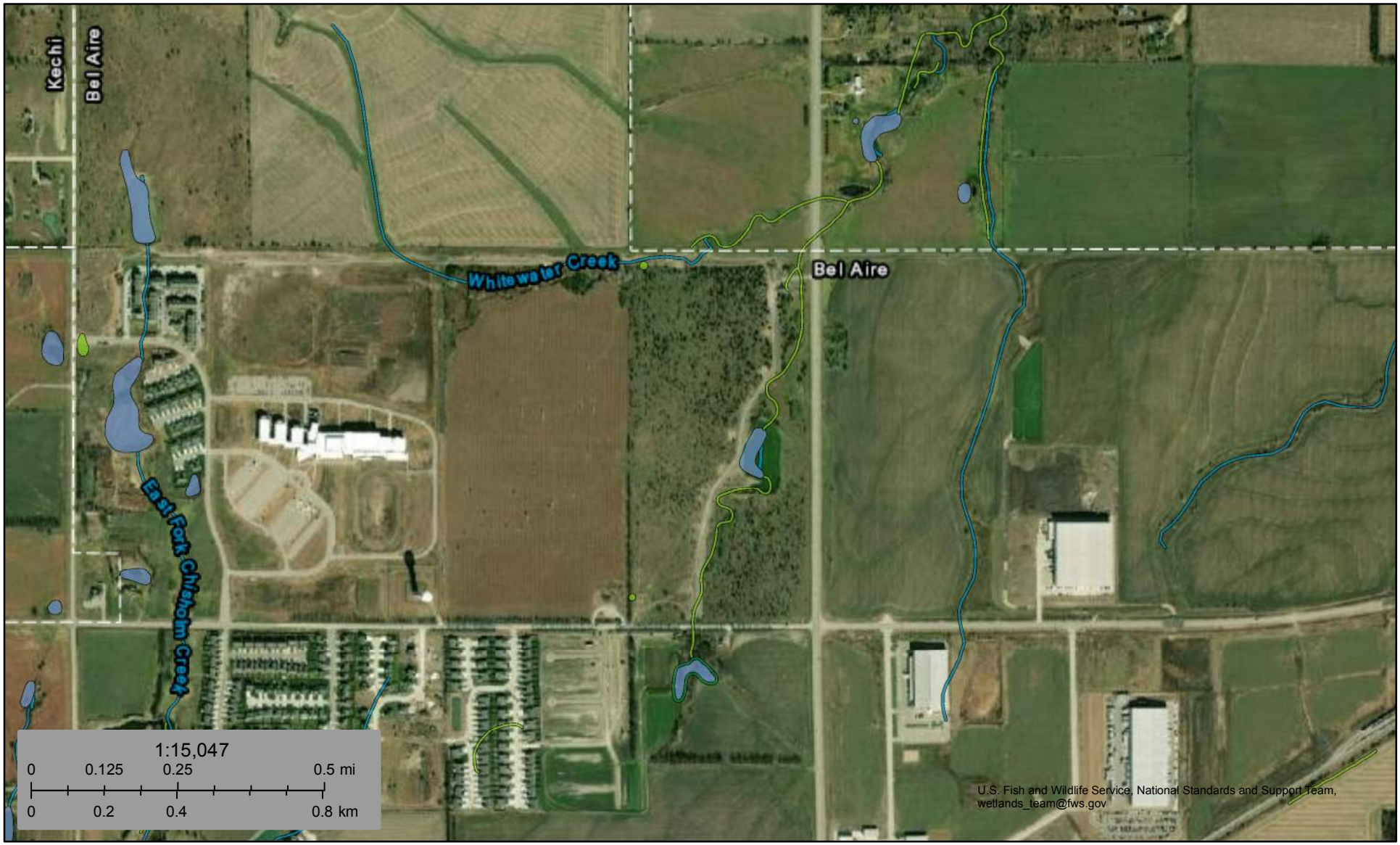
APPENDIX C

National Wetland Inventory Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Cedar Pass Addition



July 19, 2022

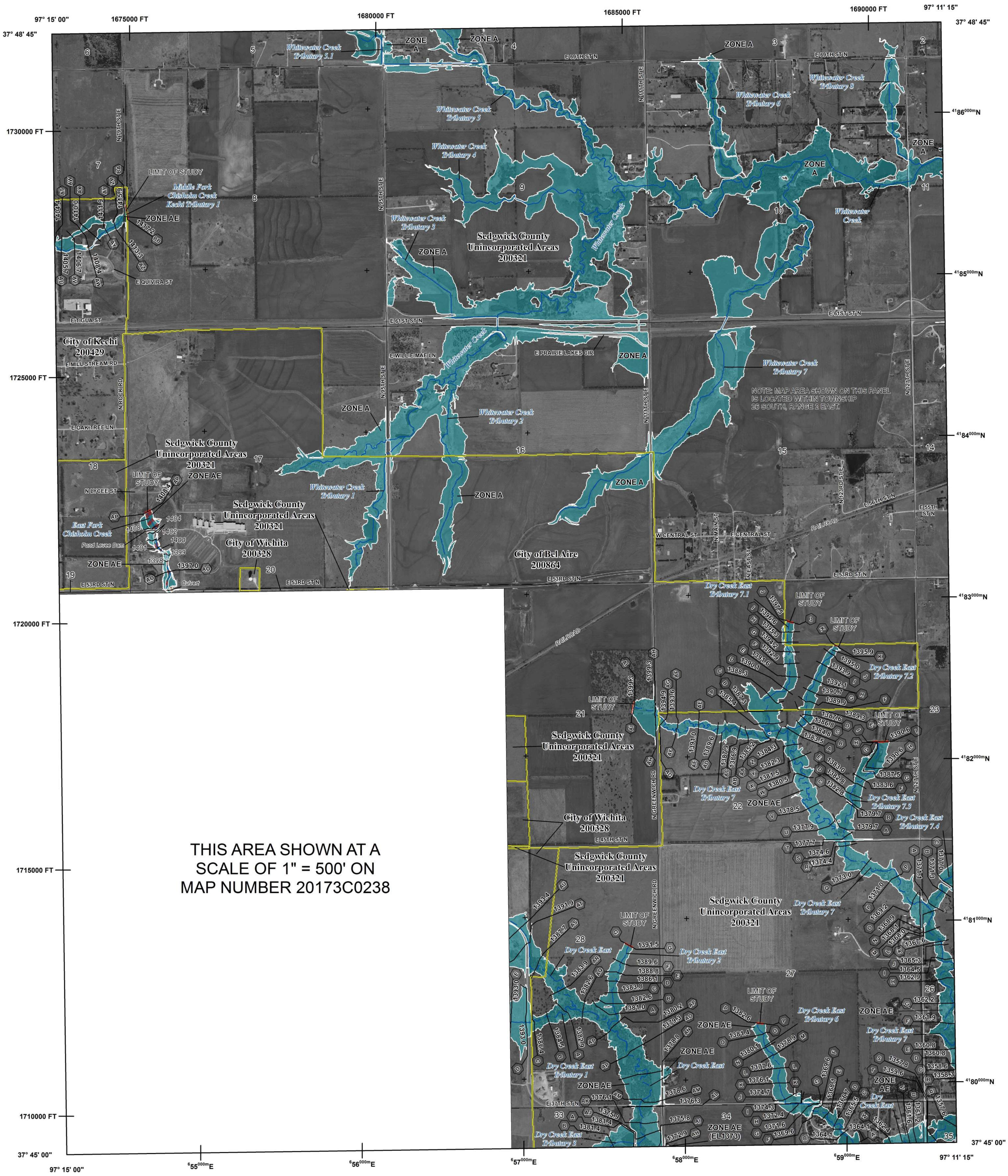
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX D

FEMA FIRM Map



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*

OTHER AREAS

- NO SCREEN — Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, Control Structure, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall
- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)

OTHER FEATURES

- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by Sedgwick County Division of Information & Operation/GIS. This information was derived from digital orthophotography at 6-inch resolution for Sedgwick County from photography dated 2014.

ACCREDITED LEVEE NOTES TO USERS: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at http://www.fema.gov/business/nfip/index.shtm.

SCALE

N

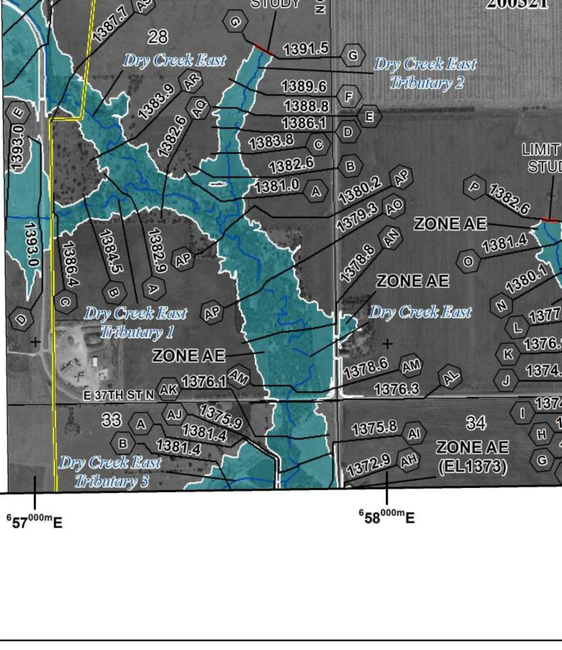
Map Projection:
NAD 1983 StatePlane Kansas South FIPS 1502 Feet;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet *1:12,000*

0 1,000 2,000 4,000 Feet

0 250 500 1,000 Meters

PANEL LOCATOR



* PANEL NOT PRINTED

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

SEDGWICK COUNTY, KANSAS
and Incorporated Areas

PANEL 240 OF 690

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
BEL AIRE, CITY OF	200864	0240	G
KECHI, CITY OF	200429	0240	G
SEDGWICK COUNTY	200321	0240	G
WICHITA, CITY OF	200328	0240	G

VERSION NUMBER
2.2.2.0

MAP NUMBER
20173C0240G

MAP REVISED
DECEMBER 22, 2016

APPENDIX E

NRCS Soil Survey

Sedgwick County, Kansas

3858—Goessel silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tpvy
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Goessel and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Goessel

Setting

Landform: Paleoterraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium over loamy alluvium

Typical profile

Ap - 0 to 6 inches: silty clay
A - 6 to 13 inches: silty clay
Bss - 13 to 31 inches: silty clay
BC - 31 to 51 inches: silty clay
2C - 51 to 79 inches: clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Minor Components

Irwin
Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Ladysmith
Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Rosehill
Percent of map unit: 4 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Aquolls, occasionally ponded
Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Sedgwick County, Kansas
Survey Area Data: Version 17, Sep 14, 2021

Sedgwick County, Kansas

3911—Rosehill silty clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tt6d
Elevation: 1,310 to 1,640 feet
Mean annual precipitation: 27 to 34 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 165 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rosehill and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rosehill

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

Ap - 0 to 9 inches: silty clay
BA - 9 to 18 inches: silty clay
Bw - 18 to 29 inches: silty clay
C - 29 to 36 inches: silty clay
Cr - 36 to 79 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 32 to 39 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Minor Components

Goessel

Percent of map unit: 5 percent
Landform: Paleoterraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Irwin

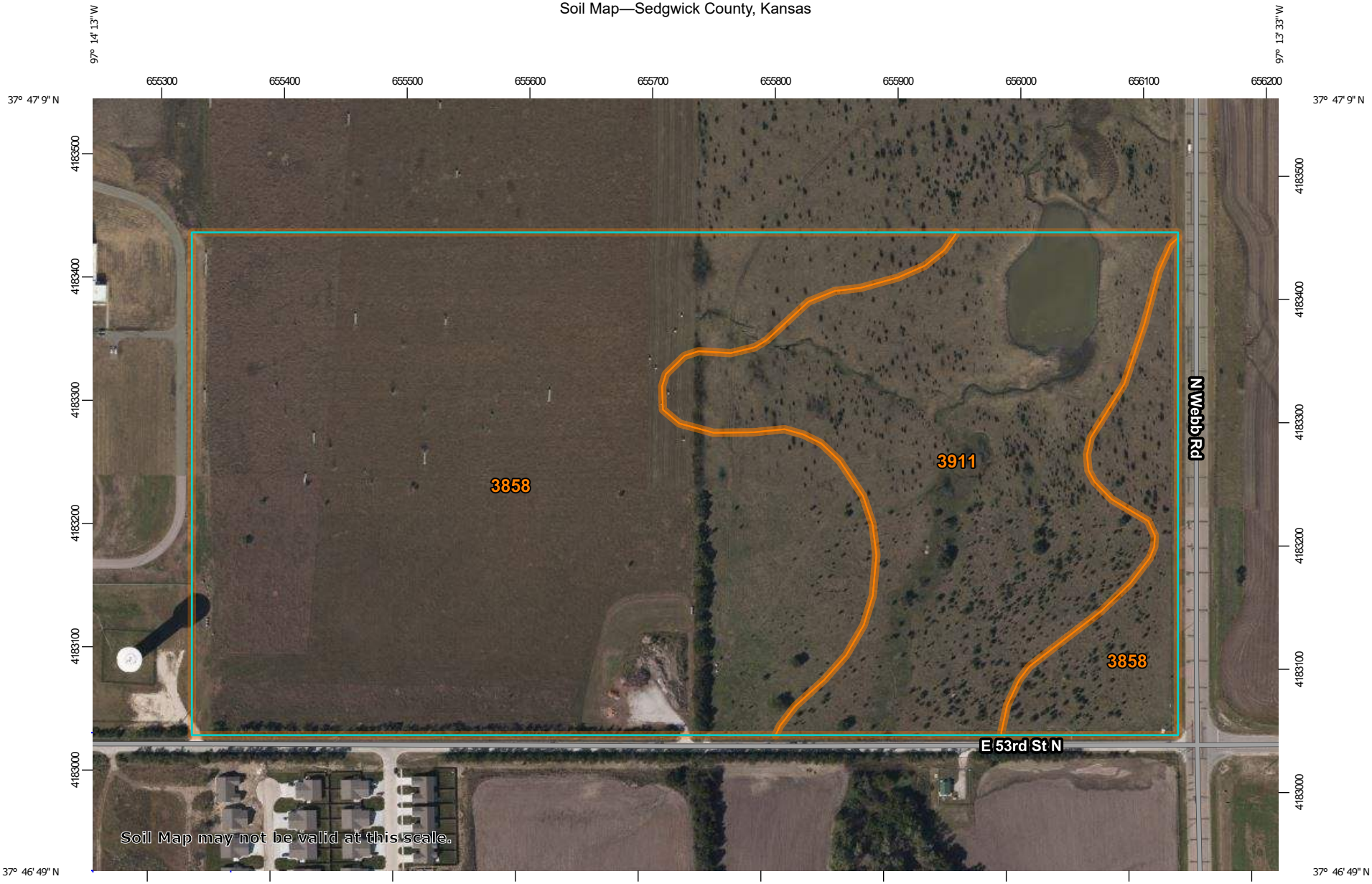
Percent of map unit: 4 percent
Landform: Interfluves
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R076XY107KS - Clay Hills
Hydric soil rating: No

Aquolls, occasionally ponded

Percent of map unit: 1 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R074XY132KS - Subirrigated
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Sedgwick County, Kansas
Survey Area Data: Version 17, Sep 14, 2021



Map Scale: 1:4,420 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Sedgwick County, Kansas
Survey Area Data: Version 17, Sep 14, 2021

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

Date(s) aerial images were photographed: Sep 23, 2018—Nov 29, 2018

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3858	Goessel silty clay, 1 to 3 percent slopes	57.7	70.9%
3911	Rosehill silty clay, 1 to 3 percent slopes	23.6	29.1%
Totals for Area of Interest		**81.3**	**100.0%**

APPENDIX F

USACE Great Plains Region Wetland Determination forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OB-1

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.783963 Long: -97.228446 Datum:

Soil Map Unit Name: Roschill silty clay NWI classification: Freshwater Emergent Wl

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation No, ~~Soil~~ ____, ~~or Hydrology~~ ____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No ____

Are Vegetation No, ~~Soil~~ ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	20	YES	FACW
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. ~~Sedge spp.~~ Carex vulpinoidea	50	YES	FACW
2. Iva annua	50	YES	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes Y No ____

Remarks: Sedge and Sumpweed fill the concave cracked soil

SOIL

Sampling Point: OB-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/1	100	— (moist)	—			CL	
~~6-16~~	~~10YR 1~~	~~60~~	~~5YR 8 (Moist 40~~				~~CL~~	~~Redox concentration dimensions~~
1-16	10YR 3/1	60	5YR 8 (moist 40				CL	Redox concentration

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ___

Remarks: Redox readily visible, in dime sized concentrations

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ☒ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No ☒ Depth (inches): _____

Water Table Present? Yes ___ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Minimal surface water ponded in areas. Dug directly within OB point.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OT-1B

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): _____ Slope (%): 3-5

Subregion (LRR): Great Plains - H Lat: -37.784005 Long: -97.228878 Datum: _____

Soil Map Unit Name: Roschill silty clay NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____

Are Vegetation No, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No Y	**Is the Sampled Area within a Wetland?** Yes _____ No ~~Y~~
Hydric Soil Present?	Yes _____ No ~~Y~~	
Wetland Hydrology Present?	Yes _____ No ~~Y~~	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	25 40 FAC	YES	UPL
2. Maclura pomifera	10	YES	FACU
3. Salix nigra	5		FACW
4.			
	40 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5')			
1. Iva annua	40	Yes	FAC
2. Polygonum aviculare	20	Yes	FACU
3. Rumex crispus	10	No	FAC
4. Pascopyrum smithii	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		

Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: OB-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100					SC	
6-14	10YR 3/1	100					SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Silty Clay hard dry soils

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology observed

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: DT-1A

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.783920 Long: -97.228795 Datum:

Soil Map Unit Name: Rosehill silty clay NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation NO, ~~Soil~~ _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation NO, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	30	YES	FACU
2. Salix nigra	10	YES	FACW
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. ~~Sedge sp.~~ Carex vulpinoidea	50	YES	FACW
2. Iva annua	40	YES	FAC
3. Ambrosia psilostachya	5	NO	FACU
4. Euphorbia marginata	5	NO	FACU
5. Polygonum aviculare	3	NO	FACU
6. Rumex crispus	3	NO	FAC
7.			
8.			
9.			
10.			
	106 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: OT3-1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100	–	–				
6-14	10YR 3/1	100	–	–				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: No redox or hydric soil indicators present. Ground elevated terrace from the concave wetland below.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrologic indicators present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OB-3B

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.783437 Long: -97.228746 Datum:

Soil Map Unit Name: Roseball silty clay NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus inermis	25	yes	UPL
2. Sporobolus ~~compositus~~ heterolepis	25	/	UPL
3. Bouteloua curtipendula	25	✓	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: Upland plants

SOIL

Sampling Point: OR-3B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100	DRY					DRY AG LIKE
6-16	10YR 3/1	100	—					SOIL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OB-3A

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): _____ Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.783409 Long: -97.228635 Datum: _____

Soil Map Unit Name: Roseball silty clay NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, ~~Soil~~ _____, ~~or Hydrology~~ _____ ~~significantly disturbed~~? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, ~~Soil~~ _____ or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Paspalum smithii	50	YES	FACW
2. Bouteloua curtipendula	20	YES	FACU
3. ~~Cenchrus longispinus~~	~~10~~		
4. Vernonia fasciculata	10		FAC
5. Symphoricarpos orbiculatus	10		FACU
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: Upland gradient as it transitions out of the cracked concave wetland.

SOIL

Sampling Point: DP-7A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100	(none)	0			SC	Dry upland soil
6-16	10YR 3/1	100	(dry)	0			SC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: No hydric soil indicators present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soils consistent with surrounding upland.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OB-3

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.783420 Long: -97.228695 Datum:

Soil Map Unit Name: Hillslopes Rosehill silty clay NWI classification: Freshwater Emergent WL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation No, ~~Soil _____, or Hydrology _____~~ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, ~~Soil _____, or Hydrology _____~~ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Approximately 5' wide linear wetland. Upland trees are dying but wetland the hydrology and soil conditions do not support the trees well.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	35	Yes	UPL
2. Morus alba	5		FACU
3.			
4.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. Carex vulpinoidea	40	Yes	FACW
2. Iva annua	20	Yes	FAC
3. Rumex crispus	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

SOIL

Sampling Point: OB-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
"0-1"	10YR 4/1	100					CL	Hard thin surface
"1-16"	10YR 3/1	55	5YR 8	45			CL	Redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks: Thin crusty layer 0-1" on concave surface. Deep cracks in soil. Redox was very apparent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Deep surface cracks on a concave surface were observed. A few crayfish burrows were observed within the concave surface.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Cedar Pass Addition City/County: Bel Aire / Sedgwick Sampling Date: 8/5/2022

Applicant/Owner: Garver State: KS Sampling Point: OB-2A

Investigator(s): Sean Corns & Ray Montez Section, Township, Range: S17-T26S-R2E

Landform (hillslope, terrace, etc.): Hillslopes Local relief (concave, convex, none): _____ Slope (%): 1-3

Subregion (LRR): Great Plains - H Lat: 37.784146 Long: -97.228553 Datum: _____

Soil Map Unit Name: Rose hill silty clay NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks: The high water mark on the pond's edge was surveyed for purposes of delineation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Ambrosia psilostachya	30	YES	FACU
2. Euphorbia marginata	20	YES	FACU
3. Pascopyrum smithii	30	YES	FACU
4. Bouteloua curtipendula	5	No	FACU
5. Vernonia fasciculata	5	No	FAC
6. Asclepias syriaca	5	No	UPL
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Upland plants border the steep edges of the ponded area. The steep terrace encompasses the pond on all sides with the exception of the area to the south east where water enters the pond from the south.

SOIL

Sampling Point: OB-2Q

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/1	100						Upland soils / Ag 1
5-16	10YR 3/1	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Point taken outside the pond. Pond is lower than the elevated upland surrounding the pond wetland area. The pond end abruptly to steep banks that encompass it on all ends with the exception of the SW.

APPENDIX G

Site Photos

Image 01

August 5, 2022

OB-1A

Sample point OB-1A

Notes:
Viewing northwest.

Image 02

August 5, 2022

OB-1 A

View towards pond.

Notes:
Viewing northeast.

Image 03

August 5, 2022

OB-1 A

View south of pond.

Notes:
Viewing southwest.

.

Image 04

March 24, 2020

Euphorbia marginata
Snow on the mountain.

Notes:
Abundant plant site wide-Cattle normally will not graze snow-on-the-mountain due to its bitter taste but can become debilitated and even die after eating hay containing it.

Image 05

August 5, 2022

OB-1B

Transition to upland.

Notes:
Viewing northwest.
.

Image 06

August 5, 2022

OB-2A

View of Pond and pond edge.

Notes:
Viewing northeast.
.

Image 07

August 5, 2022

OB-2A

View of Pond and pond edge.

Notes:
Viewing southeast.

Image 08

August 5, 2022

OB-2A

View of Pond and pond edge.

Notes:
Viewing northeast.

Image 09

August 5, 2022

OB-3

Wetland sample point.

Notes:
Viewing northwest.

Image 10

August 5, 2022

OB-3 A

View upland transition.

Notes:
Viewing southeast.

Image 11

August 5, 2022

OB-3 B

View upland.

Notes:
Viewing southeast

Image 12

August 5, 2022

Channelization

View concave channelization.

Notes:
Viewing northeast.

Image 13

August 5, 2022

Channelization

View concave channelization and wetland supporting crayfish burrow.

Notes:
Viewing ground.

APPENDIX H

Qualifications

Wetland Training Institute

This certifies that

Sean Corns

has completed training based in part on the U.S. Army Corps of Engineers Wetland Delineation Manual Technical Report Y-87-1 (1987 Manual), as provided for in the training materials developed in conjunction with Section 307(e) of the Water Resources Development Act of 1990 for the Wetland Delineator Certification Program

Basic Wetland Delineation in Great Bend, KS May 3 - 4, 2021

On May 7, 2021 (40 hours)

Robert J. Pierce
Course Coordinator

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

33 CFR 330. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.

Principal Purpose Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.

Disclosure Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at . Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (*see sample drawings and/or instructions*) and be submitted to the district engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Eugene Middle - Last - Vitarelli	First - Christopher Middle - Last - Bohm
Company - Northeast Developers, LLC	Company - Garver
Company Title - Managing Member	E-mail Address - cmbohm@garverusa.com
E-mail Address - genev1@cox.net	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
Address- 2026 South Triple Crown Street	Address- 1995 Midfield Rd
City - Wichita State - KS Zip - 67230 Country - USA	City - Wichita State - KS Zip - 67209 Country - USA
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business c. Fax d. Mobile (316) 807-6330	a. Residence b. Business (316) 221-3038 c. Fax d. Mobile (316) 258-3237

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Garver to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

X Eugene Vitarelli 9/16/2021
SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)
Cedar Pass Addition

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
Unnamed tributary of Whitewater Creek

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
East 53rd Street North & Webb Road

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude	°N	Longitude	°W
37.781775	Center	-97.231897	Center

City: Bel Aire | State: KS | Zip: 67226

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID

Municipality
Bel Aire

Section	Township	Range
17	26 South	02 East

17. DIRECTIONS TO THE SITE
From 53rd & Webb, go 1/4 mi west to a field entrance, then 700 ft north and 700 ft east.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE
NWP 29

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
Enlarging an existing pond using excavators and other large grading equipment. This will result in a loss of 0.32 acres of wetlands.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
Purchase 0.32 acres of wetland from a wetland bank.
Sunflower Land Trust: slt.ks.usa@gmail.com (316) 734-7545
https://www.sunflowerlandtrust.com/

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)
An existing pond will be enlarged to provide adequate water quality, drainage detention, flood protection for a nearby residential development.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
0.32	N/A	N/A

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)
Notice of Intent

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.
Purchase 0.32 acres of wetland from a wetland bank.
Sunflower Land Trust: slt.ks.usa@gmail.com (316) 734-7545

25. Is any portion of the nationwide permit activity already complete? ☐ Yes ☑ No If Yes, describe the completed work:

N/A

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

N/A

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

N/A

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

N/A

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the Corps district: N/A

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

N/A

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

X _____ 9/16/2022 _____ 9/12/22

SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Instructions for Preparing a
Department of the Army
Nationwide Permit (NWP) Pre-Construction Notification (PCN)

Blocks 1 through 4. To be completed by the Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the preconstruction notification, please attach a sheet of paper with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the PCN. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant's Telephone Number(s). Please provide the telephone number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by the applicant, if an agent is to be employed.

Block 12. Proposed Nationwide Permit Activity Name or Title. Please provide a name identifying the proposed NWP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

Block 13. Name of Waterbody. Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the NWP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Activity Street Address. If the proposed NWP activity is located at a site having a street address (not a box number), please enter it in Block 14.

Block 15. Location of Proposed Activity. Enter the latitude and longitude of where the proposed NWP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area requiring evaluation. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality where the site is located.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide a description of the location of the proposed NWP activity, such as lot numbers, tract numbers, or you may choose to locate the proposed NWP activity site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed NWP activity site if known. If there are multiple locations, please indicate directions to each location on a separate sheet of paper and mark as Block 17.

Block 18. Identify the Specific Nationwide Permit(s) You Propose to Use. List the number(s) of the Nationwide Permit(s) you want to use to authorize the proposed activity (e.g., NWP 29).

Block 19. Description of the Proposed Nationwide Permit Activity. Describe the proposed NWP activity, including the direct and indirect adverse environmental effects the activity would cause. The description of the proposed activity should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal. Identify the materials to be used in construction, as well as the methods by which the work is to be done.

Provide sketches when necessary to show that the proposed NWP activity complies with the terms of the applicable NWP(s). Sketches usually clarify the activity and result in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed NWP activity (e.g.,a conceptual plan), but do not need to be detailed engineering plans.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 19.

Block 20. Description of Proposed Mitigation Measures. Describe any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed NWP activity. The description of any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or additional mitigation measures.

Block 21. Purpose of Nationwide Permit Activity. Describe the purpose and need for the proposed NWP activity. What will it be used for and why? Also include a brief description of any related activities associated with the proposed project. Provide the approximate dates you plan to begin and complete all work.

Block 22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by the Proposed Nationwide Permit Activity. For discharges of dredged or fill material into waters of the United States, provide the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained by the proposed NWP activity. For structures or work in navigable waters of the United States subject to Section 10 of the Rivers and Harbors Act of 1899, provide the amount of navigable waters filled, dredged, or occupied by one or more structures (e.g., aids to navigation, mooring buoys) by the proposed NWP activity.

For multiple NWPs, or for separate and distant crossings of waters of the United States authorized by NWPs 12 or 14, attach an extra sheet of paper marked Block 21 to provide the quantities of wetlands, streams, or other types of waters filled, flooded, excavated, or drained (or dredged or occupied by structures, if in waters subject to Section 10 of the Rivers and Harbors Act of 1899) for each NWP. For NWPs 12 and 14, include the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained for each separate and distant crossing of waters or wetlands. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Identify Any Other Nationwide Permit(s), Regional General Permit(s), or Individual Permit(s) Used to Authorize Any Part of Proposed Activity or Any Related Activity. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. For linear projects, list other separate and distant crossings of waters and wetlands authorized by NWPs 12 or 14 that do not require PCNs. If more space is needed, attach an extra sheet of paper marked Block 23.

Block 24. Compensatory Mitigation Statement for Losses of Greater Than 1/10-Acre of Wetlands When Pre-Construction Notification is Required. Paragraph (c) of NWP general condition 23 requires compensatory mitigation at a minimum one-for-one replacement ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation is more environmentally appropriate or the adverse environmental effects of the proposed NWP activity are no more than minimal without compensatory mitigation, and provides an activity-specific waiver of this requirement. Describe the proposed compensatory mitigation for wetland losses greater than 1/10 acre, or provide an explanation of why the district engineer should not require wetland compensatory mitigation for the proposed NWP activity. If more space is needed, attach an extra sheet of paper marked Block 24.

Block 25. Is Any Portion of the Nationwide Permit Activity Already Complete? Describe any work that has already been completed for the NWP activity.

Block 26. List the Name(s) of Any Species Listed As Endangered or Threatened under the Endangered Species Act that Might be Affected by the Nationwide Permit Activity. If you are not a federal agency, and if any listed species or designated critical habitat might be affected or is in the vicinity of the proposed NWP activity, or if the proposed NWP activity is located in designated critical habitat, list the name(s) of those endangered or threatened species that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. If you are a Federal agency, and the proposed NWP activity requires a PCN, you must provide documentation demonstrating compliance with Section 7 of the Endangered Species Act.

Block 27. List Any Historic Properties that Have the Potential to be Affected by the Nationwide Permit Activity. If you are not a Federal agency, and if any historic properties have the potential to be affected by the proposed NWP activity, list the name(s) of those historic properties that have the potential to be affected by the proposed NWP activity. If you are a Federal agency, and the proposed NWP activity requires a PCN, you must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

Block 28. List the Wild and Scenic River or Congressionally Designated Study River if the Nationwide Permit Activity Would Occur in such a River. If the proposed NWP activity will occur in a river in the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" under the Wild and Scenic Rivers Act, provide the name of the river. For a list of Wild and Scenic Rivers and study rivers, please visit .

Block 29. Nationwide Permit Activities that also Require Permission from the Corps Under 33 U.S.C. 408. If the proposed NWP activity also requires permission from the Corps under 33 U.S.C. 408 because it will temporarily or permanently alter, occupy, or use a Corps federal authorized civil works project, indicate whether you have submitted a written request for section 408 permission from the Corps district having jurisdiction over that project.

Block 30. Other Information Required For Nationwide Permit Pre-Construction Notifications. The terms of some of the Nationwide Permits include additional information requirements for preconstruction notifications:

* NWP 3, Maintenance –information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.
* NWP 31, Maintenance of Existing Flood Control Facilities –a description of the maintenance baseline and the dredged material disposal site.
* NWP 33, Temporary Construction, Access, and Dewatering –a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.
* NWP 44, Mining Activities –if reclamation is required by other statutes, then a copy of the final reclamation plan must be submitted with the pre-construction notification.
* NWP 45, Repair of Uplands Damaged by Discrete Events –documentation, such as a recent topographic survey or photographs, to justify the extent of the proposed restoration.
* NWP 48, Commercial Shellfish Aquaculture Activities –(1) a map showing the boundaries of the project area, with latitude and longitude coordinates for each corner of the project area; (2) the name(s) of the species that will be cultivated during the period this NWP is in effect; (3) whether canopy predator nets will be used; (4) whether suspended cultivation techniques will be used; and (5) general water depths in the project area (a detailed survey is not required).
* NWP 49, Coal Remining Activities –a document describing how the overall mining plan will result in a net increase in aquatic resource functions must be submitted to the district engineer and receive written authorization prior to commencing the activity.
* NWP 50, Underground Coal Mining Activities –if reclamation is required by other statutes, then a copy of the reclamation plan must be submitted with the pre-construction notification.

If more space is needed, attach an extra sheet of paper marked Block 30.

Block 31. Signature of Applicant or Agent. The PCN must be signed by the person proposing to undertake the NWP activity, and if applicable, the authorized party (agent) that prepared the PCN. The signature of the person proposing to undertake the NWP activity shall be an affirmation that the party submitting the PCN possesses the requisite property rights to undertake the NWP activity (including compliance with special conditions, mitigation, etc.).

DELINEATION OF WETLANDS, OTHER SPECIAL AQUATIC SITES, AND OTHER WATERS

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. The 45 day PCN review period will not start until the delineation is submitted or has been completed by the Corps.

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings should also be included. Please submit one original, or good quality copy, of all drawings on 8½x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.

ADDITIONAL INFORMATION AND REQUIREMENTS

For proposed NWP activities that involve discharges into waters of the United States, water quality certification from the State, Tribe, or EPA must be obtained or waived (see NWP general condition 25). Some States, Tribes, or EPA have issued water quality certification for one or more NWPs. Please check the appropriate Corps district web site to see if water quality certification has already been issued for the NWP(s) you wish to use. For proposed NWP activities in coastal states, state Coastal Zone Management Act consistency concurrence must be obtained, or a presumption of concurrence must occur (see NWP general condition 26). Some States have issued Coastal Zone Management Act consistency concurrences for one or more NWPs. Please check the appropriate Corps district web site to see if Coastal Zone Management Act consistency concurrence has already been issued for the NWP(s) you wish to use.