

APPENDIX D: Water Resources



TOPIC: US 54/East Kellogg Expansion – Water Features Delineation Report

AUTHOR: David Partridge

DATE: 06/28/2022

1.0 INTRODUCTION

Burns & McDonnell was retained by the Kansas Department of Transportation (KDOT) to provide wetland delineation services for the proposed US 54/US 400/East Kellogg (US 54/East Kellogg) expansion (Project) in Sedgwick and Butler Counties, Kansas (Figure A-1, Appendix A). The following summarizes the proposed Project and the results of the wetland delineation. The Project has potential to impact wetlands or other waterbodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation to evaluate the Project for the presence of wetlands and other waterbodies, including streams, drainages, and ponds within and adjacent to the NEPA Clearance Boundary defined for the Project including a 100-foot-wide construction buffer (Survey Area). The Survey Area included in this report and displayed on the accompanying figures encompasses approximately 1,538 acres.

2.0 Methods

Burns & McDonnell reviewed available background information for the Survey Area prior to conducting a site visit. This available background information included the 2019 U.S. Geological Survey (USGS) 7.5 minute topographic maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), National Agriculture Imagery Program (NAIP) aerial photography (2019), USGS National Hydrography Data (NHD), and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Sedgwick and Butler Counties, Kansas. Figures A-2 and A-3 in Appendix A depict this data. The USACE Antecedent Precipitation Tool was used to evaluate climate conditions for the period before the field efforts (Appendix D).

Wetland presence based only on NWI maps cannot be assumed to be a wholly accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands may not be included on NWI maps. Therefore, a field visit was conducted to identify any wetlands or other waterbodies that may be present within the proposed Project.

2.1 Wetland Delineation Field Survey

Burns & McDonnell wetland scientists completed an onsite wetland delineation from May 31st – June 1st, 2022. The delineation was completed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation*



Manual: Great Plains Region – Version 2.0 (Regional Supplement). Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were recorded using a sub-meter accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C (Photographs C-1 through C-67).

3.0 Results

The following sections describe the results of the existing data review and the completed wetland delineation.

3.1 Existing Data Review

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography of the Survey Area and potential locations of wetlands and other waterbodies (Figure A-2). The USGS topographic maps indicate the Survey Area crosses relatively flat topography. The NHD data indicates that the Survey Area crosses two named streams, Fourmile Creek and Republican Creek.

The 2010 FEMA Flood Hazard Rate maps for Sedgwick and Butler Counties indicate the Survey Area is within the FEMA Floodplain.

The NWI data indicates that the Survey Area crosses palustrine emergent (PEM), palustrine unconsolidated bottom (PUB), and palustrine forested (PFO) wetlands. The 2020 aerial photograph indicates that the Survey Area consists primarily of developed, urban areas. (Figure A-3 and Figure A-4).

The NRCS SSURGO digital data indicates that the Survey Area crosses 16 soil map units (Figure A-3). Of these map units, 18 of them are included on the national hydric soil list.

The USACE Antecedent Precipitation Tool indicates that the region near Survey Area experienced wetter than normal precipitation conditions the three months before the field efforts (Appendix D).

3.2 Wetland Delineation Field Survey

From May 31st – June 1st, 2022, a two-person team comprised of a wetland scientist and a GPS specialist, both with Burns & McDonnell, conducted a wetland delineation of the Survey Area. The wetland specialist determined the location of wetlands and streams, and the GPS specialist recorded the location and extent of features identified within the Survey Area. The land cover and delineated wetlands and other waterbodies are discussed below.

Vegetation. The Survey Area was comprised largely of a developed, urban environment. Typical vegetation in the upland areas included callery pear (*Pyrus calleryana*), coral berry (*Symphoricarpos orbiculatus*), Bermuda grass (*Cynodon dactylon*), hackberry (*Celtis occidentalis*), osage orange (*Maclura pomifera*), Canada wildrye (*Elymus canadensis*), eastern red cedar (*Juniperus virginiana*), hairy woodland brome (*Bromus pubescens*), Canada goldenrod (*Solidago canadensis*), Johnson grass (*Sorghum halepense*), green ash (*Fraxinus pennsylvanica*), poison-ivy (*Toxicodendron radicans*), boxelder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), and smooth brome (*Bromus inermis*). Common vegetation



observed within delineated wetland areas is described below and species are indicated on the Data Forms in Appendix B.

3.2.1 Soils

Typical upland soils ranged from (10YR 3/3) brown (10YR 4/3) and silty clay loam in texture. Typical wetland soils were very dark greyish brown (10YR 4/2) and were silty clay loam in texture. Redoximorphic features were present in wetland soils.

3.2.3 Hydrology

The primary source of hydrology for the wetlands was overland flow. Indicators of hydrology within the wetlands included a high-water table, saturation, oxidized rhizospheres on living roots, a positive FAC neutral test, and geomorphic position.

3.3 Delineated Areas

Twenty-seven wetlands were identified during the field survey. The wetlands are described by type below, and their locations are shown on Figure A-4 in Appendix A. Sample plots are included in Appendix B and Appendix C, respectively.

3.3.1 Wetlands

Table 1 provides the type and size of the wetlands delineated within the Survey Area. The delineated wetland types included in the Survey Area were PUB, palustrine aquatic bottom (PAB), PEM, and palustrine scrub-shrub (PSS). One PEM wetland, W-D-27, was delineated via desktop due to lack of access from hazardous conditions caused by excessive flooding.

Two PAB wetlands encompassing an area of approximately 0.42 acre were delineated within the Survey Area. PAB wetlands were characterized by a combined aerial cover of more than 30 percent of vegetation.

Three PEM wetlands encompassing an area of approximately 1.9 acres were delineated within the Survey Area. PEM wetlands were characterized by a 30 percent or greater aerial cover of emergent, herbaceous vegetation. Additionally, the combined aerial cover of shrubs, saplings, and trees in these wetlands was less than 30 percent.

One PSS wetland encompassing an area of approximately 0.04 acre was delineated within the Survey Area. PSS wetlands were characterized by a 30 percent or greater aerial cover in the shrub/sapling stratum and an aerial cover of less than 30 percent in the tree stratum.

Twenty-one PUB wetlands encompassing an area of approximately 35.29 acres were delineated within the Survey Area. PUB wetlands were characterized by a combined aerial cover of less than 30 percent of vegetation.



3.3.2 Streams

Table 2 provides the type and delineated length of each stream recorded within the Survey Area. Delineated stream flow regimes were perennial, intermittent, and ephemeral and are described below.

Sixteen ephemeral streams extending for a delineated length of approximately 5,921 feet, were identified. Ephemeral streams were characterized by a defined bed and bank but had limited or no flow during the site visit, indicating these streams largely carry water only during and after precipitation events. The ephemeral streams ranged from approximately 1 to 5 feet wide and were approximately 0.25 to 0.75 foot in deep at the Ordinary High-Water Mark (OHWM). Banks heights ranged from approximately 0.5 to 3 feet.

Ten intermittent streams extending for a delineated length of approximately 36,534 feet, were identified. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit, indicating the stream is partially fed by groundwater but that the stream may not flow during dry periods. These intermittent stream crossings ranged from approximately 5 to 30 feet wide and were approximately 1.5 to 4 feet deep at the OHWM. Bank heights were approximately 2.5 to 20 feet. Two intermittent streams are named; S-D-4 is Spring Branch and S-D-20 is Republican Creek.

One perennial stream extending for a delineated length 8,553 feet, was identified. Perennial streams are characterized by the presence of substantial flow during the site visit, a likely indicator that the source of much of the water is from groundwater (base flow). This perennial stream was approximately 25 feet wide and was approximately 5 feet deep at the OHWM. The stream's bank height was approximately 10 feet. This perennial stream, S-D-26, is Fourmile Creek.



Table 1: US 54/East Kellogg Expansion: Wetlands

Wetland Number	Wetland Type	Area of Wetland Delineated (acre)	Area of Wetland within Updated Survey Area (acre)	USACE Jurisdictional ^{a, b}	Figure A-4 Page Number
W-D-1	PUB	0.03	N/A	No	5,6
W-D-2	PUB	1.09	1.09	No	6,7,20, 21
W-D-3	PUB	0.10	N/A	No	6,7
W-D-4	PUB	0.77	N/A	No	19,20
W-D-5	PUB	1.14	0.03	No	19,20
W-D-6	PUB	0.94	0.003	No	24,25
W-D-7	PUB	0.94	N/A	Yes	11,12
W-D-8	PUB	0.92	N/A	No	25,26
W-D-9	PEM	0.29	N/A	No	25,26
W-D-10	PUB	0.63	0.63	No	25,26
W-D-11	PSS	0.04	N/A	No	26,27
W-D-12	PUB	1.18	N/A	Yes	27,28
W-D-13	PUB	0.36	N/A	No	13,14
W-D-14	PUB	1.33	0.03	Yes	13,14
W-D-15	PUB	0.60	N/A	Yes	13,14
W-D-16	PUB	0.02	N/A	No	13,14
W-D-17	PUB	3.90	0.50	Yes	8,9,22, 23
W-D-18	PUB	0.71	0.06	Yes	22,23
W-D-19	PAB	0.19	0.18	Yes	22,23
W-D-20	PUB	2.09	N/A	Yes	9,10
W-D-21	PUB	3.69	N/A	No	7,8
W-D-22	PAB	0.23	0.10	No	8,9
W-D-23	PUB	1.26	N/A	No	18,19
W-D-24	PEM	0.005	0.005	Yes	18,19
W-D-25	PUB	12.20	1.25	Yes	19,20, 21
W-D-26	PUB	1.38	0.05	Yes	20,21
W-D-27	PEM	1.61	N/A	Yes	22,23
Total	:	37.65	3.93		

⁽a) Light green shading indicates potentially jurisdictional features

⁽b) An official Jurisdictional Determination can only be provided by the USACE. Recommendations made by Burns & McDonnell follow the pre-2015 regulatory guidance (September 16, 2021).



<u>Table 2: US 54/East Kellogg Expansion: Streams</u>

Stream Number ^c	Stream Type	Length of Stream Delineated (feet)	Length of Stream within Updated Survey Area (Feet)	USACE Jurisdictional ^a	Figure A-4 Page Number
S-D-1	Ephemeral	181	162	No	5,6
S-D-2	Ephemeral	201	N/A	No	5,6
S-D-3	Ephemeral	508	167	No	5,6
S-D-4	Intermittent	12,472	5,372	Yes	4,5,6,19,20
S-D-5	Ephemeral	204	204	Yes	4,5
S-D-6	Ephemeral	810	810	Yes	2,3,4,5
S-D-7	Ephemeral	399	399	Yes	4,5
S-D-8	Ephemeral	168	N/A	Yes	4,5
S-D-9	Ephemeral	961	N/A	Yes	5,6
S-D-10	Ephemeral	137	N/A	Yes	5,6
S-D-11	Ephemeral	397	N/A	Yes	5,6
S-D-12	Ephemeral	32	N/A	Yes	5,6
S-D-13	Intermittent	2,038	372	Yes	11,12
S-D-14	Intermittent	1,224	N/A	Yes	25,26
S-D-15	Ephemeral	184	N/A	Yes	27,28
S-D-16	Intermittent	6,129	208	Yes	13,14,27,28
S-D-17	Intermittent	956	225	Yes	13,14
S-D-18	Ephemeral	516	58	Yes	13,14
S-D-19	Intermittent	6,809	675	Yes	14,15,28
S-D-20	Intermittent	3,071	1,039	Yes	22,23
S-D-21	Intermittent	592	531	Yes	9,10,23,24
S-D-22	Intermittent	2,641	898	Yes	23,24
S-D-23	Ephemeral	664	79	Yes	18,19
S-D-24	Ephemeral	57	57	No	17,18
S-D-25	Intermittent	604	N/A	Yes	9,10
S-D-26	Perennial	8,552	947	Yes	7,8,9,22,23
S-D-27	Ephemeral	501	501	No	17,18
Total:		51,008	12,704		

⁽c) Light green shading indicates potentially jurisdictional features

⁽d) An official Jurisdictional Determination can only be provided by the USACE. Recommendations made by Burns & McDonnell follow the pre-2015 regulatory guidance (September 16, 2021).

⁽e) S-D-27, a continuation of S-D-24, was delineated via desktop due to Survey Area extension.



4.0 Summary

Burns & McDonnell conducted a wetland delineation and protected species assessment of the Project to identify wetlands and other waterbodies. A total of 27 wetlands and 27 streams were identified during the delineation efforts. To avoid the need for a Section 404 permit from the USACE, the proposed Project should be designed to avoid all impacts to potentially jurisdictional waters.

As shown in Table 1 and Table 2, 12 wetlands and 22 streams appear to meet the criteria of waters of the U.S. and may potentially be under USACE jurisdiction. However, 15 wetlands and 5 streams did not appear to meet the criteria of waters of the U.S. and may not be under USACE jurisdiction The review of potential jurisdictional status was based on the pre-2015 regulatory guidance (September 16, 2021). Factors considered to make a jurisdictional status recommendation included the hydrological connections to other probable waters of the U.S. Jurisdictional status recommendations are the opinion of Burns & McDonnell based best professional judgement and interpretation of the pre-2015 regulatory guidance and subject to change based on agency review. An approved Jurisdictional Determination would need to be issued by the USACE to confirm these recommendations.

If impacts to waters of the U.S. cannot be completely avoided, they should be minimized, and a Section 404 permit from the USACE would be required. Once final Project design is known, an assessment of potential impacts, if applicable, and a permitting strategy can be determined. If you have any questions or require additional information, please contact David Partridge by email at dmpartridge@burnsmcd.com.

Sincerely,

David Partridge

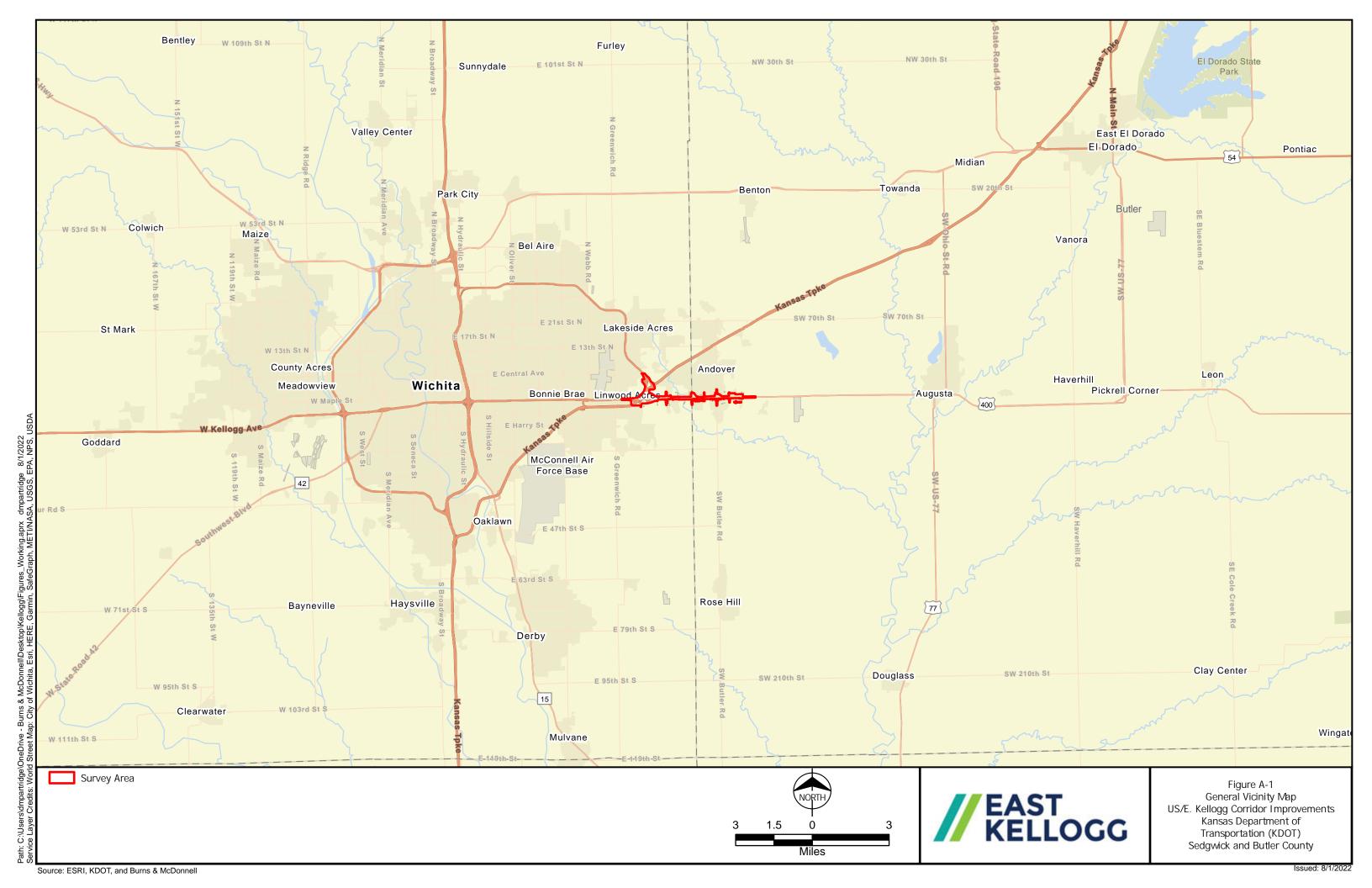
Assistant Environmental Scientist

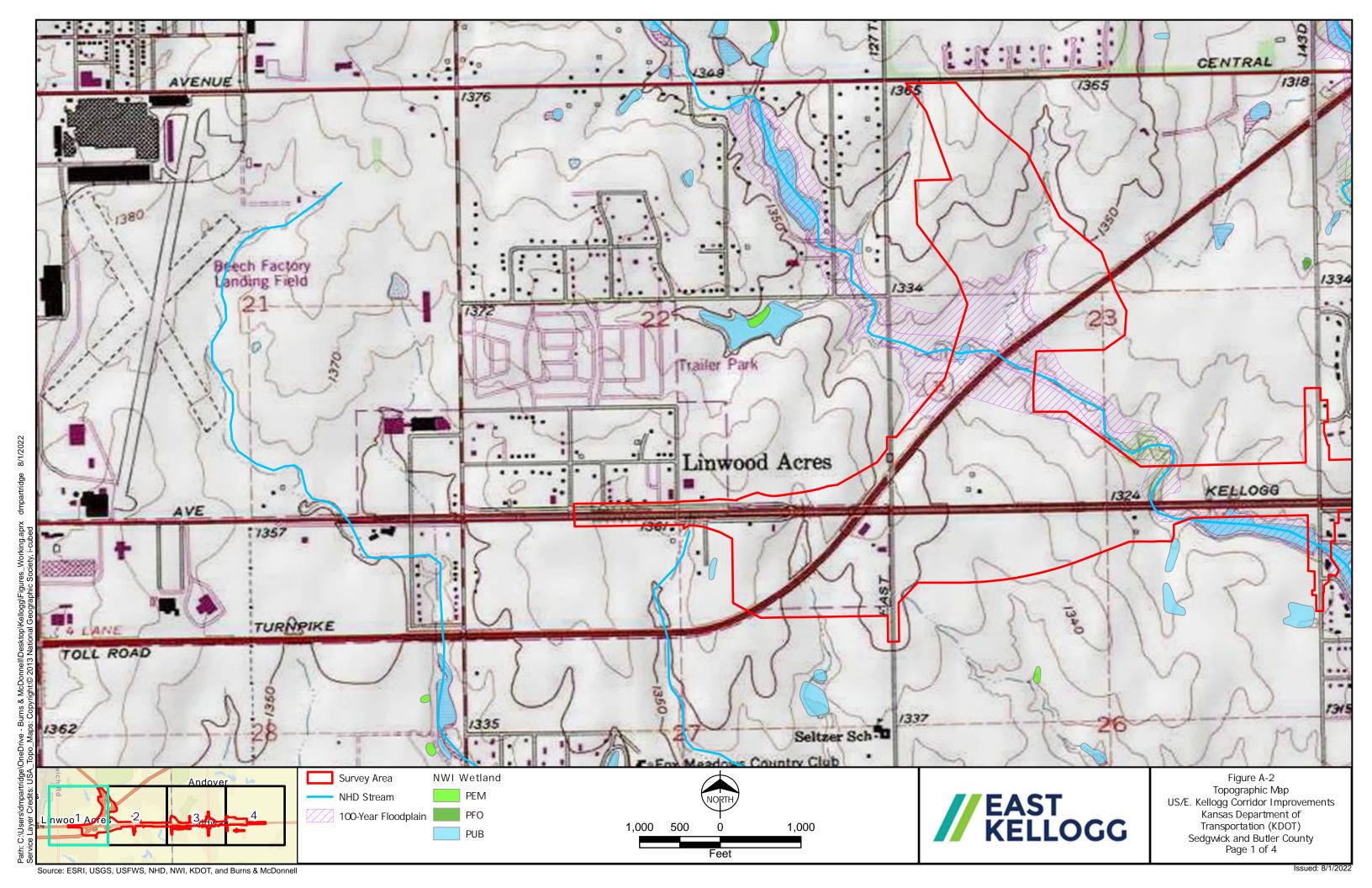
David Partridge

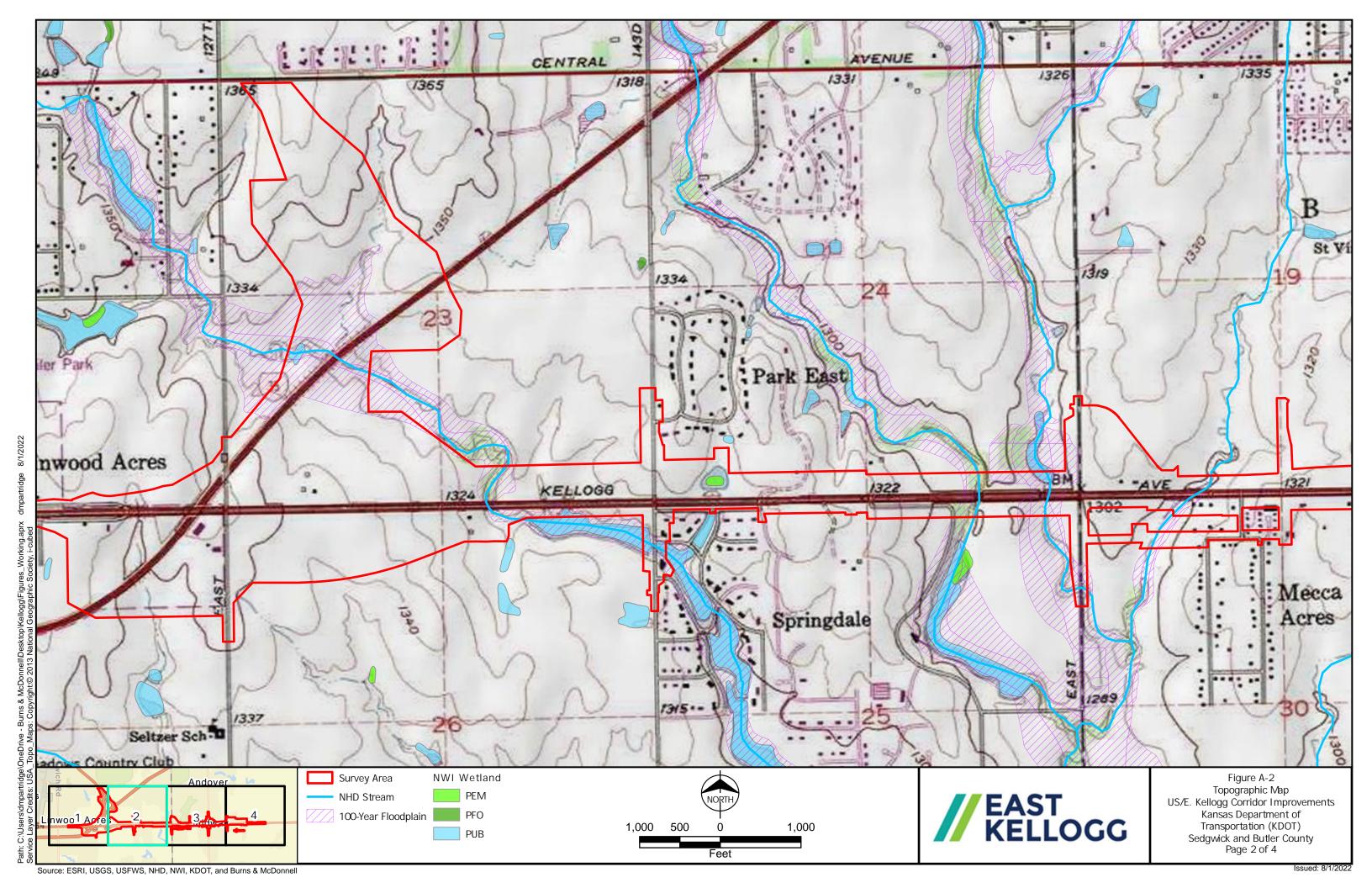
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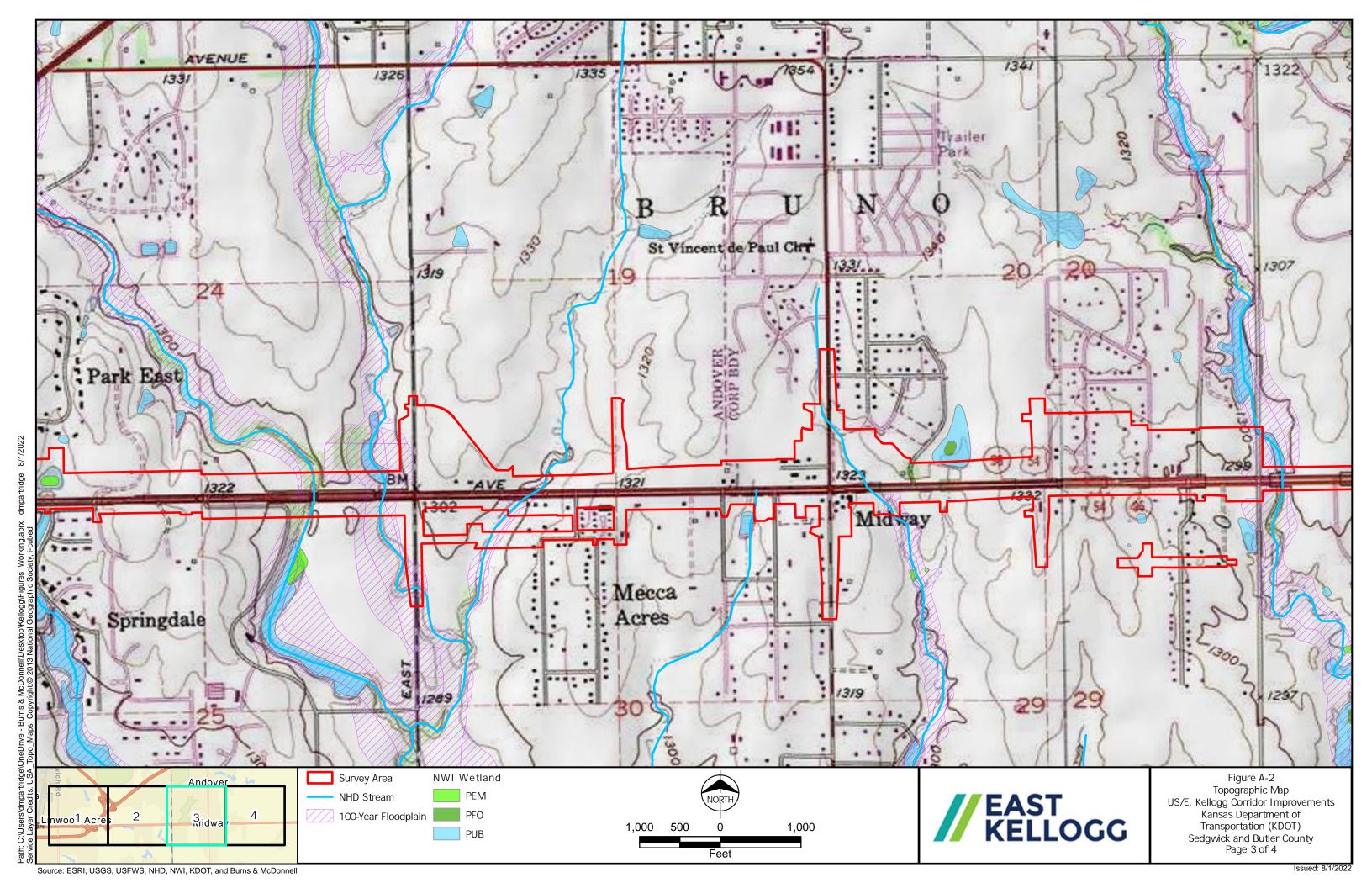


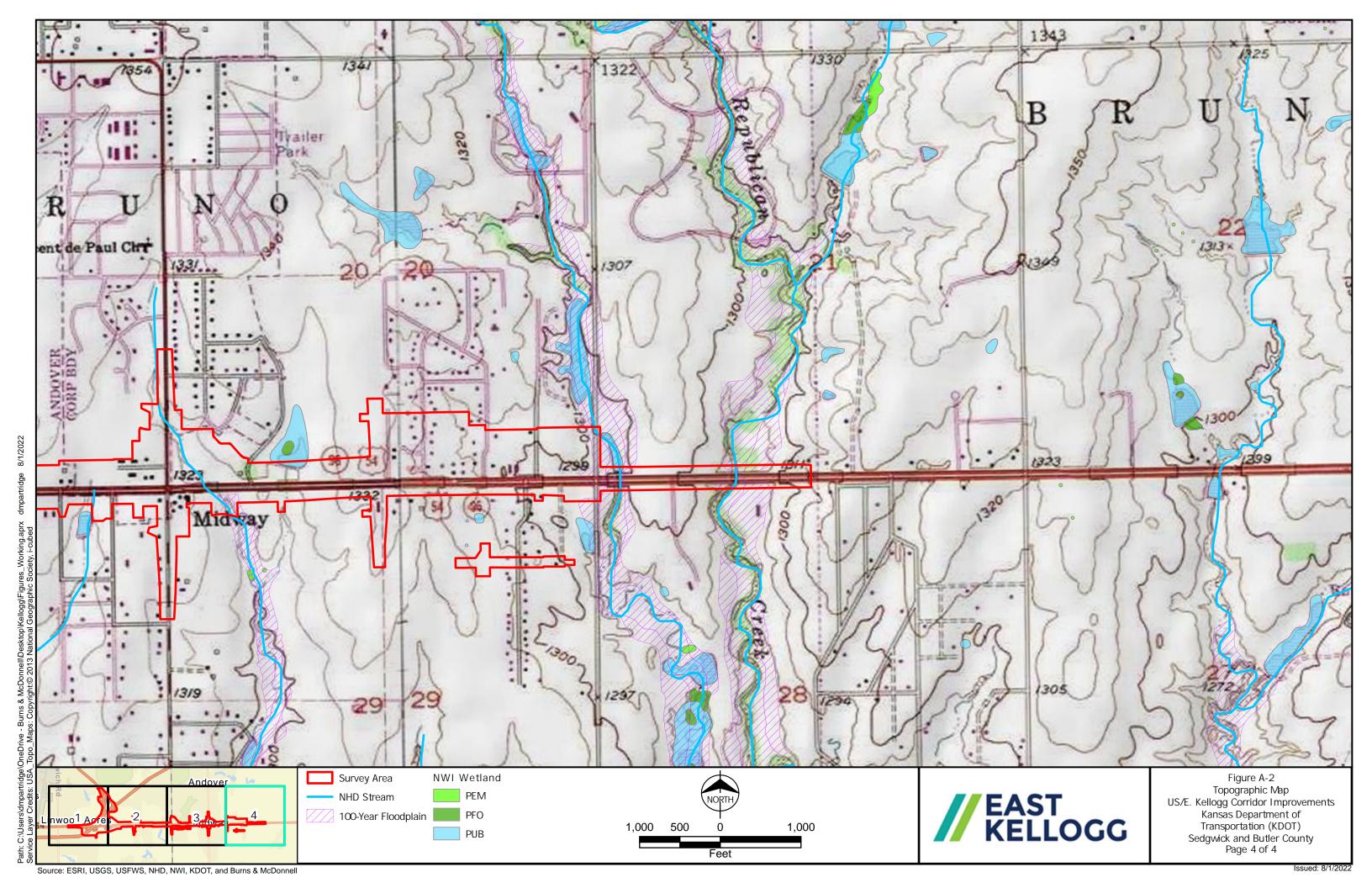
Appendix A -Figures

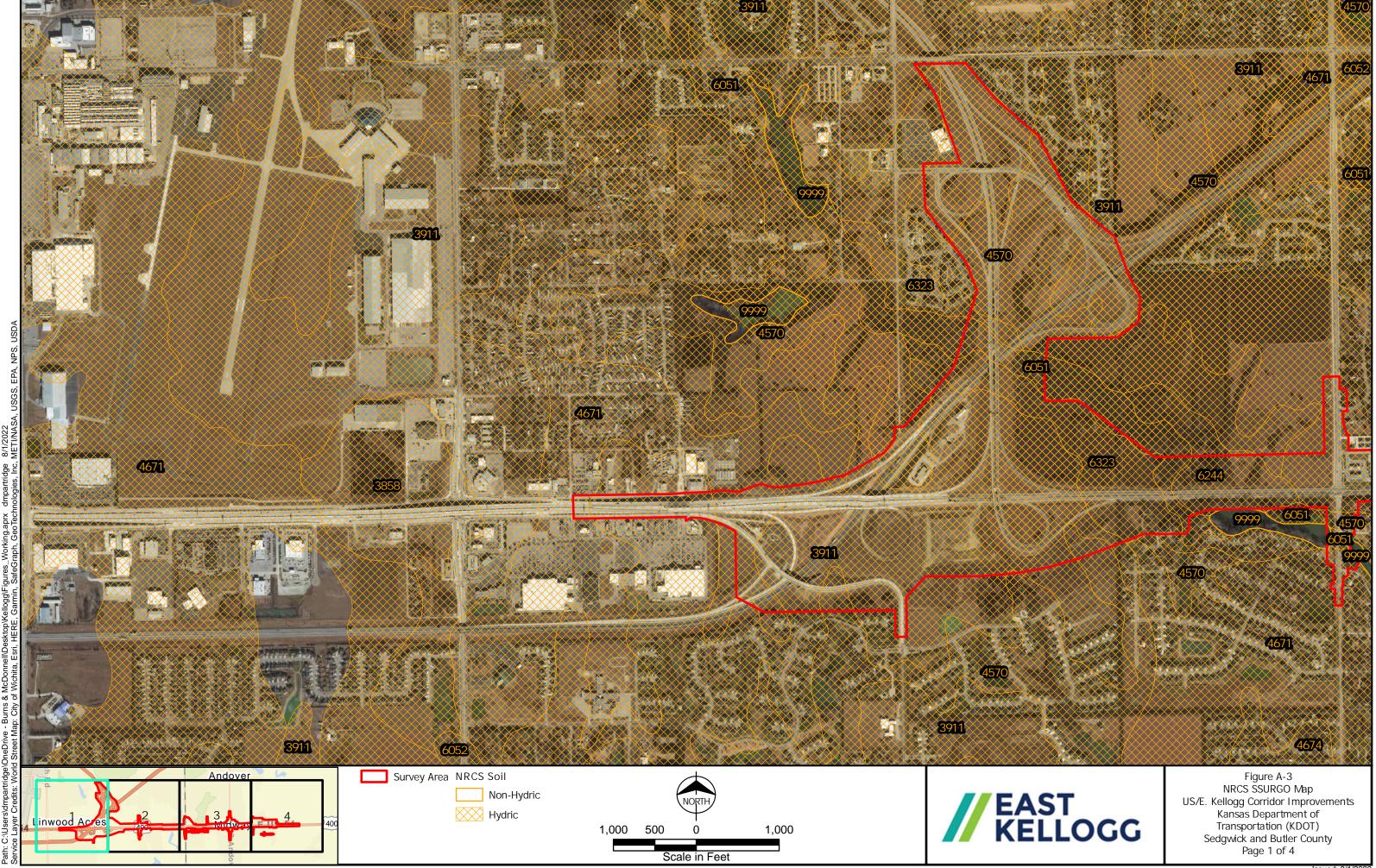


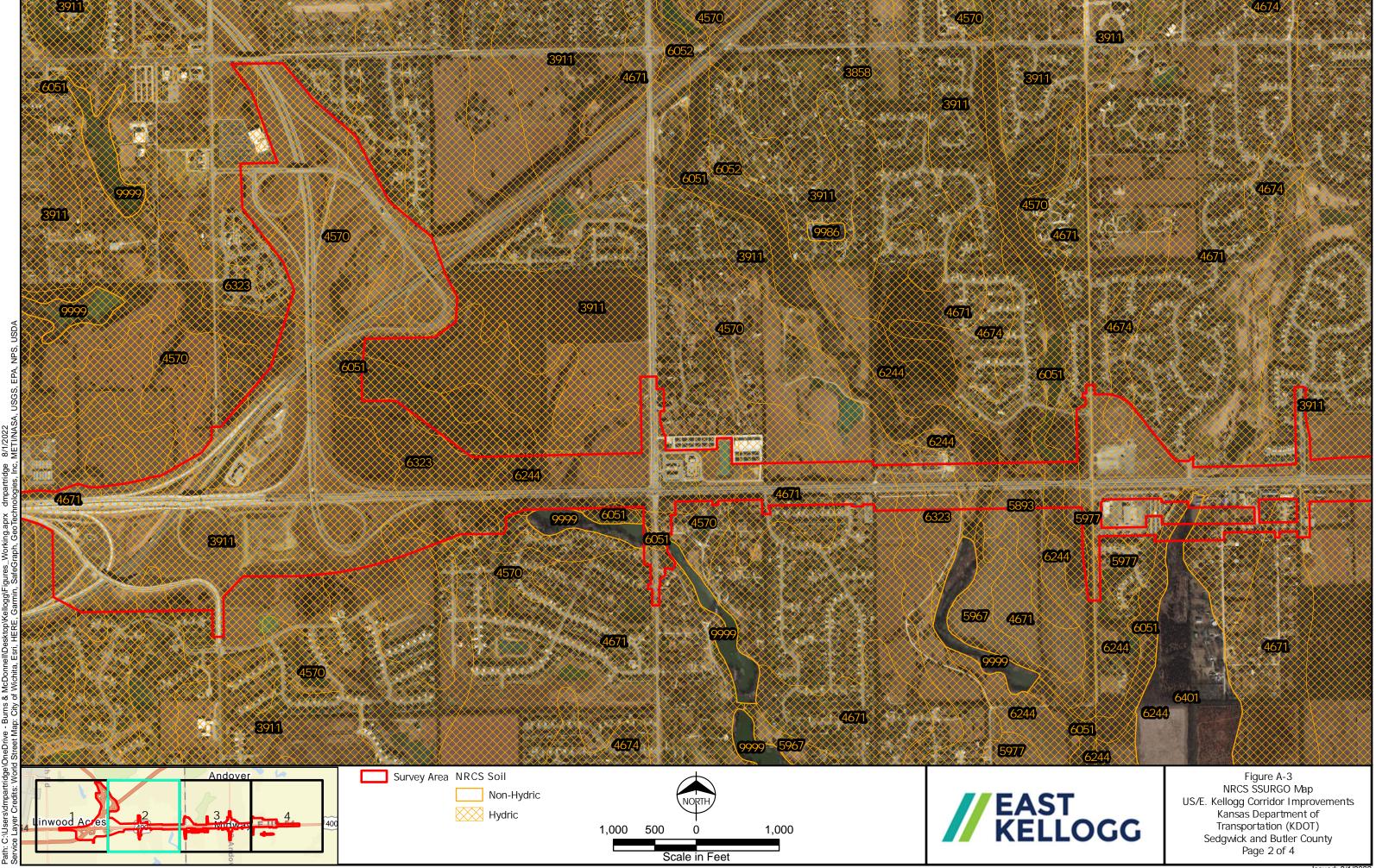


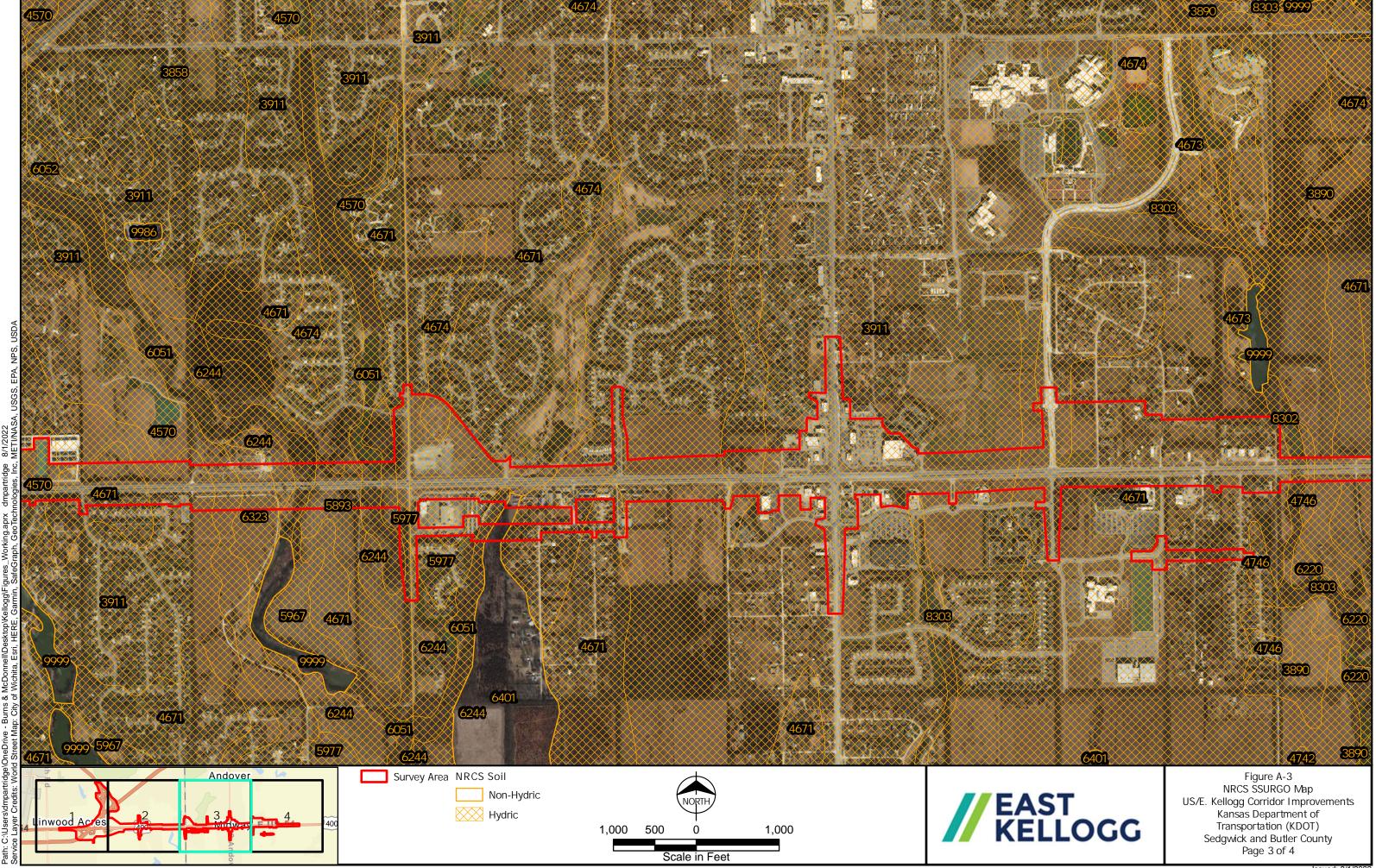


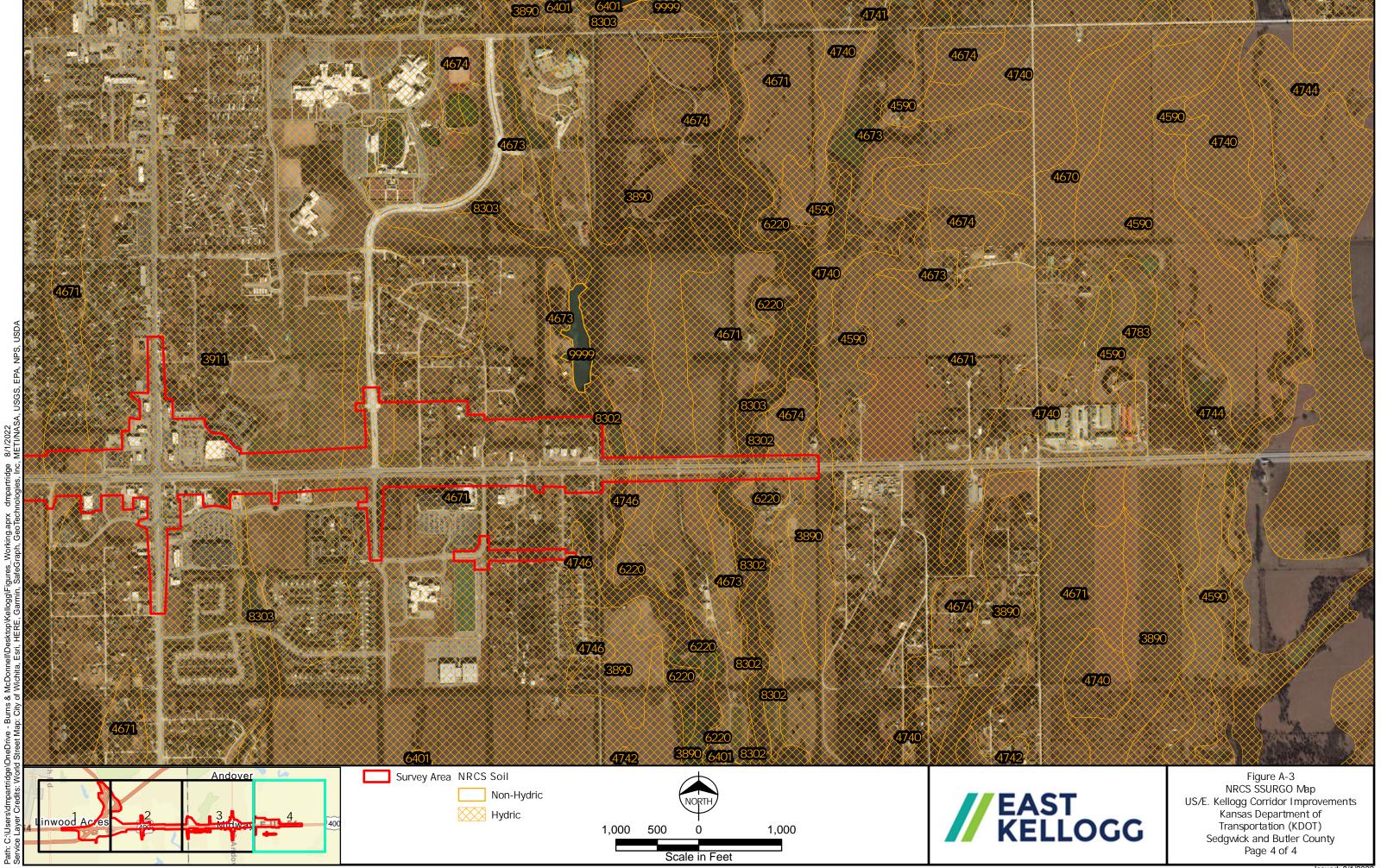












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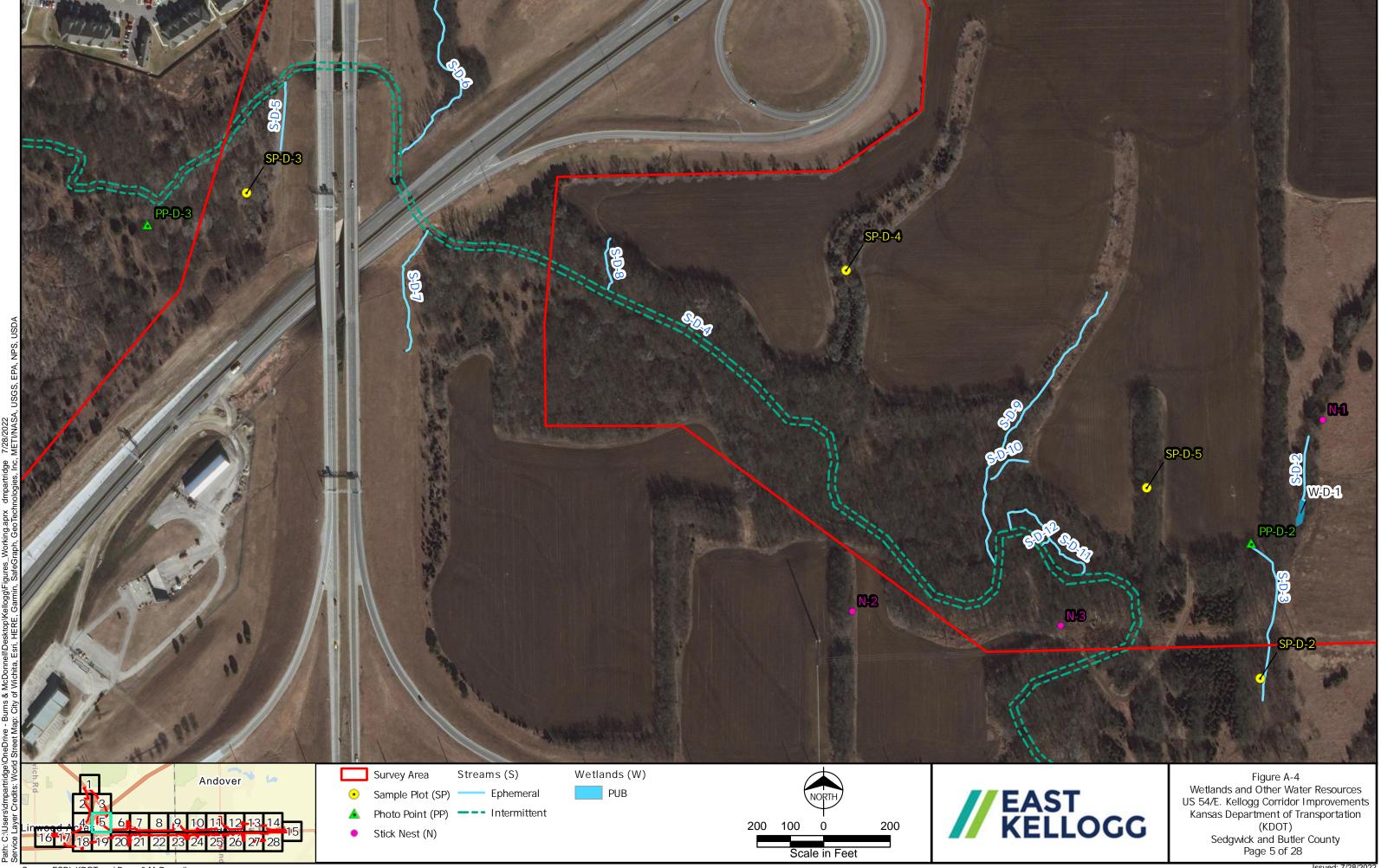
Scale in Feet

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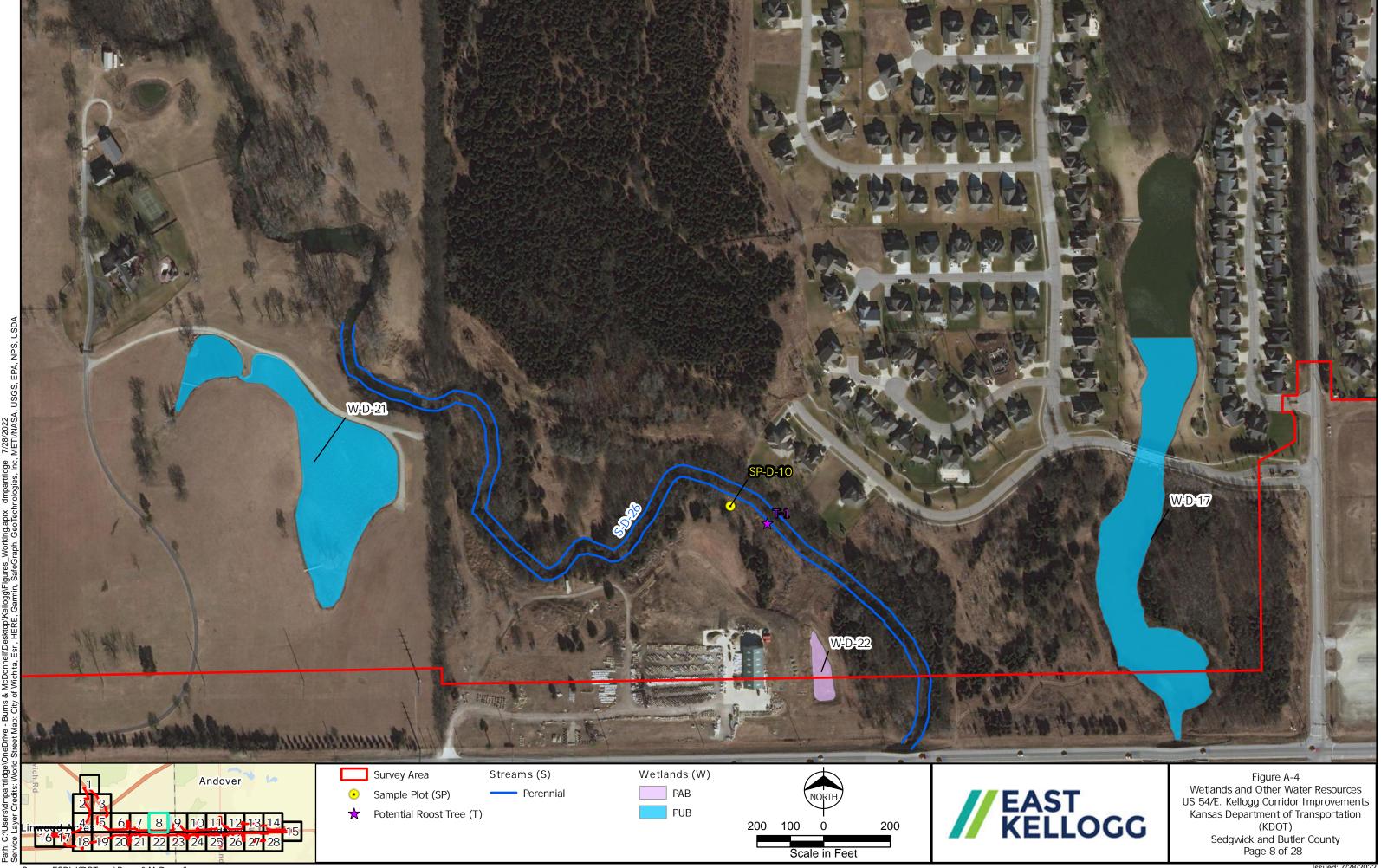


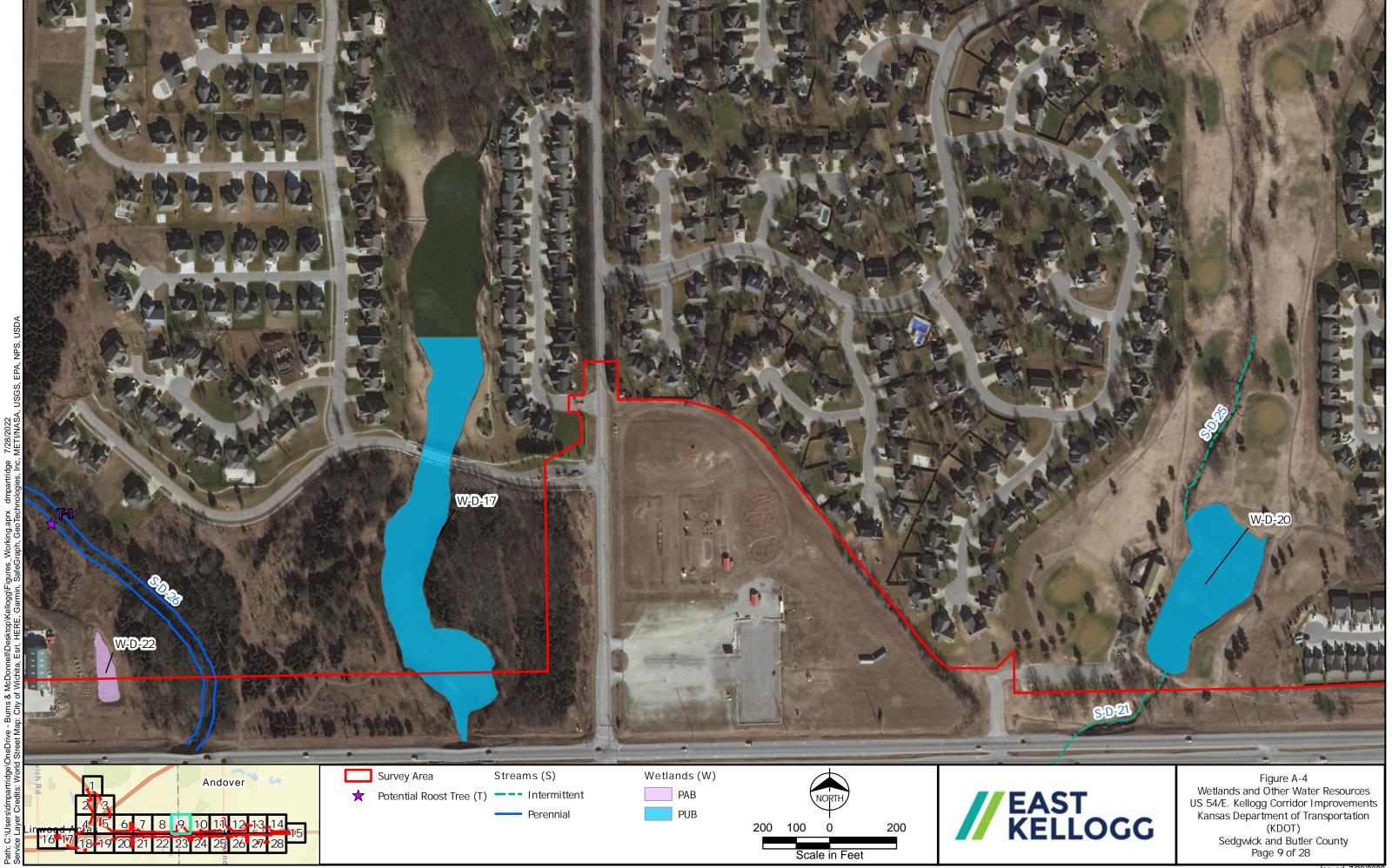


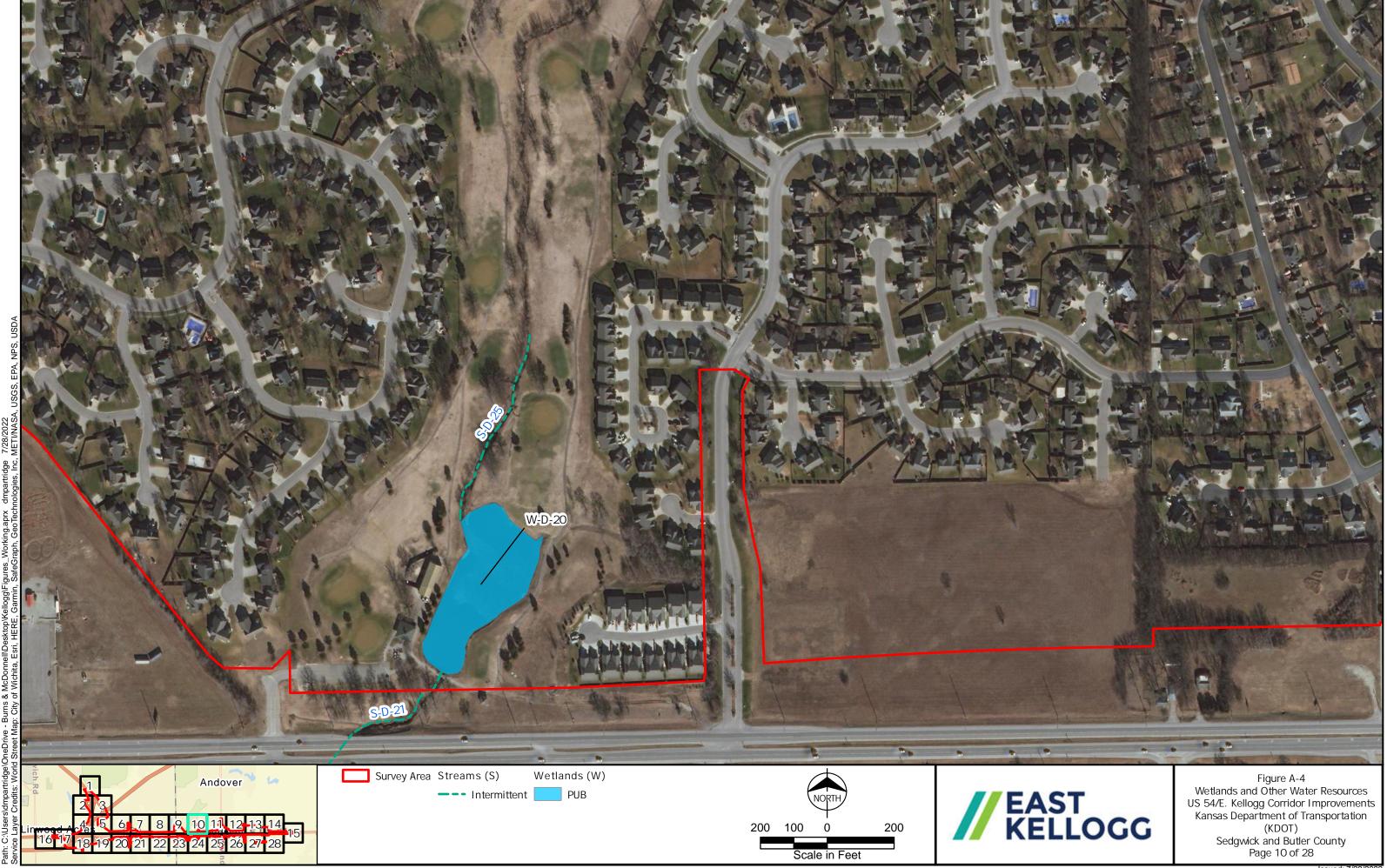


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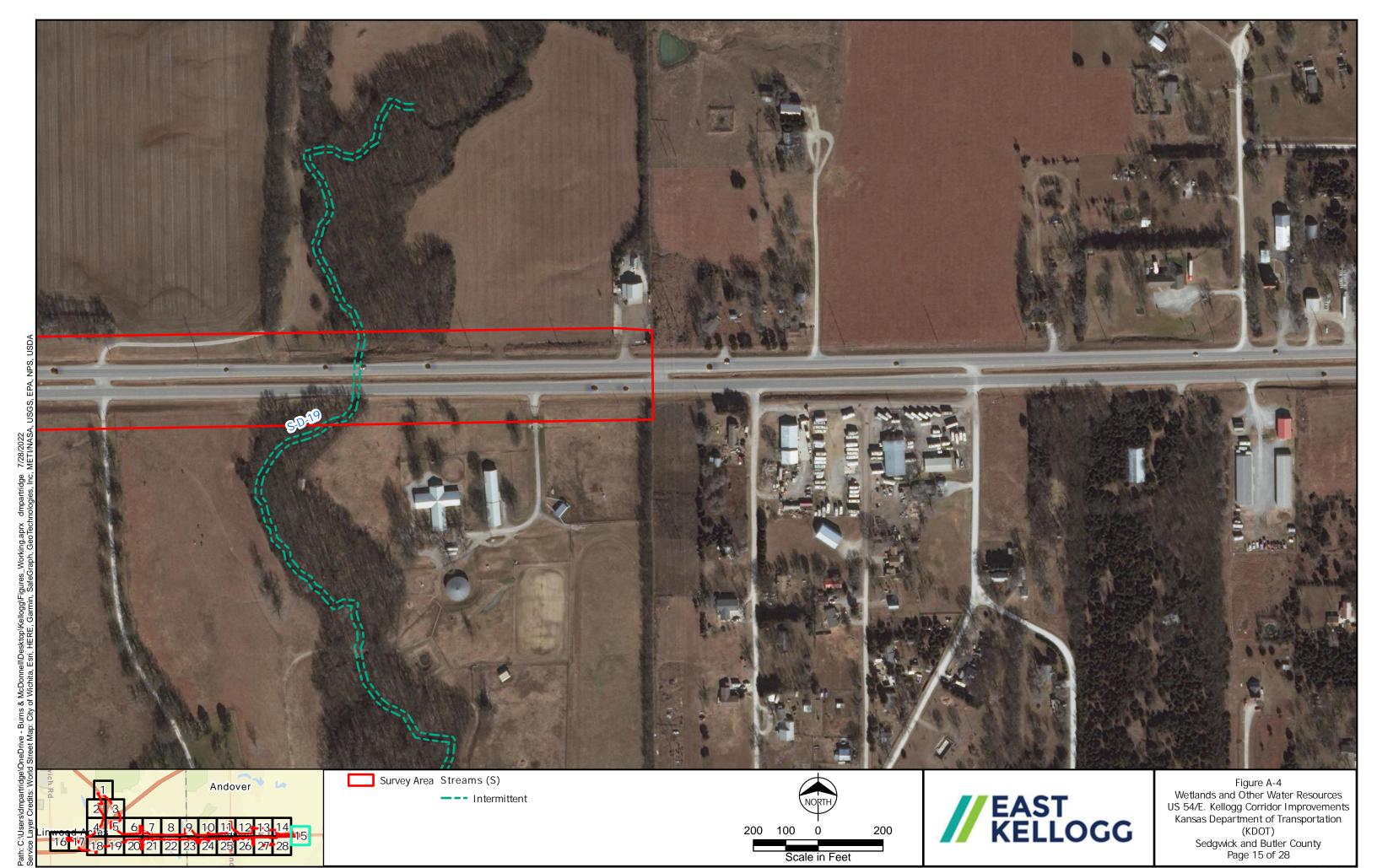


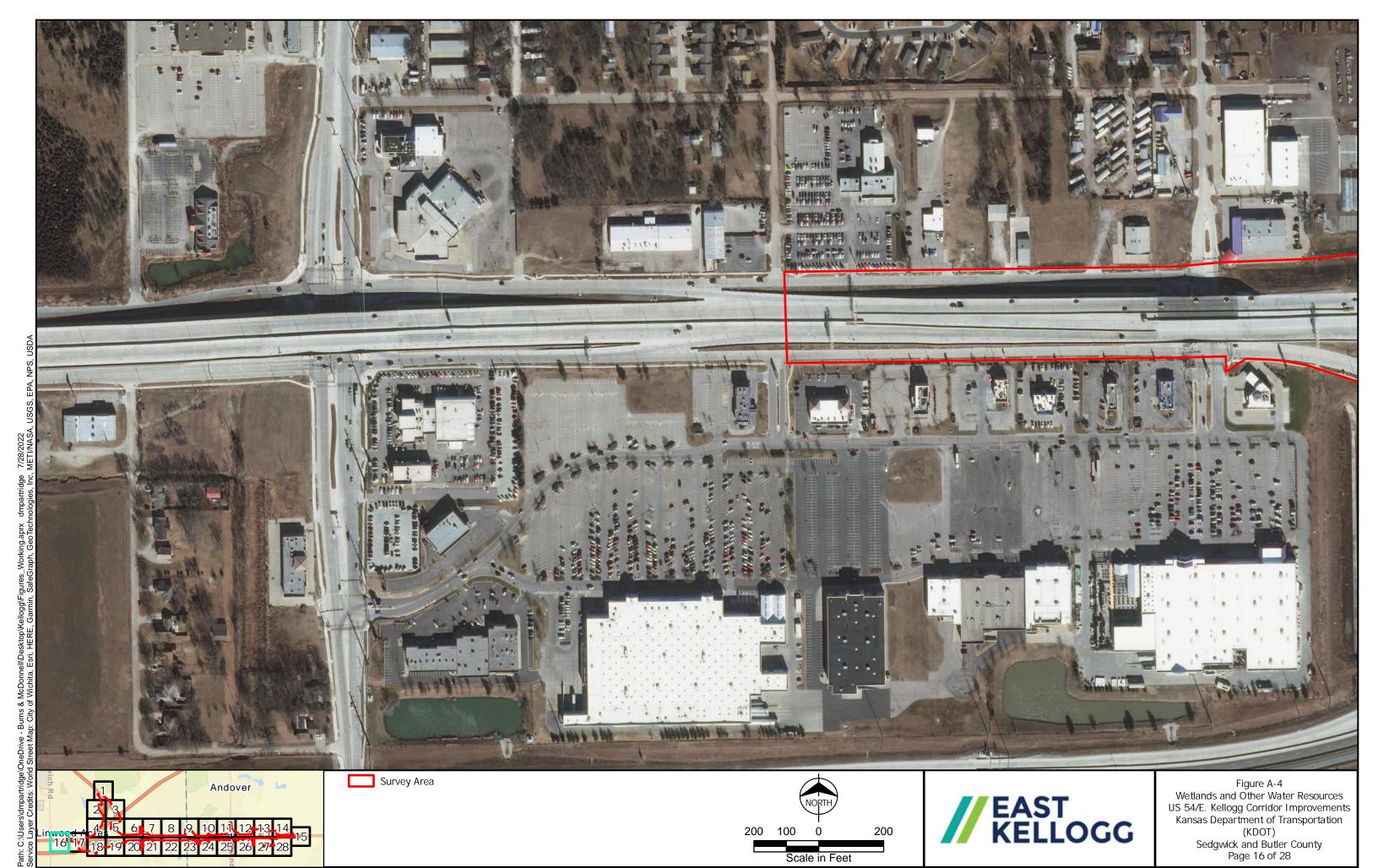










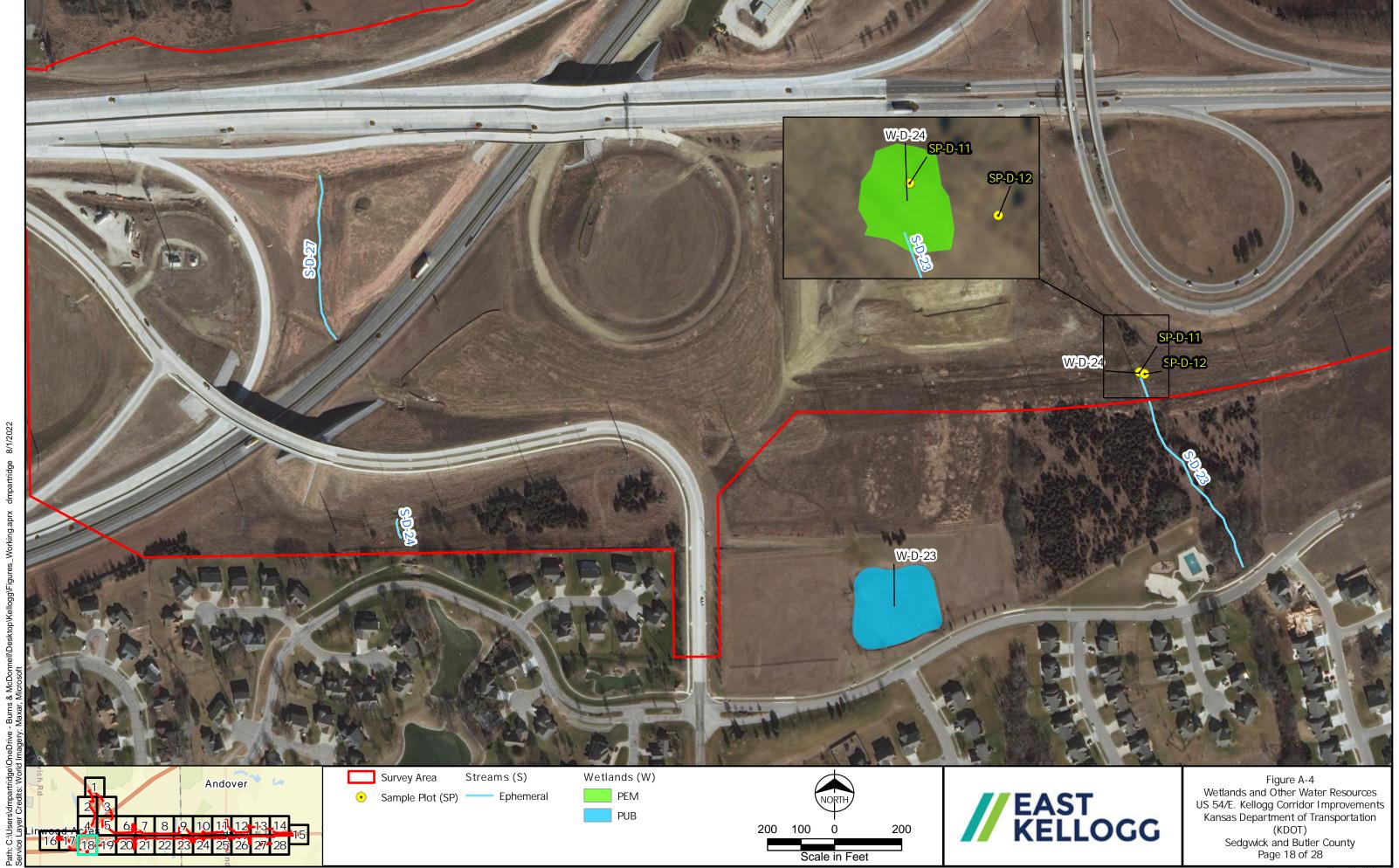


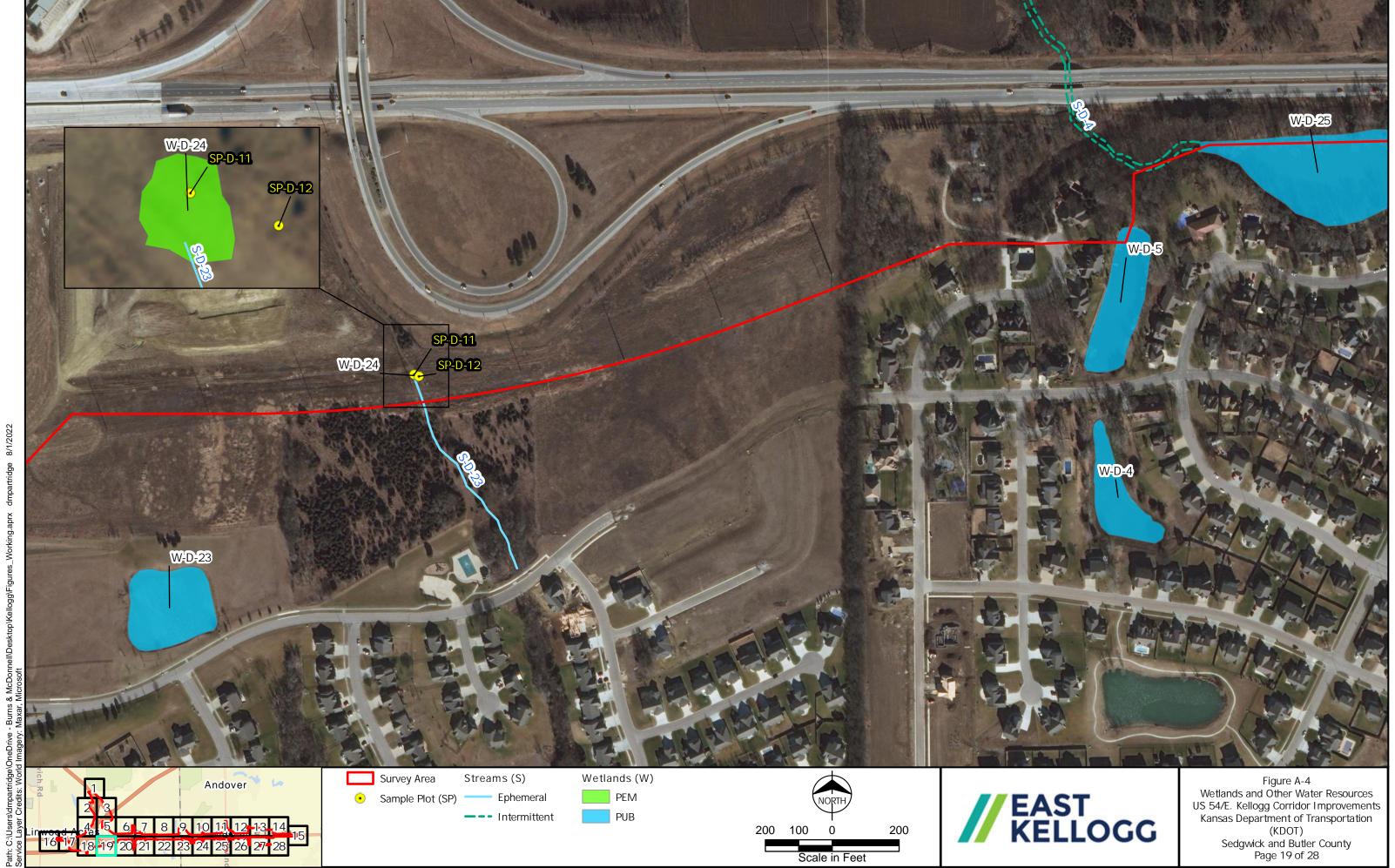
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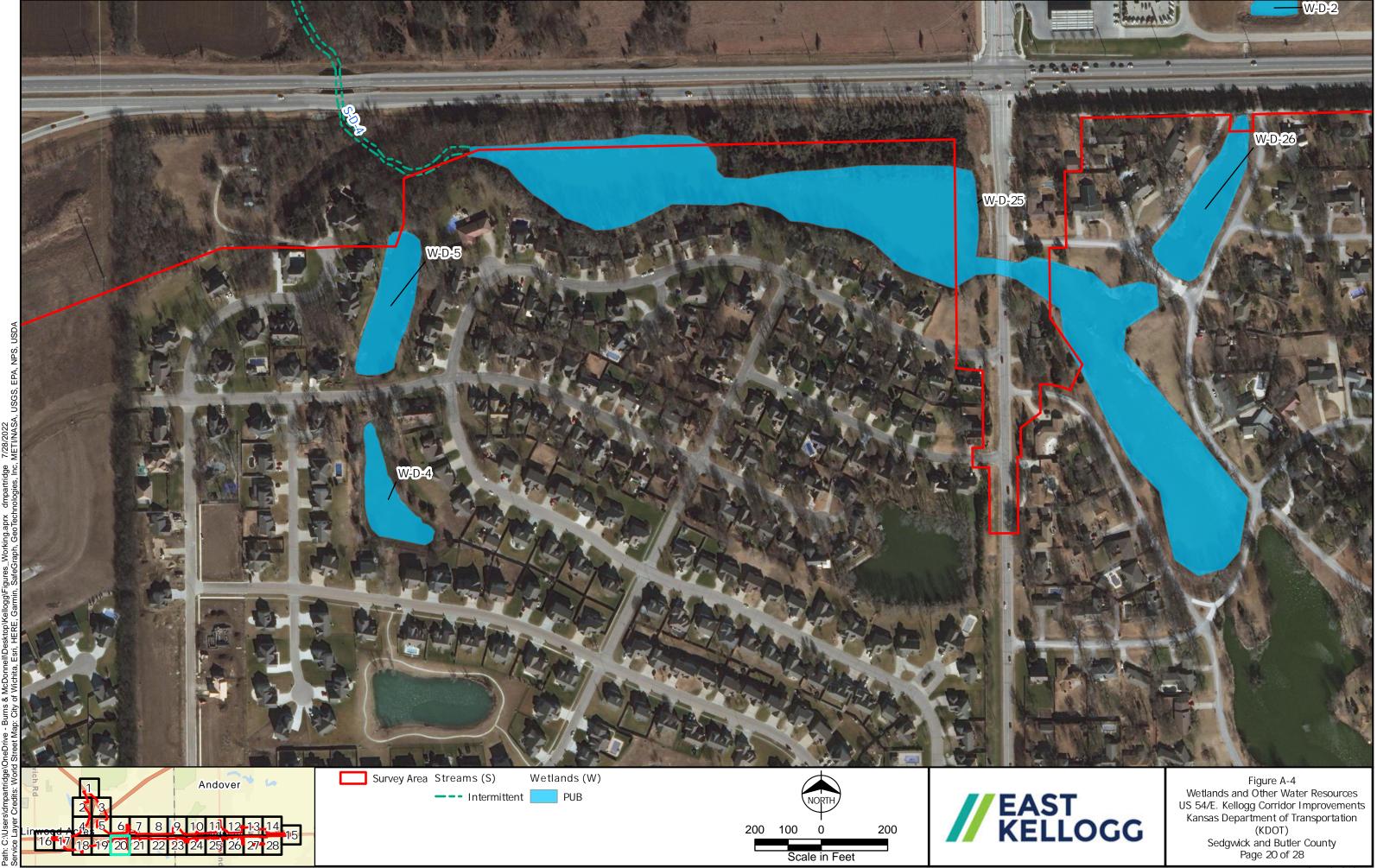
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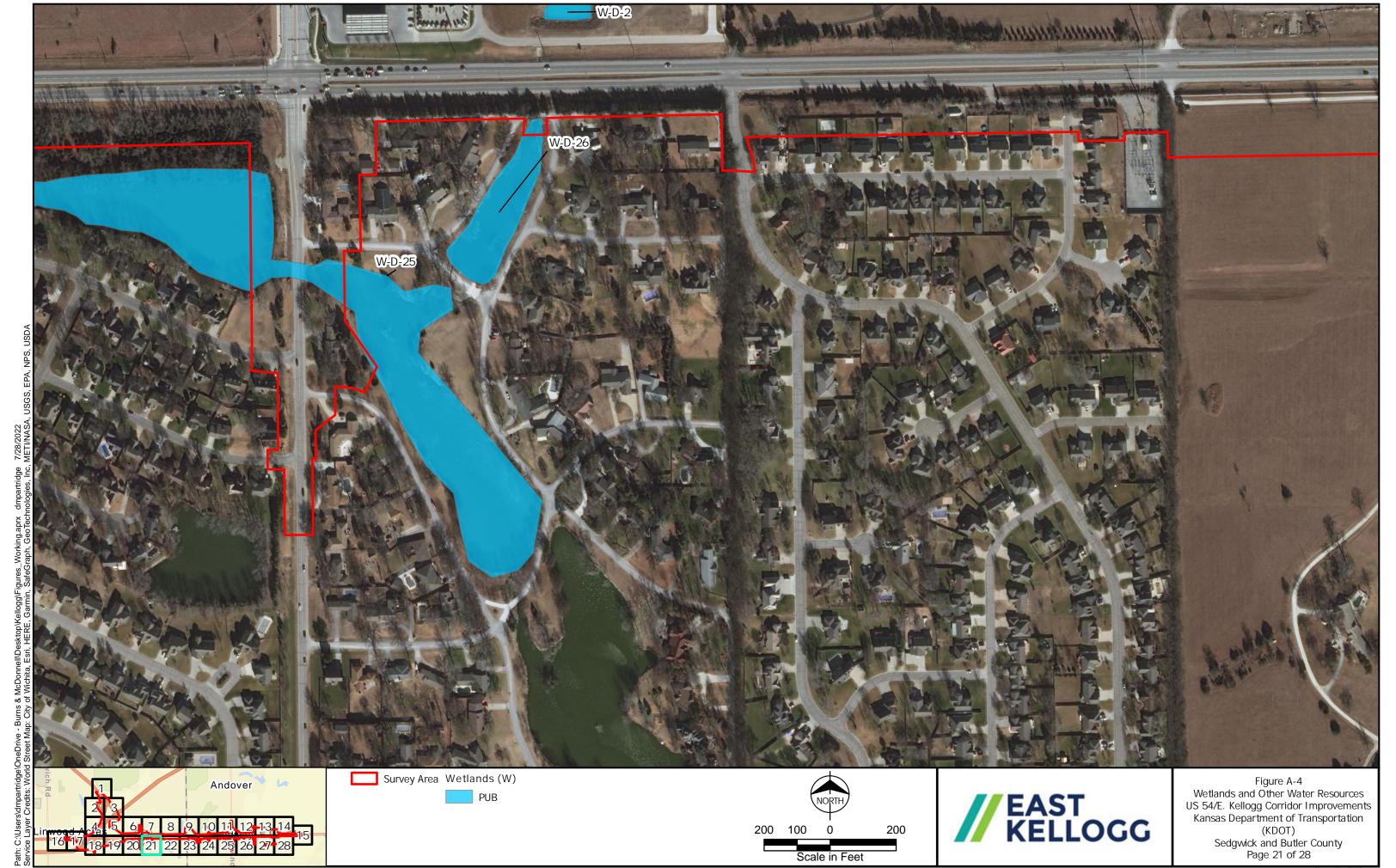
Source: ESRI, KDOT, and Burns & McDonnell

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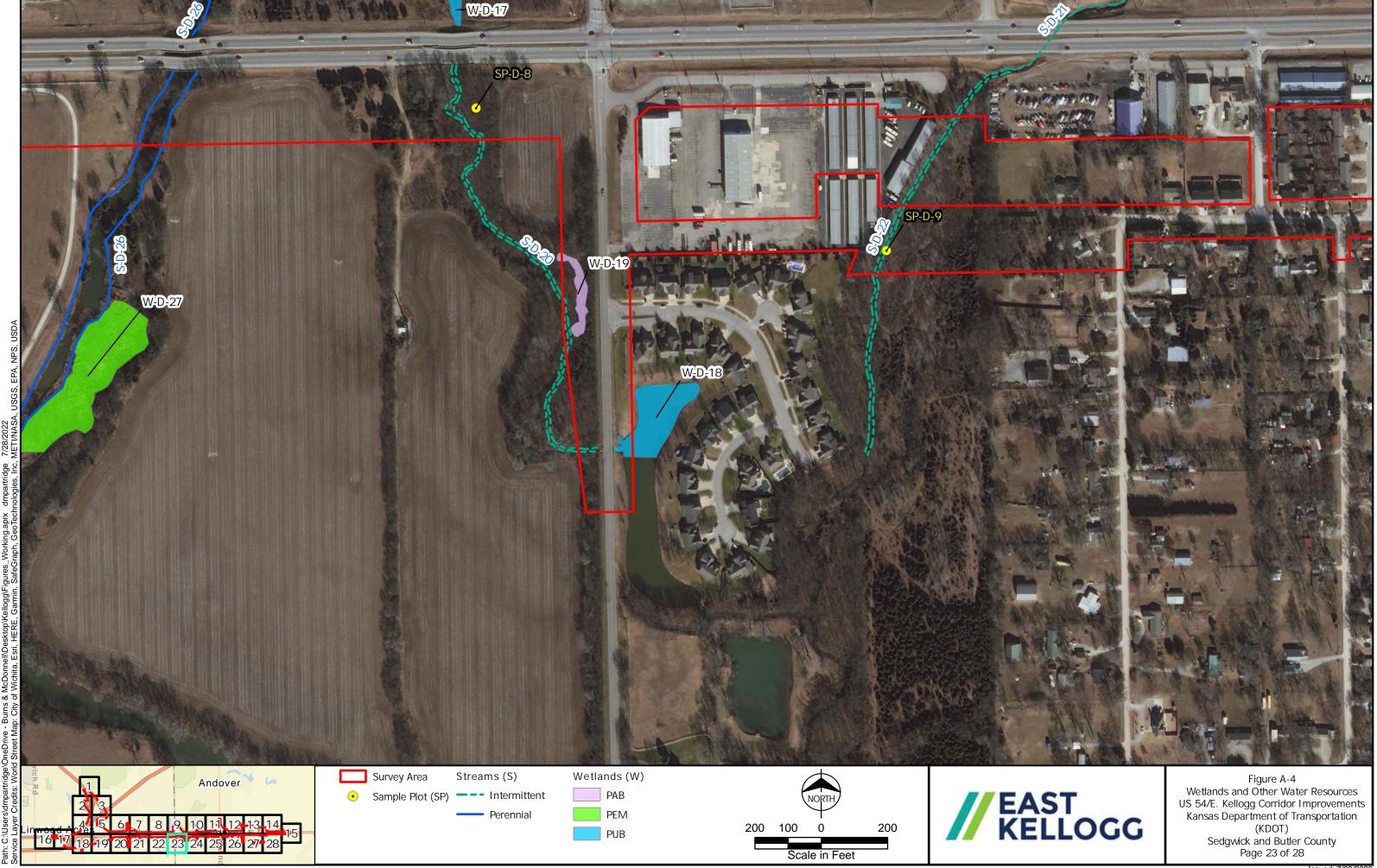




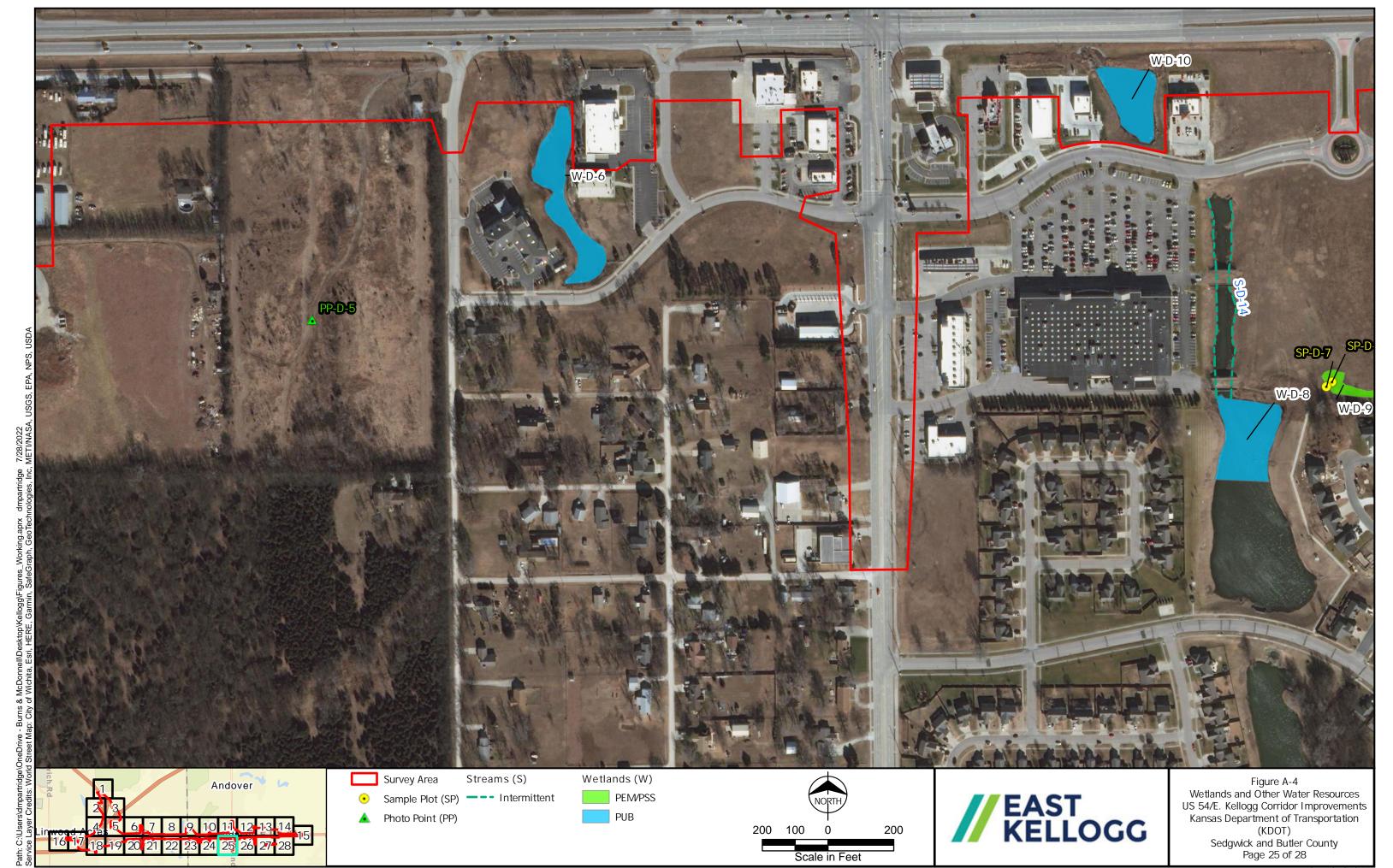


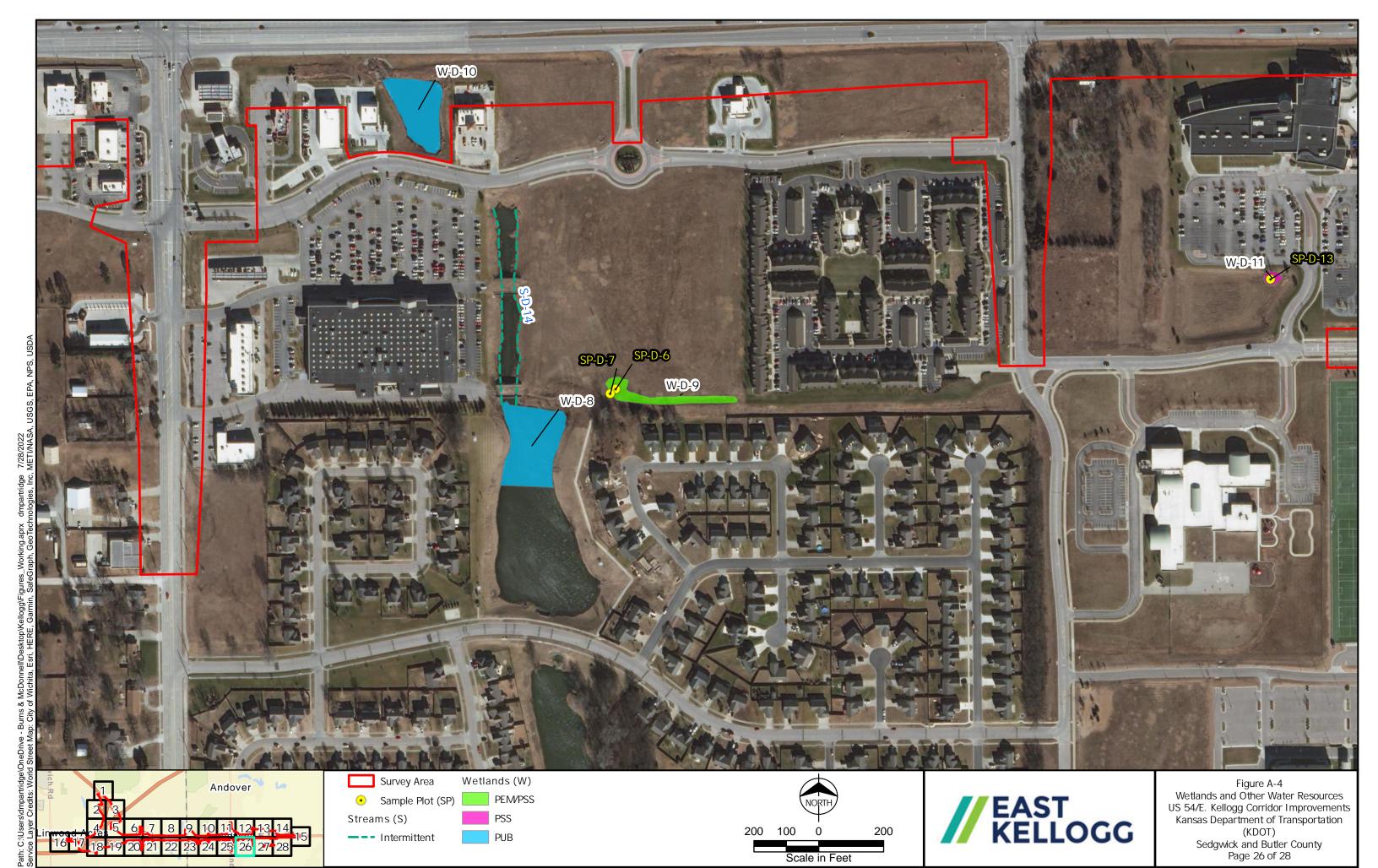


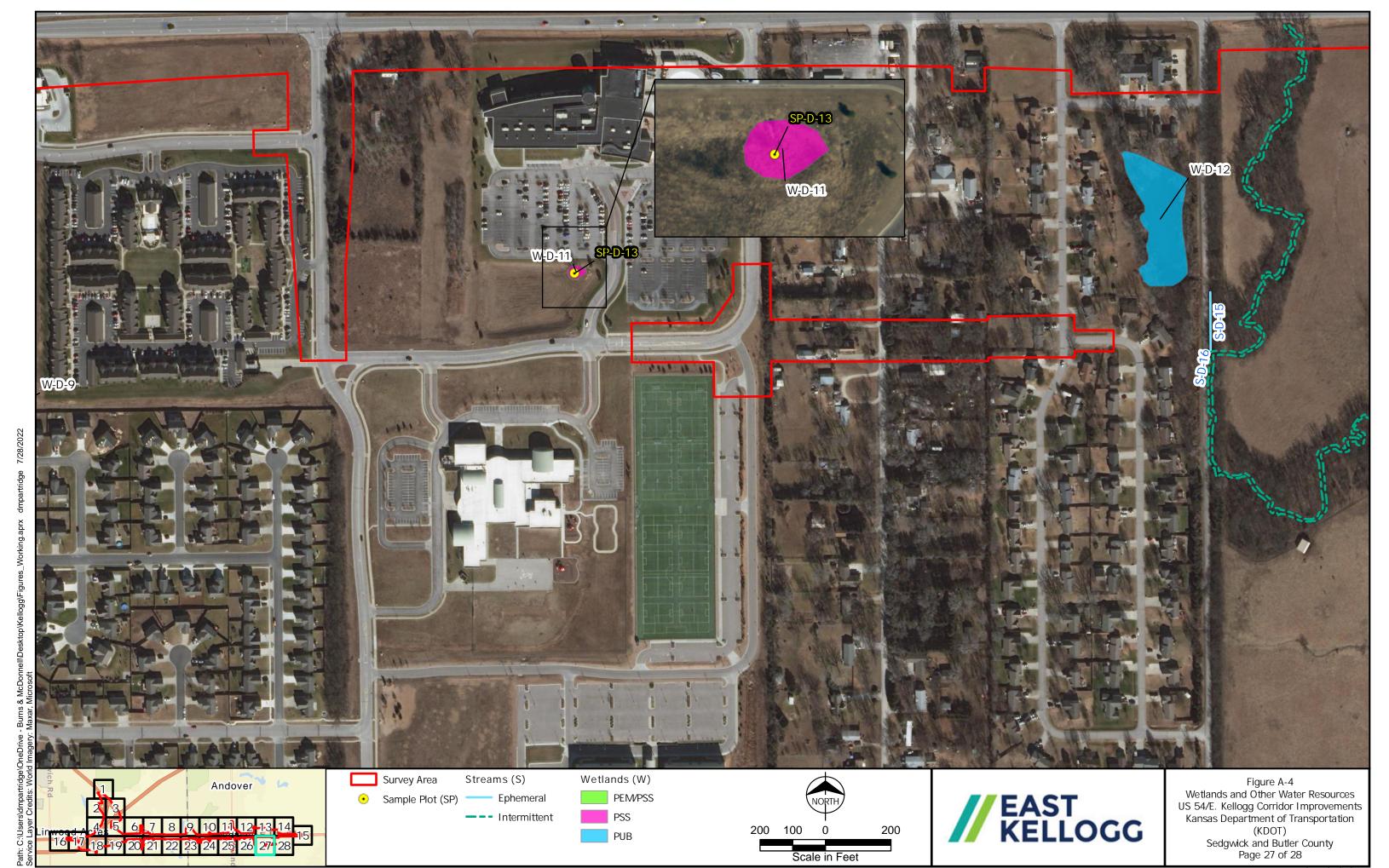
Source: ESRI, KDOT, and Burns & McDonnell Issued: 7/20















Appendix B -Routine Wetland Determination Data Forms, Midwest Region

Project/Site: US 54/E. Kellogg Corridor Improvemen	ts c	City/County	_{y:} Wichita/	/Sedgwick County	Sampling Date: 2022-05-31
Applicant/Owner: Kansas Department of Transportat	ion			State: Kansas	Sampling Point: SP-D-1
Investigator(s): D. Partridge, B. Timm		Section, To	ownship, Ra	nge: S24 T27S R2E	
Landform (hillslope, terrace, etc.): Depression					Slope (%): 1
Subregion (LRR): H 74	Lat: 37.6	6803055	5	Long: <u>-97.1702487</u>	Datum: NAD 83
Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 p					
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Yes _	No	(If no, explain in Ro	emarks.)
Are Vegetation, Soil, or Hydrology si	gnificantly o	disturbed?	Are "	'Normal Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology na	aturally prob	olematic?	(If ne	eeded, explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	howing	samplir	ng point l	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	· ·				
Hydric Soil Present? Yes No			he Sampled hin a Wetlar		No
Wetland Hydrology Present? Yes No	'	Witi	illi a vvetiai	iu: 165	
Remarks:					
Upland confirmation sample plot.					
VEGETATION – Use scientific names of plant	s.				
7. 0. (D. (2) 30 ft r	Absolute			Dominance Test works	sheet:
	% Cover			Number of Dominant Sp	
1 2				That Are OBL, FACW, of (excluding FAC-):	0 (A)
3				Total Number of Domina	ant
4				Species Across All Strat	_
	:		ver	Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size: 15 ft r	60	.,	UPL	That Are OBL, FACW, o	
1. Pyrus calleryana 2. Symphoricarpos orbiculatus	20		FACU	Prevalence Index work	ksheet:
			17.00	Total % Cover of:	Multiply by:
3				OBL species 0	x 1 = 0
5.					x 2 = 0
	80%	= Total Co	ver		x 3 = 0
Herb Stratum (Plot size: 5 ft r			FAOU		x 4 = 320
1. Cynodon dactylon			FACU	UPL species 60	
2				Column Totals: 140	(A) <u>620</u> (B)
3				Prevalence Index	= B/A = 4.43
4. 5.				Hydrophytic Vegetation	n Indicators:
6.				1 - Rapid Test for H	
7.				2 - Dominance Tes	
8				3 - Prevalence Inde	
9				4 - Morphological A data in Remarks	Adaptations ¹ (Provide supporting s or on a separate sheet)
10					ohytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r	60%	= Total Co	over		l and wetland hydrology must
1				be present, unless distu	
2.				Hydrophytic	
	:			Vegetation	s No
% Bare Ground in Herb Stratum 40				Present? Yes	s No
Remarks:					
No tests are met.					
See Photo C-1.					

Profile Desc	ription: (Describe	to the dept	h needed to docu	ment the	indicator	or confirn	n the absence o	f indicators.)	
Depth Matrix Redox Features									
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 20	10YR 4/2	90	10YR 6/4	10	С	PL / M	Silty Clay Loam		
	-								
-									
-						·			
		· ·			-				
		 ·		-	-				
		 		-	-				
	-				_				
					<u> </u>				
	oncentration, D=Dep		•			ed Sand G		tion: PL=Pore Lining, M=Matrix.	
-	Indicators: (Applic	able to all I	LRRs, unless othe	rwise not	ted.)		Indicators for	or Problematic Hydric Soils ³ :	
Histosol			Sandy 0	-				uck (A9) (LRR I, J)	
-	pipedon (A2)			Redox (St				rairie Redox (A16) (LRR F, G, H)	
Black Hi	stic (A3) n Sulfide (A4)			d Matrix (56) neral (F1)			rface (S7) (LRR G) ains Depressions (F16)	
	d Layers (A5) (LRR I	F)		-	atrix (F2)		_	R H outside of MLRA 72 & 73)	
	ick (A9) (LRR F, G,		<u>✓</u> Deplete				•	d Vertic (F18)	
	d Below Dark Surfac			Dark Surf	. ,			rent Material (TF2)	
	ark Surface (A12)	- (urface (F7)		allow Dark Surface (TF12)	
Sandy M	lucky Mineral (S1)		Redox I	Depressio	ns (F8)	,		Explain in Remarks)	
2.5 cm N	Mucky Peat or Peat (S2) (LRR G	6, H) High Pla	ains Depr	essions (F	16)	³ Indicators o	f hydrophytic vegetation and	
5 cm Mu	icky Peat or Peat (S	3) (LRR F)	(ML	.RA 72 &	73 of LRF	R H)	wetland	hydrology must be present,	
							unless c	listurbed or problematic.	
Restrictive I	_ayer (if present):								
Type:									
Depth (inc	ches):						Hydric Soil F	Present? Yes No	
Remarks:									
Indicato	r F3 is met.								
maioato									
HYDROLO	GY								
	drology Indicators:								
			li abaali all that anni				Casandan	uladiantera (minimum of tuo required)	
-	cators (minimum of c	ne required						y Indicators (minimum of two required)	
	Water (A1)		Salt Crust		(D40)			ce Soil Cracks (B6)	
	iter Table (A2)		Aquatic In					sely Vegetated Concave Surface (B8)	
Saturation			Hydrogen		, ,			age Patterns (B10)	
	arks (B1)		Dry-Seaso					zed Rhizospheres on Living Roots (C3)	
	nt Deposits (B2)		Oxidized F			ing Roots	. ,	ere tilled)	
-	posits (B3)			not tilled		4)		ish Burrows (C8)	
	at or Crust (B4)		Presence			4)		ation Visible on Aerial Imagery (C9)	
Iron Dep			Thin Muck				·	norphic Position (D2)	
·	on Vis ble on Aerial	magery (B7	') Other (Exp	olain in Re	emarks)		·	Neutral Test (D5)	
	tained Leaves (B9)						Frost-	Heave Hummocks (D7) (LRR F)	
Field Observ									
Surface Wate			No Depth (in						
Water Table			No Depth (in						
Saturation Pr		'es N	No Depth (in	ches):		Wetl	and Hydrology	Present? Yes No	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
	(00011)	J	J, aca.	,, p		, , ,			
Remarks:									
			_						
Indicato	r C3 and D2	are me	t.						

Project/Site: US 54/E. Kellogg Corridor Improvements	City/Co	ounty: V	Vichita/S	Sedgwick Cou	nty Samp	oling Date: 2022-	05-31
Applicant/Owner: Kansas Department of Transportation	1			State: Ka	nsas _{Samp}	oling Point: SP-D-	2
Investigator(s): D. Partridge, B. Timm	Sectio	n, Towns	ship, Rang	ge: S23 T27S	R2E		
Landform (hillslope, terrace, etc.): Plateau						Slope (%):	0
Subregion (LRR): H74	at: 37.6804	1471		Long: -97.176	3185	Datum: NA	D 83
Soil Map Unit Name: 6244 - Elandco silt loam, rarely floor							
Are climatic / hydrologic conditions on the site typical for this time							
Are Vegetation, Soil, or Hydrology signifi	-					t? Yes No	, /
Are Vegetation, Soil, or Hydrology natura							
SUMMARY OF FINDINGS – Attach site map sho							s, etc.
Hydrophytic Vegetation Present? Yes No	~						
Hydric Soil Present? Yes No	<u></u>		Sampled A		es	No. V	
Hydrophytic Vegetation Present? Yes No	<u>~</u>	within a	a Wetland	1? Y	es	NO	
Remarks:							
Upland confirmation sample plot.							
VEGETATION – Use scientific names of plants.							
	solute Dom			Dominance Te	st worksheet:	<u> </u>	
,	Cover Spec			Number of Dom			
1. Celtis occidentalis 2. Maclura pomifera 30		<u> </u>		That Are OBL, F (excluding FAC		0	(A)
		<u> </u>	ACU_	,	•		(* .)
3				Total Number of Species Across		4	(B)
	0% = Tota	al Cover		Percent of Dom			` ,
Sapling/Shrub Stratum (Plot size: 15 ft r				That Are OBL, F): <u>0</u>	(A/B)
1. Symphoricarpos orbiculatus 3.	<u> 5 </u>	<u> </u>	ACU_	Prevalence Ind	ov workshoo	4 •	
2					ver of:		
3				OBL species		x 1 = 0	
4						x 2 = 0	
5	5% = Tota	ol Cover				x 3 = 0	
Herb Stratum (Plot size: 5 ft r	<u> </u>	ai Covei		FACU species		x 4 = <u>580</u>	_
1. Elymus canadensis 50)	<u> </u>	ACU	•	0	x 5 = 0	_
2				Column Totals:	145	(A) <u>580</u>	_ (B)
3				Prevalenc	e Index = B/A	_{4.00}	
4				Hydrophytic Vo		·	
5					_	hytic Vegetation	
6				2 - Domina	nce Test is >5	0%	
7				3 - Prevalei	nce Index is ≤	3.0 ¹	
9.				4 - Morphol	ogical Adapta	tions ¹ (Provide supp	oorting
10						a separate sheet) Vegetation ¹ (Explai	n)
50	0% = Tota	al Cover					
Woody Vine Stratum (Plot size: 30 ft r) 1				'Indicators of hy be present, unle		vetland hydrology nor problematic.	ıust
2				Hydrophytic			
	= Tota			Vegetation Present?	Yes	No	
% Bare Ground in Herb Stratum 45 Remarks:							
No tests are met.							
See Photo C-2.							

Profile Desc	ription: (Describe	to the depth i	needed to docur	nent the i	indicator	or confir	n the absence of in	dicators.)	
Depth	Matrix			x Feature		. 2			
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0 - 18	10YR 4/3	100					Silty Clay Loam		
-									
-									
	-				. ———				
-									
_									
17 0-0.		minting DM-Da	alused Metric CC		d == O==4=		21	DI - Dava Limina M-Matrix	
	oncentration, D=De Indicators: (Appli					ed Sand G		Problematic Hydric Soils ³ :	
-		cable to all Liv						•	
Histosol	oipedon (A2)		Sandy (Redox (S5			1 cm Muck	ie Redox (A16) (LRR F, G, H)	
Black Hi			-	d Matrix (S				ce (S7) (LRR G)	
	en Sulfide (A4)			•	neral (F1)			Depressions (F16)	
	d Layers (A5) (LRR	F)	-	Gleyed Ma			-	outside of MLRA 72 & 73)	
	ıck (A9) (LRR F, G ,		-	d Matrix (Reduced Ve	,	
Depleted	d Below Dark Surfa	ce (A11)	Redox [Dark Surfa	ace (F6)		Red Parent	Material (TF2)	
	ark Surface (A12)				urface (F7)		w Dark Surface (TF12)	
-	flucky Mineral (S1)	(00) (I - I		Depressio				ain in Remarks)	
	Mucky Peat or Peat				essions (F			drophytic vegetation and	
5 cm ivit	icky Peat or Peat (S	53) (LKK F)	(IVIL	KA /2 &	73 of LRR	(H)	-	rology must be present, rbed or problematic.	
Restrictive I	Layer (if present):						uniess dista	indea of problematic.	
Type:	Layer (ii present).								
	ches):						Hydric Soil Pres	sent? Yes No	
			_				Trydric 30ii Fres	nent: 1es No	
Remarks:									
No indic	ators are me	et.							
HYDROLO	GY								
Wetland Hy	drology Indicators	:							
	cators (minimum of		heck all that appl	v)			Secondary In	dicators (minimum of two required)	
-	Water (A1)		Salt Crust				·	Soil Cracks (B6)	
	iter Table (A2)		Aquatic In		es (B13)			Vegetated Concave Surface (B8)	
Saturation	` ,		Hydrogen		, ,			Patterns (B10)	
l —	larks (B1)		Dry-Seaso			ı		Rhizospheres on Living Roots (C3)	
· ——	nt Deposits (B2)		Oxidized F						
	posits (B3)			not tilled)		J	Crayfish	,	
-	at or Crust (B4)		Presence			4)	 ,	n Visible on Aerial Imagery (C9)	
Iron Dep	• •		Thin Muck		`	,		phic Position (D2)	
	on Vis ble on Aerial	Imagery (B7)	Other (Exp					itral Test (D5)	
	tained Leaves (B9)				,			ave Hummocks (D7) (LRR F)	
Field Obser								, , , , , , , , , , , , , , , , , , , ,	
Surface Wate	er Present?	Yes No	Depth (in	ches):					
Water Table			Depth (in						
Saturation P			Depth (in				land Hydrology Pre	esent? Yes No	
(includes cap		165 110	Deptil (iii	ciies)		_ ****	iana riyarology r re	isent: res NO	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
No india	atore are m	nt.							
אוטוווטונ	ators are me	ฮเ.							

Project/Site: US 54/E. Kellogg Corridor Improvement	s Ci	ity/County:	Wichita/	Sedgwick County	Sampling Date: 2022-05-31
Applicant/Owner: Kansas Department of Transportation	on			State: Kansas	Sampling Point: SP-D-3
Investigator(s): D. Partridge, B. Timm	Sc	ection, Tov	vnship, Rar	nge: S23 T27S R2E	
Landform (hillslope, terrace, etc.): Depression					Slope (%): 1
Subregion (LRR): H 74	Lat: 37.6	844661		Long: -97.1866413	Datum: NAD 83
Soil Map Unit Name: 6051 - Elandco silt loam, frequen					
Are climatic / hydrologic conditions on the site typical for this t					
Are Vegetation, Soil, or Hydrologysig	-				resent? Yes No
Are Vegetation, Soil, or Hydrology nat				eded, explain any answer	
SUMMARY OF FINDINGS – Attach site map sl					
Hydrophytic Vegetation Present? Yes No	~				
	~		e Sampled		No
Hydric Soil Present? Yes No		withi	n a Wetlan	d? fes	NO
Remarks:		•			
Upland confirmation sample plot.					
VEGETATION – Use scientific names of plants	5.				
20.6	Absolute I			Dominance Test works	sheet:
,	% Cover			Number of Dominant Sp	
1. Maclura pomifera				That Are OBL, FACW, of (excluding FAC-):	or FAC (A)
2				,	
3				Total Number of Domina Species Across All Strate	_
	50% =	Total Cov	er	Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 15 ft r)				That Are OBL, FACW, of	
1. Symphoricarpos orbiculatus	25		FACU	Prevalence Index work	vshoot:
2		<u> </u>		Total % Cover of:	
3					x = 0
4					x 2 = 0
5	25% =	Total Cov			x 3 = 0
Herb Stratum (Plot size: 5 ft r		Total Cov	eı		
1. Elymus canadensis	70	✓	FACU	UPL species 0	x 5 = 0
2				Column Totals: 145	(A) <u>580</u> (B)
3				Prevalence Index	= B/A = 4.00
4				Hydrophytic Vegetatio	·
5				1 - Rapid Test for H	
6				2 - Dominance Tes	t is >50%
7				3 - Prevalence Inde	ex is ≤3.0 ¹
8				4 - Morphological A	daptations ¹ (Provide supporting
10.					s or on a separate sheet) ohytic Vegetation¹ (Explain)
	70% =	Total Cov	er		
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must irbed or problematic.
2.				Hydrophytic	
	=			Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum 35				11030111: 163	
No tests are met.					
See Photo C-3.					

	cription: (Describe	to the depth r				or confirm	the absence of	f indicators.)	
Depth (inches)	Matrix	<u></u> %		x Feature	S Type ¹	Loc ²	Toytura	Dom	orko
(inches) 0 - 16	Color (moist) 10YR 4/3		Color (moist)	%	туре	LOC	Texture Silty Clay Loam	Rem	aiks
0 - 10	101K 4/3	_ 100 _		-			Sitty Clay Loani		
	-								
-									
-					<u> </u>				
	-								
		 							
	oncentration, D=De					d Sand Gr		tion: PL=Pore Lin	
-	Indicators: (Applie	cable to all LR						or Problematic H	
Histosol				Gleyed Ma				ck (A9) (LRR I, J)	
	pipedon (A2)		-	Redox (St				rairie Redox (A16)	
	istic (A3) en Sulfide (A4)			d Matrix (S	neral (F1)			face (S7) (LRR (ins Depressions (
	d Layers (A5) (LRR	F)	-	Gleyed M			_	H outside of ML	
	uck (A9) (LRR F, G,	•		d Matrix (•	Vertic (F18)	11 T G 10)
	d Below Dark Surface			Dark Surfa				ent Material (TF2)	
Thick Da	ark Surface (A12)		Deplete	d Dark Su	urface (F7)			allow Dark Surface	•
	Mucky Mineral (S1)			Depressio				xplain in Remarks	•
	Mucky Peat or Peat				essions (F			hydrophytic vege	
5 cm Mi	ucky Peat or Peat (S	63) (LRR F)	(ML	RA 72 &	73 of LRR	H)		nydrology must be	
Restrictive	Layer (if present):						uniess a	isturbed or proble	mauc.
	ompact Soil								
, . <u> </u>	ches): 16		_				Hydric Soil P	resent? Yes	No 🗸
Remarks:			_				Tiyane con i	resent: res_	
			. •					40: 1	
		iuitipie ioca	tions were a	ttempte	ea, now	ever, ex	cavation bei	ow 16 inches	was prevented
by compa	act soil.								
HYDROLO	GY								
Wetland Hy	drology Indicators	:							
Primary Indi	cators (minimum of	one required; c	heck all that appl	y)			Secondary	Indicators (minim	num of two required)
Surface	Water (A1)		Salt Crust	(B11)			Surfac	ce Soil Cracks (B6	5)
High Wa	ater Table (A2)		Aquatic In	vertebrate	es (B13)		Spars	ely Vegetated Co	ncave Surface (B8)
Saturati	on (A3)		Hydrogen	Sulfide O	dor (C1)		Draina	age Patterns (B10)
Water M	/larks (B1)		Dry-Seaso	on Water ⁻	Table (C2)		Oxidiz	ed Rhizospheres	on Living Roots (C3
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	eres on Livi	ing Roots ((C3) (who	ere tilled)	
Drift De	posits (B3)		(where i	not tilled))			sh Burrows (C8)	
_	at or Crust (B4)		Presence			-)		ation Visible on Ae	
Iron Dep			Thin Muck					orphic Position (D	92)
	ion Vis ble on Aerial	Imagery (B7)	Other (Exp	olain in Re	emarks)			Neutral Test (D5)	
	Stained Leaves (B9)						Frost-	Heave Hummocks	s (D7) (LRR F)
Field Obser									
Surface Wat			Depth (in						
Water Table			Depth (in						
	pillary fringe)		Depth (in					Present? Yes _	No
Describe Re	ecorded Data (stream	n gauge, monito	oring well, aerial _l	photos, pr	revious ins	pections),	it available:		
Remarks:									
Indicato	or D2 is met.								

Project/Site: US 54/E. Kellogg Corridor Improvement	ents	City/Co	_{unty:} Wichit	:a/Sedgwick County	Sampling Date: 2022-05-31
Applicant/Owner: Kansas Department of Transport	ation		-	State: Kansas	Sampling Point: SP-D-4
Investigator(s): D. Partridge, B. Timm				Range: S23 T27S R2E	
					e Slope (%): 1
Subregion (LRR): H 74	Lat: 37.	.68384	430	Long: <u>-97.1802887</u>	Datum: NAD 83
Soil Map Unit Name: 4570 - Clime silty clay, 3 to 7					
Are climatic / hydrologic conditions on the site typical for the					
Are Vegetation, Soil, or Hydrology	significantly	disturbe	ed? Are	e "Normal Circumstances" r	oresent? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blemati		needed, explain any answe	
SUMMARY OF FINDINGS – Attach site map				locations, transects	, important features, etc
Hydrophytic Vegetation Present? Yes I	No 🗸		la tha Camani		
Hydric Soil Present? Yes I	No 🔽		Is the Sample within a Wetl		No 🗸
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes Pemarks:	No		within a wet		
Remarks:					
Upland confirmation sample plot.					
VEGETATION – Use scientific names of plan	nts.				
70 (7) (7) (7) (7) (7) (7) (7) (7) (7) (7)			nant Indicator		sheet:
Tree Stratum (Plot size: 30 ft r			es? Status UPL	- Number of Dominant S	•
Juniperus virginiana				_ That Are OBL, FACW, (excluding FAC-):	0 (A)
2				Total Number of Domin	nant
4				Species Across All Stra	_
	15%	= Total	Cover	Percent of Dominant S	necies
Sapling/Shrub Stratum (Plot size: 15 ft r)	20		FACU	That Are OBL, FACW,	
1. Symphoricarpos orbiculatus			FACU	Prevalence Index wor	ksheet:
2				Total % Cover of:	Multiply by:
3				OBL species 0	x 1 = 0
5					x 2 = 0
	20%	= Total	Cover		x 3 = 0
Herb Stratum (Plot size: 5 ft r)	00		EACH		
Bromus pubescens Solidago canadensis	<u>60</u> 15		FACU FACU	UPL species 15 Column Totals: 110	x 5 = 75 (A) 455 (B)
				_ Column Totals	(A) <u>+00</u> (B)
3				Prevalence Index	= B/A = <u>4.14</u>
5				Hydrophytic Vegetation	on Indicators:
6.				1 - Rapid Test for I	
7				2 - Dominance Tes	
8				3 - Prevalence Inde	ex is ≤3.0 Adaptations¹ (Provide supporting
9				- data in Remark	s or on a separate sheet)
10				 Problematic Hydro 	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r		= Total		¹ Indicators of hydric soi be present, unless dist	il and wetland hydrology must urbed or problematic.
1 2				-	<u> </u>
				_ Hydrophytic Vegetation Present? Ye	s No <u>′</u>
% Bare Ground in Herb Stratum 30 Remarks:					
No tests are met.					
See Photo C-4.					

Profile Desc	ription: (Describe	to the depth i	needed to docur	nent the i	ndicator	or confirn	n the absence of indic	ators.)
Depth	Matrix			x Features				
(inches)	Color (moist)	<u> </u>	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0 - 18	10YR 4/3	100					Silty Clay Loam	
-								
				· ·				_
-								
-								_
				· ·				_
	-							-
	ncentration, D=Dep					d Sand G		PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all LR	Rs, unless other	rwise note	ed.)		Indicators for Pro	blematic Hydric Soils ³ :
Histosol	(A1)		Sandy (Sleyed Ma	trix (S4)		1 cm Muck (A9) (LRR I, J)
Histic Ep	ipedon (A2)		Sandy F	Redox (S5)		Coast Prairie F	Redox (A16) (LRR F, G, H)
Black His	` '			d Matrix (S	,		Dark Surface (
	n Sulfide (A4)		-	Mucky Mir				pressions (F16)
	Layers (A5) (LRR			Gleyed Ma			•	side of MLRA 72 & 73)
	ck (A9) (LRR F, G, I Below Dark Surfac			d Matrix (F	,		Reduced Vertice	,
	i Below Dark Suriac irk Surface (A12)	æ (ATT)	·	Dark Surfa d Dark Su	. ,		Red Parent Ma	Dark Surface (TF12)
	lucky Mineral (S1)			Dark Su Depression			Other (Explain	
-	fucky Peat or Peat	(S2) (LRR G. H		ains Depre		16)	 	phytic vegetation and
	cky Peat or Peat (S			RA 72 & 7			-	ogy must be present,
	`	, ,	`			,		ed or problematic.
Restrictive L	ayer (if present):							·
Type:								
Depth (inc	ches):		_				Hydric Soil Presen	t? Yes No ✔
Remarks:	,		_				1	
	_	_						
No indica	ators are me	et.						
HYDROLO	GY							
Wetland Hvo	drology Indicators							
_	ators (minimum of		heck all that anni	v)			Secondary Indica	ators (minimum of two required)
	Water (A1)	<u> </u>	Salt Crust				Surface Soil	
	ter Table (A2)		Aquatic In	• •	e (B13)			getated Concave Surface (B8)
Saturation	` ,		Hydrogen		` ,		Sparsery ve	
	arks (B1)		Dry-Seaso				_	izospheres on Living Roots (C3)
	t Deposits (B2)		Oxidized F					
	osits (B3)			not tilled)	ies on Liv	ing ixoots	Crayfish Bur	,
	t or Crust (B4)		Presence		d Iron (C4	1)	_ ′	isible on Aerial Imagery (C9)
Iron Dep			Thin Muck		,	•)	✓ Geomorphic	
	on Vis ble on Aerial	Imageny (R7)	Other (Exp	,	•		FAC-Neutra	` '
	tained Leaves (B9)	illiagery (b7)	Outer (EX	naiii iii ixe	iliaiks)			Hummocks (D7) (LRR F)
Field Observ							1103t-11eave	Tidilinocks (D1) (EKK 1)
		/oo No	Donth (in	oboo):				
Surface Water			Depth (in					
Water Table			Depth (in					v
Saturation Pr (includes cap		res No	Depth (in	ches):		_ Weti	and Hydrology Presei	nt? Yes No
	corded Data (strean	n gauge, monito	oring well, aerial	ohotos, pro	evious ins	pections).	if available:	
	,		- '			. ,,		
Remarks:								
Indicator	r D2 is met.							

Project/Site: US 54/E. Kellogg Corridor Improvements		County:	Wichita/	Sedgwick Cou	inty Samp	oling Date: 2022-0)5-31
Applicant/Owner: Kansas Department of Transportation	n			State: Ka	nsas Samp	oling Point: SP-D-	5
Investigator(s): D. Partridge, B. Timm	Secti	on, Tow	nship, Ran	ge: S23 T27S	R2E		
Landform (hillslope, terrace, etc.): Plateau	Loca	al relief (concave, c	onvex, none): N	one	Slope (%):	0
Subregion (LRR): H 74	Lat: 37.6819	9411		Long: <u>-97.177</u>	5503	Datum: NAI) 83
Soil Map Unit Name: 6244 - Elandco silt loam, rarely flo	ooded			NWI	classification:	N/A	
Are climatic / hydrologic conditions on the site typical for this tir	me of year? \	res	No	(If no, expl	ain in Remark	s.)	
Are Vegetation, Soil, or Hydrology sign	nificantly distur	rbed?	Are "N	Normal Circumsta	ances" present	t? Yes No	
Are Vegetation, Soil, or Hydrology natu	urally problem	atic?	(If nee	eded, explain any	answers in R	emarks.)	
SUMMARY OF FINDINGS - Attach site map sh	owing san	npling	point lo	cations, tran	sects, imp	ortant features	s, etc.
Hydrophytic Vegetation Present? Yes No _	~	1- 41-	0	A			
Hydric Soil Present? Yes No _	<u> </u>		Sampled . n a Wetlan		es I	No V	
Wetland Hydrology Present? Yes No _		WILIIII	i a vvetiani	u: re	;s i		
Remarks:							
Upland confirmation sample plot.							
VEGETATION – Use scientific names of plants.							
	Absolute Dor <u>6 Cover Spe</u>			Dominance Te			
1. Maclura pomifera			FACU	Number of Dom That Are OBL, F			
2.				(excluding FAC		0	(A)
3			_	Total Number o		0	
4				Species Across	All Strata:	<u>2</u>	(B)
Sapling/Shrub Stratum (Plot size: 15 ft r	50% = Tot	tal Cove	er	Percent of Dom That Are OBL, F		: <u>0</u>	(A/R)
1							(A/D)
2				Prevalence Ind			
3					ver of:	$\frac{\text{Multiply by:}}{x \ 1 = 0}$	
4				OBL species		x = 0 $x = 0$	
5				FAC species		x 3 = 0	_
	= Tot	tal Cove	er	FACU species			-
	90	/	FACU		0		=
2.			-	Column Totals:			(B)
3.				Duningland	- Inday D/A	4.00	
4				Hydrophytic Vo	e Index = B/A	•	
5					•	hytic Vegetation	
6				2 - Domina			
7				3 - Prevalei			
8						tions¹ (Provide supp	ortina
9				data in F	Remarks or on	a separate sheet)	_
10	90% = Tot	tal Cove		Problemation	c Hydrophytic \	Vegetation ¹ (Explair	1)
Woody Vine Stratum (Plot size: 30 ft r)	_ 10	tai Cove	31	¹ Indicators of hybe present, unle	dric soil and wess disturbed o	vetland hydrology m or problematic.	ıust
2				Hydrophytic			
	= Tot	tal Cove	— <u>—</u> er	Vegetation Present?	Ves	No	
% Bare Ground in Herb Stratum 20 Remarks:				1 1696111 :	169	140	
No tests are met.							
See Photo C-5.							

Profile Desci	ription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	n the absence of	indicators.)
Depth	Matrix		Redo	ox Feature	s .	_		
(inches)	Color (moist)	<u> %</u> _	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 16	10YR 4/2	_ <u>100</u> _					Silty Clay Loam	
-								
				_				_
	ncentration, D=De					ed Sand G		on: PL=Pore Lining, M=Matrix.
Hydric Soil II	ndicators: (Appli	cable to all LF	RRs, unless other	rwise not	ed.)		Indicators for	r Problematic Hydric Soils ³ :
Histosol (,		Sandy					ck (A9) (LRR I, J)
-	ipedon (A2)		-	Redox (S5				airie Redox (A16) (LRR F, G, H)
Black His				d Matrix (S Mucky Mir	,			race (S7) (LRR G)
	n Sulfide (A4) Layers (A5) (LRR	F)		Gleyed Ma	, ,		_	ns Depressions (F16) H outside of MLRA 72 & 73)
	ck (A9) (LRR F, G ,		-	ed Matrix (•	Vertic (F18)
	Below Dark Surfa			Dark Surfa	,			nt Material (TF2)
	rk Surface (A12)	, ,	Deplete	ed Dark Su	ırface (F7))		llow Dark Surface (TF12)
	ucky Mineral (S1)			Depressio	` ,			plain in Remarks)
	ucky Peat or Peat			ains Depre				hydrophytic vegetation and
5 cm Mud	cky Peat or Peat (83) (LRR F)	(MI	RA 72 & 7	73 of LRR	R H)		ydrology must be present,
Postrictive I	ayer (if present):						uniess dis	sturbed or problematic.
	mpact Soil							
Depth (inc			<u>—</u>				Hydric Soil Pr	esent? Yes No
Remarks:	1163).		<u>—</u>				Tryunc 3011 FT	esent: 1es No
		4	- . :					10 :
		iuitipie ioca	ations were a	ittempte	ea, now	ever, ex	cavation bei	ow 16 inches was prevented
by compac	ct soil.							
HYDROLOG	3Y							
Wetland Hyd	rology Indicators	:						
Primary Indica	ators (minimum of	one required;	check all that app	ly)			Secondary	Indicators (minimum of two required)
Surface V	Water (A1)		Salt Crus	t (B11)			Surface	e Soil Cracks (B6)
High Wat	er Table (A2)		Aquatic Ir	vertebrate	s (B13)		Sparse	ly Vegetated Concave Surface (B8)
Saturatio	n (A3)		Hydrogen	Sulfide O	dor (C1)		Draina	ge Patterns (B10)
Water Ma	arks (B1)		Dry-Seas	on Water 1	Table (C2))	Oxidize	ed Rhizospheres on Living Roots (C3)
Sedimen	t Deposits (B2)		Oxidized	Rhizosphe	res on Liv	ing Roots	(C3) (whe	re tilled)
Drift Dep	osits (B3)		(where	not tilled)			Crayfis	h Burrows (C8)
_	t or Crust (B4)		Presence			4)		tion Visible on Aerial Imagery (C9)
Iron Depo	` '		Thin Muc				·	orphic Position (D2)
	n Vis ble on Aerial		Other (Ex	plain in Re	emarks)			eutral Test (D5)
	ained Leaves (B9)						Frost-H	Heave Hummocks (D7) (LRR F)
Field Observ	ations:							
Surface Wate			Depth (ir					
Water Table F			Depth (ir					
Saturation Pro (includes cap		Yes No	Depth (ir	nches):		Wetl	land Hydrology P	resent? Yes No
	orded Data (strear	n gauge, moni	toring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks:								
No indica	ators are m	at .						
INO IIIUICA	aturs are ill	5 1.						
I								

Project/Site: US 54/E. Kellogg Corridor Improvemen	ts c	City/County	_{y:} Wichita/	Butler County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transportat	ion			State: Kansas	Sampling Point: SP-D-6
Investigator(s): D. Partridge, B. Timm				nge: S29 T27S R3E	
Landform (hillslope, terrace, etc.): Depression					e Slope (%): 1
Subregion (LRR): H 74	Lat: 37.6	6765705	5	Long: <u>-97.1304619</u>	Datum: NAD 83
Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 p					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology signature.	gnificantly o	listurbed?	Are "	Normal Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hydrology na	aturally prob	olematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	howing	samplir	ng point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	1				
Hydric Soil Present? Yes V			he Sampled hin a Wetlan		No
Wetland Hydrology Present? Yes No		Witi	nin a wetiar	id? fes	NO
Remarks:		•			
Wetland sample plot located in PEM	W-D-9.				
VEGETATION – Use scientific names of plant	s.				
	Absolute	Dominan	t Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominant Sp	pecies
1				That Are OBL, FACW, o	
2				(excluding FAC-):	<u>3</u> (A)
3				Total Number of Domin	_
4				Species Across All Stra	
Sapling/Shrub Stratum (Plot size: 15 ft r	=	= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	
1. Populus deltoides	15		FAC		(**2)
2				Prevalence Index work	
3				Total % Cover of:	
4				OBL species 0 FACW species 35	x 1 = 0
5				FAC species 85	
Herb Stratum (Plot size: 5 ft r	15% :	= Total Co	ver		x 4 = 0
1. Carex brevior	70	~	FAC		x 5 = 0
2. Carex vulpinoidea	20	~	FACW	Column Totals: 120	
3. Eleocharis compressa	15		FACW		271
4				Prevalence Index	
5				Hydrophytic Vegetation 1 - Rapid Test for H	
6			<u> </u>	✓ 2 - Dominance Tes	
7				3 - Prevalence Inde	
8					Adaptations ¹ (Provide supporting
9		-		data in Remarks	s or on a separate sheet)
10	105%			Problematic Hydro	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soi be present, unless distu	l and wetland hydrology must urbed or problematic.
2.				Hydrophytic	
% Bare Ground in Herb Stratum 5	:			Vegetation	s No
Remarks:				<u> </u>	
Dominance Test is met.					
See Photo C-6.					

Drefile Design	rintian. (Danasii -	40 4b0 -la=+1	- maadad ta das:	ant the	la dia ata :-		4ha ah	of indicators \		
	ription: (Describe	to tne depti				or confirm	the absence of	or indicators.)		
Depth	Matrix Color (moist)	%	Color (moist)	<u>k Feature</u> %	s Type ¹	Loc²	Texture	Remarks		
(inches) 0 - 6	10YR 4/2		10YR 6/8	5	C	PL / M		INCILIDINO		
	10 f R 4/2	95	101110/0	3		PL / IVI	Clay Loam			
-										
	_	· -	_							
				-						
							-			
-										
1- 0.0							. 2.			
	oncentration, D=Dep					ed Sand Gr		ation: PL=Pore Lining, M=Matrix.		
-	ndicators: (Application	able to all L						for Problematic Hydric Soils ³ :		
Histosol				Sleyed Ma				uck (A9) (LRR I, J)		
	pipedon (A2)			Redox (S5	•			Prairie Redox (A16) (LRR F, G, H)		
Black His	` '			Matrix (S				urface (S7) (LRR G)		
	n Sulfide (A4)	<u>-</u> \		-	neral (F1)			ains Depressions (F16)		
	Layers (A5) (LRR F	•	Loamy C		atrix (F2)			R H outside of MLRA 72 & 73)		
	ck (A9) (LRR F, G, I I Below Dark Surface			a Matrix ()ark Surfa				ed Vertic (F18) rent Material (TF2)		
-	rk Surface (A12)	- (A11)			urface (F7)	١		nallow Dark Surface (TF12)		
	lucky Mineral (S1)			epressio	` '	,		Explain in Remarks)		
	lucky Peat or Peat (S2) (LRR G			essions (F	16)		of hydrophytic vegetation and		
	cky Peat or Peat (S3				73 of LRR			hydrology must be present,		
	`	, ,	`			,		disturbed or problematic.		
Restrictive L	ayer (if present):							· · · · · · · · · · · · · · · · · · ·		
_{Type:} Su	persaturated Soi	il								
Depth (inc	thes)· 6						Hydric Soil I	Present? Yes V No		
Remarks:							1.7			
	-0									
		pie locati	ons were atter	npted,	howeve	er, excav	ation belov	w 6 inches was prevented by		
supersatu	rated soil.									
HYDROLO	GY									
	drology Indicators:									
_			-1111-414	۸			0	and the distance (as in income of the come as in a div		
	ators (minimum of o	ne requirea;					·	ry Indicators (minimum of two required)		
<u>✓</u> Surface			Salt Crust	` '	.=		Surface Soil Cracks (B6)			
	ter Table (A2)		Aquatic Inv					sely Vegetated Concave Surface (B8)		
<u>✓</u> Saturatio	` ,		Hydrogen					nage Patterns (B10)		
	arks (B1)		Dry-Seaso				·	ized Rhizospheres on Living Roots (C3)		
	t Deposits (B2)		Oxidized R	•		ing Roots (` , ` `	here tilled)		
-	osits (B3)		(where n					fish Burrows (C8)		
Algal Ma	t or Crust (B4)		Presence of		•	4)		ration Visible on Aerial Imagery (C9)		
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)			morphic Position (D2)		
Inundatio	on Vis ble on Aerial I	magery (B7)	Other (Exp	lain in Re	emarks)		FAC-	-Neutral Test (D5)		
Water-St	tained Leaves (B9)						Frost	t-Heave Hummocks (D7) (LRR F)		
Field Observ										
Surface Water	er Present? Y	es <u>′</u> N	o Depth (inc	hes): 0						
Water Table	Present? Y	es 🔽 N	o Depth (inc	hes): 6		[
Saturation Pr		_	o Depth (inc			Wetla	and Hydrology	Present? Yes No		
(includes cap	illary fringe)									
Describe Red	corded Data (stream	gauge, mor	nitoring well, aerial p	hotos, pr	evious ins	spections),	if available:			
Remarks:										
Indicato	rs A1, A2, A3	BO C	and Do are	a mot						
mulcato	13 71, 72, 83	, D9, C3	o, and DZ alt	. 111 0 1.						

Project/Site: US 54/E. Kellogg Corridor Improvement	nts C	ity/Count	y: Wichita	Butler County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transporta	ation	-		State: Kansas	Sampling Point: SP-D-7
Investigator(s): D. Partridge, B. Timm	S			nge: S29 T27S R3E	
Landform (hillslope, terrace, etc.): Plateau					Slope (%): 0
Subregion (LRR): H 74					
Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologys	-				oresent? Yes No
Are Vegetation, Soil, or Hydrology r				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes N	lo 🗸				
	lo 🔽		he Sampled		🗸
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	lo 🗸	Wit	hin a Wetlar	nd? Yes	No
Remarks:		ı			
Upland sample plot located adjacent	t to PEM	I W-D	-9.		
VEGETATION – Use scientific names of plan	nts				
VEGETATION OSC SCIENTIFIC HARRIES OF Plant		Dominar	nt Indicator	Dominance Test work	rsheet:
Tree Stratum (Plot size: 30 ft r)	% Cover			Number of Dominant S	
1				That Are OBL, FACW,	or FAC
2				(excluding FAC-):	<u>U</u> (A)
3				Total Number of Domin	
4				Species Across All Stra	ata: <u>1</u> (B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	=	= Total Co	over	Percent of Dominant S That Are OBL, FACW,	
1	_,, .		_		
2				Prevalence Index wor	
3				Total % Cover of: OBL species 0	
4					x 1 = 0 x 2 = 0
5					x 3 = 0
Herb Stratum (Plot size: 5 ft r	=	= Total Co	over		
1. Sorghum halepense	90	~	FACU		x 5 = 0
2.					(A) 360 (B)
3.					400
4				Prevalence Index	
5				Hydrophytic Vegetation 1 - Rapid Test for I	
6				2 - Dominance Tes	
7				3 - Prevalence Inde	
8					Adaptations ¹ (Provide supporting
9				data in Remark	s or on a separate sheet)
10	000/			Problematic Hydro	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1		= Total Co		¹ Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic.
2.				Hydrophytic	
% Bare Ground in Herb Stratum 10				Vegetation	s No
Remarks:				1	
No tests are met.					
See Photo C-7.					
Joe i Holo C-7.					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			x Feature							
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0 - 12	10YR 4/3	100					Silt Loam				
-											
-								_			
	-										
					·						
<u> </u>											
· · · · · · · · · · · · · · · · · · ·											
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.											
	indicators: (Appli					ed Sand G		PL=Pore Lining, M=Matrix. blematic Hydric Soils ³ :			
Histosol		cable to all ER						•			
	oipedon (A2)		Sandy (Redox (S5			1 cm Muck (As	Redox (A16) (LRR F, G, H)			
Black Hi			-	d Matrix (S			Dark Surface				
	en Sulfide (A4)			Mucky Mir				epressions (F16)			
	d Layers (A5) (LRR	F)	-	Gleyed Ma			-	tside of MLRA 72 & 73)			
	ıck (A9) (LRR F, G ,			d Matrix (Reduced Verti	,			
Depleted	d Below Dark Surfa	ce (A11)	Redox [Dark Surfa	ace (F6)		Red Parent Ma	aterial (TF2)			
	ark Surface (A12)				ırface (F7)	-	Dark Surface (TF12)			
	Mucky Mineral (S1)			Depressio			Other (Explain				
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains D								ophytic vegetation and			
5 cm ivit	icky Peat or Peat (S	53) (LRR F)	(IVIL	KA /2 &	73 of LRR	(H)	-	ogy must be present, ed or problematic.			
Restrictive I	Layer (if present):						dilless distalb	ed of problematic.			
	ompact Soil										
, , <u> </u>	ches): 12		_				Hydric Soil Presen	it? Yes No ✔			
	Ciles). <u></u>		_				Tryunc 3011 Fresen	16510			
Remarks:											
No indic	ators are me	et.									
HYDROLO	GY										
Wetland Hy	drology Indicators	:									
_	cators (minimum of		heck all that appl	v)			Secondary Indic	ators (minimum of two required)			
-	Water (A1)		Salt Crust				Surface Soi				
	ater Table (A2)		Aquatic In		es (B13)			egetated Concave Surface (B8)			
Saturation	` ,		Hydrogen		, ,		Drainage Pa	-			
l —	larks (B1)		Dry-Seaso			ı		nizospheres on Living Roots (C3)			
· ——	nt Deposits (B2)		Oxidized F								
	posits (B3)			not tilled)			Crayfish Bu	,			
-	at or Crust (B4)		Presence			4)	 ,	/isible on Aerial Imagery (C9)			
Iron Dep	• •		Thin Muck		`	- /		c Position (D2)			
	on Vis ble on Aerial	Imagery (B7)	Other (Exp				FAC-Neutra				
	tained Leaves (B9)				,			e Hummocks (D7) (LRR F)			
Field Obser								, , , ,			
Surface Wate	er Present?	Yes No	Depth (in	ches):							
Water Table			Depth (in								
Saturation P			Depth (in				land Hydrology Press	nt? Yes No			
(includes cap		100 INO	Debut (III)	ones)		_ ***	and right ology Frese	.nc. 165 NU			
	corded Data (strear	n gauge, monito	oring well, aerial _l	photos, pr	evious ins	pections),	, if available:				
Remarks:											
No india	atore are m	nt.									
אוטוווטונ	ators are me	ฮเ.									

Project/Site: US 54/E. Kellogg Corridor Improvemen	ts C	ity/County	Wichita/	Sedgwick County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transportat		State: Kansas	Sampling Point: SP-D-8		
Investigator(s): D. Partridge, B. Timm	S	Section, To	wnship, Rar	nge: S25 T27S R2E	
					e Slope (%): 1
Subregion (LRR): H74	Lat: 37.6	378959		Long: -97.154345	Datum: NAD 83
Soil Map Unit Name: 6051 - Elandco silt loam, freque					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si	-				oresent? Yes No
Are Vegetation, Soil, or Hydrology na				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map s	howing	samplin	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	~			_	
Hydric Soil Present? Yes No	·		e Sampled		No
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	, <u> </u>	with	in a Wetlan	id? Yes	NO
Remarks:					
Upland confirmation sample plot.					
VEGETATION – Use scientific names of plant	S.				
20.4 "		Dominant		Dominance Test work	sheet:
,	% Cover			Number of Dominant Sp	l .
Fraxinus pennsylvanica Ulmus americana	30			That Are OBL, FACW, (excluding FAC-):	or FAC (A)
= ·				,	
3 4.				Total Number of Domin Species Across All Stra	_
7.	60% =	= Total Cov	/er	·	
Sapling/Shrub Stratum (Plot size: 15 ft r)	·	10101 001		Percent of Dominant Sp That Are OBL, FACW, of	
1. Symphoricarpos orbiculatus	30		FACU	Prevalence Index worl	kahaati
2. Toxicodendron radicans	30		FACU	Total % Cover of:	
3					x 1 = 0
4					x 2 = 0
5	60% =	= Total Cov			x 3 = 180
Herb Stratum (Plot size: 5 ft r		- Total Cov	/ei	FACU species 70	x 4 = <u>280</u>
1. Elymus canadensis	10	~	FACU	UPL species 0	x 5 = <u>0</u>
2				Column Totals: 130	(A) <u>460</u> (B)
3				Prevalence Index	= B/A = 3.54
4				Hydrophytic Vegetation	
5				1 - Rapid Test for H	Hydrophytic Vegetation
6				2 - Dominance Tes	t is >50%
7 8				3 - Prevalence Inde	ex is ≤3.0 ¹
9				4 - Morphological A	Adaptations ¹ (Provide supporting
10.					s or on a separate sheet) phytic Vegetation ¹ (Explain)
	100/	= Total Cov	/er		
Woody Vine Stratum (Plot size: 30 ft r) 1				'Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.
2				Hydrophytic	
N/ Page Occupation Harts Otractions 85	=	= Total Cov	/er	Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum 85 Remarks:				100	
No tests are met.					
See Photo C-8.					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			x Feature							
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0 - 14	10YR 4/3	100					Sandy Loam				
-											
_											
	-										
<u> </u>											
-											
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.											
	Indicators: (Appli					u Sanu G		roblematic Hydric Soils ³ :			
Histosol		babic to all Litt	Sandy (1 cm Muck (•			
	oipedon (A2)			Redox (S5				Redox (A16) (LRR F, G, H)			
Black Hi			-	d Matrix (S				e (S7) (LRR G)			
	n Sulfide (A4)			Mucky Mir				Depressions (F16)			
	d Layers (A5) (LRR	F)		Gleyed Ma			-	utside of MLRA 72 & 73)			
	ıck (A9) (LRR F, G ,		Deplete	d Matrix (F3)		Reduced Ve	rtic (F18)			
	d Below Dark Surfa	ce (A11)		Dark Surfa	` ,			Material (TF2)			
	ark Surface (A12)				ırface (F7))		Dark Surface (TF12)			
	fucky Mineral (S1)	(00) (LBB 0 LL		Depressio		(4.0)		in in Remarks)			
	Mucky Peat or Peat	-		essions (F 73 of LRR		-	rophytic vegetation and				
5 CITI WILL	icky Peat or Peat (S	55) (LKK F)	(IVIL	KA 12 &	73 OI LKK	(n)	-	ology must be present, bed or problematic.			
Restrictive I	Layer (if present):						dinoco diotai	sed of problematic.			
	ompact Soil										
, , <u> </u>	ches): 14		-				Hydric Soil Prese	ent? Yes No			
Remarks:			_				1.,,				
No indic	ators are me	et.									
HYDROLO	GY										
Wetland Hyd	drology Indicators	:									
Ī	cators (minimum of		eck all that appl	y)			Secondary Ind	icators (minimum of two required)			
-	Water (A1)	,	Salt Crust					oil Cracks (B6)			
	ater Table (A2)		Aquatic In		s (B13)			/egetated Concave Surface (B8)			
Saturation	` ,		Hydrogen		, ,		Drainage	=			
	larks (B1)		Dry-Seaso					Rhizospheres on Living Roots (C3)			
	nt Deposits (B2)		Oxidized F		, ,						
	posits (B3)			not tilled)		· ·	Crayfish B	surrows (C8)			
_	at or Crust (B4)		Presence	of Reduce	ed Iron (C4	4)	Saturation	Visible on Aerial Imagery (C9)			
Iron Dep	osits (B5)		Thin Muck	Surface ((C7)			nic Position (D2)			
Inundation	on Vis ble on Aerial	Imagery (B7)	Other (Exp	olain in Re	emarks)		FAC-Neut	ral Test (D5)			
	tained Leaves (B9)						Frost-Hea	ve Hummocks (D7) (LRR F)			
Field Observ	vations:										
Surface Wate	er Present?	Yes No	Depth (in	ches):							
Water Table			Depth (in								
Saturation Pr			Depth (in				land Hydrology Pres	ent? Yes No			
(includes cap	oillary fringe)										
Describe Red	corded Data (strear	n gauge, monito	ring well, aerial p	photos, pr	evious ins	pections),	if available:				
Remarks:											
Indicato	r D2 is met.										
indicato	ו שב וא וווכנ.										
Ì											

Project/Site: US 54/E. Kellogg Corridor Improvement	ents (City/Cou	_{ınty:} Wichita	a/Butler County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transport		State: Kansas Sampling Point: SP-D-9			
Investigator(s): D. Partridge, B. Timm	;			ange: S30 T27S R3E	
Landform (hillslope, terrace, etc.): Plateau					Slope (%): 0
Subregion (LRR): H 74	Lat: 37.	67773	0	Long: -97.150090	Datum: NAD 83
Soil Map Unit Name: 6051 - Elandco silt loam, frequ					
Are climatic / hydrologic conditions on the site typical for the					
Are Vegetation, Soil, or Hydrology	-				present? Yes No
Are Vegetation, Soil, or Hydrology				needed, explain any answe	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes	No 🗸				
Hydric Soil Present? Yes	No 🔽		s the Sample		No
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No	\ \	vithin a Wetla	and? fes	NO
Remarks:					
Upland confirmation sample plot.					
VEGETATION – Use scientific names of pla	nts.				
	Absolute	Domin	ant Indicator	Dominance Test work	ksheet:
Tree Stratum (Plot size: 30 ft r	% Cover		es? Status	- Number of Dominant S	
1. Populus deltoides	40		FAC	That Are OBL, FACW,	
2. Ulmus americana			FAC	(excluding FAC-):	<u>3</u> (A)
3				 Total Number of Domir Species Across All Stra 	•
4				- Species Across Air Stra	аla. <u>О</u> (В)
Sapling/Shrub Stratum (Plot size: 15 ft r	60%	= Total	Cover	Percent of Dominant S That Are OBL, FACW,	
1. Acer negundo	20		FAC		(==,
2. Symphoricarpos orbiculatus	20		FACU	Prevalence Index wor	
3. Juniperus virginiana	10		UPL	Total % Cover of: OBL species 0	
4					x 1 = 0 x 2 = 0
5					x 3 = 240
Herb Stratum (Plot size: 5 ft r)	50%	= Total	Cover	-	x 4 = 160
1. Elymus canadensis	20	~	FACU		x 5 = 50
2.				Column Totals: 130	
3.				<u> </u>	
4				Prevalence Index	
5				Hydrophytic Vegetati	Hydrophytic Vegetation
6				2 - Dominance Tes	• • •
7				3 - Prevalence Ind	
8					Adaptations ¹ (Provide supporting
9				- data in Remark	(s or on a separate sheet)
10	000/			- Problematic Hydro	ophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1		= Total		¹ Indicators of hydric so be present, unless dist	oil and wetland hydrology must turbed or problematic.
2.				Hydrophytic	
% Bare Ground in Herb Stratum 70				Vegetation	es No_ <u>/</u> _
Remarks:					
No tests were met.					
See Photo C-9.					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			x Feature		. 2					
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0 - 12	10YR 3/3	100					Silty Clay Loam				
-											
				-	•						
				-							
-											
				-	· ——						
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.											
	•					ed Sand G		Problematic Hydria Soils ³			
-	Indicators: (Appli	cable to all LR						Problematic Hydric Soils ³ :			
Histosol			Sandy (-			1 cm Muck	(A9) (LRR I, J) le Redox (A16) (LRR F, G, H)			
Black Hi	oipedon (A2)		-	Redox (S5 d Matrix (S				ce (S7) (LRR G)			
	en Sulfide (A4)				neral (F1)			Depressions (F16)			
	d Layers (A5) (LRR	F)		Gleyed Ma	, ,		-	outside of MLRA 72 & 73)			
	ick (A9) (LRR F, G ,		-	d Matrix (Reduced Ve	,			
	d Below Dark Surfa			Dark Surfa				Material (TF2)			
Thick Da	ark Surface (A12)		Deplete	d Dark Su	urface (F7)	Very Shallo	w Dark Surface (TF12)			
	Mucky Mineral (S1)			Depressio				ain in Remarks)			
	Mucky Peat or Peat			essions (F			drophytic vegetation and				
5 cm Mu	icky Peat or Peat (S	63) (LRR F)	(ML	RA 72 & 1	73 of LRR	(H)	-	rology must be present,			
Postriotivo I	Layer (if present):						uniess distu	irbed or problematic.			
	ompact Soil										
, , <u> </u>			_				Unidate On the Property	No. V			
	ches): 12		_				Hydric Soil Pres	sent? Yes No			
Remarks:											
No indic	ators are me	et.									
HYDROLO	GY										
	drology Indicators										
_			hook all that anal	w)			Cocondan/In	digators (minimum of two required)			
-	cators (minimum of	one required, c						dicators (minimum of two required)			
	Water (A1)		Salt Crust		- (D40)			Soil Cracks (B6)			
_	ater Table (A2)		Aquatic In		, ,			Vegetated Concave Surface (B8)			
Saturation	` '		Hydrogen					Patterns (B10)			
· ——	larks (B1)		Dry-Seaso					Rhizospheres on Living Roots (C3)			
	nt Deposits (B2)		Oxidized F	•		ing Roots	(C3) (where Crayfish	,			
-	oosits (B3)		Presence	not tilled)		1\	 ,	` '			
Algai wa Iron Dep	at or Crust (B4)		Thin Muck		`	+)		n Visible on Aerial Imagery (C9) whic Position (D2)			
	on Vis ble on Aerial	Imagany (P7)	Other (Exp								
	tained Leaves (B9)		Outer (EX	Jiaiii iii ike	ziliaiks)			ıtral Test (D5) ave Hummocks (D7) (LRR F)			
Field Obser							1 105(-116)	ave Hummocks (D1) (ERR F)			
		Voc. No.	Donth (in	oboo\:							
Surface Water			Depth (in								
Water Table			Depth (in								
Saturation Pi		Yes No	Depth (in	ches):		Wet	land Hydrology Pre	esent? Yes No			
	corded Data (strear	n gauge, monit	oring well, aerial	photos, pr	evious ins	pections),	, if available:				
	,		- '			. /					
Remarks:											
No indic	ators are me	et.									

Project/Site: US 54/E. Kellogg Corridor Improvemen	nts c	City/County	, Wichita	/Sedgwick County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transporta	tion			State: Kansas	Sampling Point: SP-D-10
Investigator(s): D. Partridge, B. Timm		Section, To	wnship, Ra	nge: S24 T27S R2E	
Landform (hillslope, terrace, etc.): Plateau					Slope (%): 0
Subregion (LRR): H 74	Lat: 37.6	681627		Long: -97.159134	Datum: NAD 83
Soil Map Unit Name: 6051 - Elandco silt loam, freque					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si	-				oresent? Yes No
Are Vegetation, Soil, or Hydrologyn				eeded, explain any answe	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes No	· ·				
	· ·		ne Sampled		No
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	o <u> </u>	With	in a Wetlar	10? Yes	NO
Remarks:		•			
Upland confirmation sample plot.					
VEGETATION – Use scientific names of plant	ts.				
	Absolute	Dominant	Indicator	Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominant Sp	pecies
1. Juniperus virginiana				That Are OBL, FACW, (excluding FAC-):	or FAC 0 (A)
2				(excluding 1 AC-).	(A)
3				Total Number of Doming Species Across All Stra	_
4		T-4-1 O-			(
Sapling/Shrub Stratum (Plot size: 15 ft r	10%	= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	
1. Maclura pomifera	20		FACU		
2.				Prevalence Index worl	
3				Total % Cover of: OBL species 0	Multiply by: x 1 = 0
4	-	-			x 2 = 0
5	000/				x 3 = 0
Herb Stratum (Plot size: 5 ft r)	20%	= Total Co	ver		
1. Bromus inermis	100	~	UPL	UPL species 110	
2.				Column Totals: 130	(A) <u>630</u> (B)
3				Prevalence Index	- B/A - 4.85
4				Hydrophytic Vegetation	
5				1 - Rapid Test for H	
6				2 - Dominance Tes	
7				3 - Prevalence Inde	
8				4 - Morphological A	Adaptations ¹ (Provide supporting
9					s or on a separate sheet)
10.	100%	= Total Co	ver	Problematic Hydror	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric soil be present, unless distu	l and wetland hydrology must urbed or problematic.
2.				Hydrophytic	
	:			Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum 5 Remarks:				163	
No tests are met.					
See Photo C-10.					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth	Matrix			x Feature							
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks			
0 - 16	10YR 4/2	100					Silty Clay Loam				
-					· <u></u>						
-											
-	-										
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: (Appli	cable to all LRF	Rs, unless othe	wise not	ed.)		Indicators for P	roblematic Hydric Soils ³ :			
Histosol			Sandy (-			1 cm Muck (
	oipedon (A2)			Redox (S5				e Redox (A16) (LRR F, G, H)			
Black Hi	` '			d Matrix (S				e (S7) (LRR G)			
	en Sulfide (A4)	- \		Mucky Mir	, ,		-	Depressions (F16)			
	d Layers (A5) (LRR ick (A9) (LRR F, G ,			Gleyed Ma d Matrix ((LRR H c	outside of MLRA 72 & 73)			
	d Below Dark Surfa			u Mailix (Dark Surfa				Material (TF2)			
-	ark Surface (A12)	00 (711)			ırface (F7)	1		v Dark Surface (TF12)			
	fucky Mineral (S1)			Depressio		'		in in Remarks)			
-	Mucky Peat or Peat	(S2) (LRR G, H			essions (F	16)		drophytic vegetation and			
	icky Peat or Peat (S		RA 72 & 1	73 of LRR	H)	wetland hydrology must be present,					
							unless distur	bed or problematic.			
	Layer (if present):										
Type: Co	ompact Soil		=								
Depth (inc	ches): <u>16</u>		_				Hydric Soil Prese	ent? Yes No			
Remarks:							<u> </u>				
No indic	ators are me	_ t									
140 maic	ators are m										
HYDROLO	CV										
_	drology Indicators			,							
-	cators (minimum of	one requirea; cr					· · · · · · · · · · · · · · · · · · ·	licators (minimum of two required)			
	Water (A1)		Salt Crust	` '				oil Cracks (B6)			
_	iter Table (A2)		Aquatic In					Vegetated Concave Surface (B8)			
Saturation	` ,		Hydrogen					Patterns (B10)			
· ——	larks (B1)		Dry-Seaso					Rhizospheres on Living Roots (C3)			
	nt Deposits (B2)		Oxidized F	•		ing Roots	, ,	,			
-	posits (B3)		,	not tilled)			Crayfish E	` '			
	at or Crust (B4)		Presence		`	1)		Visible on Aerial Imagery (C9)			
Iron Dep	. ,		Thin Muck					nic Position (D2)			
	on Vis ble on Aerial	Imagery (B7)	Other (Exp	olain in Re	emarks)		FAC-Neut				
	tained Leaves (B9)						Frost-Hea	ve Hummocks (D7) (LRR F)			
Field Obser											
Surface Water			Depth (in								
Water Table			Depth (in								
Saturation Projection (includes care		Yes No _	Depth (in	ches):		Wet	land Hydrology Pres	sent? Yes No			
	corded Data (strear	n gauge, monito	ring well, aerial	ohotos, pr	evious ins	pections),	, if available:				
Remarks:											
Nia imalia	otore energy	•									
ino inaic	ators are me	∌(.									

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvemen	ts c	city/County	Wichita/	Sedgwick County	_ Sampling Da	ate: 2022-06	6-01
Applicant/Owner: Kansas Department of Transportat	ion			State: Kansas	_ Sampling Po	oint: SP-D-11	1
Investigator(s): D. Partridge, B. Timm		Section, To	wnship, Rai	nge: S26 T27S R2E			
Landform (hillslope, terrace, etc.): Depression					ve	Slope (%): 2	<u> </u>
Subregion (LRR): H 74	Lat: 37.6	677087		Long: <u>-97.184960</u>		Datum: NAD	83
Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 p							
Are climatic / hydrologic conditions on the site typical for this	time of yea	r? Yes	No	(If no, explain in	Remarks.)		
Are Vegetation, Soil, or Hydrology signature.	gnificantly d	listurbed?	Are "	'Normal Circumstances"	present? Yes	s_ _/ No_	
Are Vegetation, Soil, or Hydrology na	aturally prob	lematic?	(If ne	eded, explain any answ	ers in Remarks	s.)	
SUMMARY OF FINDINGS - Attach site map s	howing	samplin	g point le	ocations, transect	s, importar	nt features,	etc.
Hydrophytic Vegetation Present? Yes No							
Hydric Soil Present? Yes ✓ No	. <u></u>		e Sampled	_	No		
Wetland Hydrology Present? Yes No		with	in a Wetlar	id? Yes	NO		
Remarks:							
Sample plot located in PEM W-D-24.							
VEGETATION – Use scientific names of plant	e						
VEGETATION – Ose scientific fiames of plant	Absolute	Dominant	Indicator	Dominance Test wor	rkehoot		
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominant			
1				That Are OBL, FACW			
2				(excluding FAC-):	<u>-</u>	((A)
3				Total Number of Dom			
4				Species Across All St	rata: <u>1</u>	((B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	=	= Total Cov	/er	Percent of Dominant		۰۰۰ ،	(A (D)
1				That Are OBL, FACW	, or FAC: <u>10</u>	<u>u</u> (,	(A/B)
2.				Prevalence Index wo	rksheet:		
3.				Total % Cover of:		ultiply by:	
4.				· —	x 1 =		
5				FACW species 75			
- C	=	= Total Cov	/er		x 3 =		
Herb Stratum (Plot size: 5 ft r)	75		FACW		x 4 =		
1. Eleocharis compressa 2. Iva annua	75 10		FAC	UPL species 0 Column Totals: 85	x 5 = (A)		(B)
			FAC	Column rotals. <u>00</u>	(A)	100	(D)
3				Prevalence Inde	x = B/A = 2.1	12	
5				Hydrophytic Vegetat			
6				✓ 1 - Rapid Test for		'egetation	
7.				2 - Dominance Te			
8.				3 - Prevalence Inc			
9				4 - Morphological	l Adaptations' (ks or on a sepa		orting
10				Problematic Hydr	•	•)
30 ft r	85%	= Total Cov	/er				
Woody Vine Stratum (Plot size: 30 ft r) 1				¹ Indicators of hydric so be present, unless dis			IST
2.				Hydrophytic			
				Vegetation			
% Bare Ground in Herb Stratum 20				Present? Y	es N	lo	
Remarks:							
Rapid Test is met.							
See Photo C-11.							

SOIL Sampling Point: SP-D-11

Profile Description: (Describe to the depth needed to document the indicated and the indicated are not as a second and the indicated are not as a second are not a second are not as a second are not a second are n	or or confirm	the absence of	indicators.)
Depth Matrix Redox Features			
(inches) Color (moist) % Color (moist) % Type	Loc ²	Texture	Remarks
0 - 8 10YR 6/1 90		Silty Clay Loam	
-			
·—			
<u> </u>			_
<u> </u>			
<u> </u>			
<u> </u>			
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Co	ated Sand Gra		ion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators fo	r Problematic Hydric Soils³:
Histosol (A1) Sandy Gleyed Matrix (S	1)		ck (A9) (LRR I, J)
Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6)			airie Redox (A16) (LRR F, G, H)
Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F	:1)		face (S7) (LRR G) ns Depressions (F16)
Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F			H outside of MLRA 72 & 73)
1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3)	_,		Vertic (F18)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	Red Pare	ent Material (TF2)
Thick Dark Surface (A12) Depleted Dark Surface (,	-	Illow Dark Surface (TF12)
Sandy Mucky Mineral (S1) Redox Depressions (F8)		- '	xplain in Remarks)
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of L			hydrophytic vegetation and
5 CITI Mucky Feat OF Feat (S5) (LRR F) (MLRA 72 & 73 OF L	KK II)		lydrology must be present, sturbed or problematic.
Restrictive Layer (if present):		u000 u	
Type: Supersaturated Soil			
Depth (inches): 8		Hydric Soil Pr	resent? Yes <u> </u>
Remarks:			
Indicator F3 is met. Multiple locations were attempted, howe	ver. excav	ation below	8 inches was prevented by
compact soil.	,		
HYDROLOGY			
Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Socondary	Indicators (minimum of two required)
		-	
Surface Water (A1) Salt Crust (B11) ✓ High Water Table (A2) Aquatic Invertebrates (B13)	١		e Soil Cracks (B6) ely Vegetated Concave Surface (B8)
✓ Saturation (A3) — Addatic invertebrates (B13		4	ge Patterns (B10)
Water Marks (B1) Dry-Season Water Table (ed Rhizospheres on Living Roots (C3)
Sediment Deposits (B2) Oxidized Rhizospheres on			ere tilled)
Drift Deposits (B3) (where not tilled)	Living Hoolo (C	, ,	sh Burrows (C8)
Algal Mat or Crust (B4) Presence of Reduced Iron	(C4)	-	tion Visible on Aerial Imagery (C9)
Iron Deposits (B5) Thin Muck Surface (C7)	(-)		orphic Position (D2)
Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks			leutral Test (D5)
Water-Stained Leaves (B9)		Frost-H	Heave Hummocks (D7) (LRR F)
Field Observations:			
Surface Water Present? Yes No Depth (inches):			
Water Table Present? Yes No Depth (inches): 8			
Saturation Present? Yes No Depth (inches): 2	Wetla	nd Hydrology F	Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous	inenactions) if	available:	
December Accorded Data (Stream gauge, monitoring well, acrial photos, previous	speculoris), II	avanabit.	
Remarks:			
Indicators A2, A3, B10, D2, and D5 are present.			

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvemen	nts c	City/Count	_{ty:} Wichita/	Sedgwick County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transporta	tion			State: Kansas	Sampling Point: SP-D-12
Investigator(s): D. Partridge, B. Timm		Section, T	ownship, Rai	nge: S26 T27S R2E	
Landform (hillslope, terrace, etc.): Plateau					Slope (%): 0
Subregion (LRR): H 74	_ Lat: 37.6	677073		Long: <u>-97.184912</u>	Datum: NAD 83
Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3					
Are climatic / hydrologic conditions on the site typical for this	time of yea	r? Yes_	No	(If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrologysi	ignificantly o	disturbed?	Are "	Normal Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally prob	olematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplii	ng point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	· ·				
Trydrio con i resent:	o		the Sampled thin a Wetlan		No
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	· <u> </u>	WIL	min a vvenar	iur res	NO
Remarks:					
Upland sample plot located adjacent	to PEM	1 W-D	-24.		
VEGETATION – Use scientific names of plant	ts.				
7. 0. (0. (1. 20 ft r			nt Indicator	Dominance Test work	sheet:
	% Cover			Number of Dominant S	•
1				That Are OBL, FACW, (excluding FAC-):	or FAC (A)
2				Total Number of Domin	ant
4				Species Across All Stra	_
	:			Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size: 15 ft r)				That Are OBL, FACW,	
1				Prevalence Index wor	ksheet:
3.				Total % Cover of:	Multiply by:
4				· ·	x 1 = 0
5					x 2 = 0
		= Total Co	over		x 3 = 30
Herb Stratum (Plot size: 5 ft r 1. Sorghum halepense	60	~	FACU		x 4 = 360 x 5 = 0
2 Solidago canadensis	30		FACU	UPL species 0 Column Totals: 100	
Apocynum cannabinum	10		FAC		
4				Prevalence Index	
5				Hydrophytic Vegetation	
6				1 - Rapid Test for I	
7				2 - Dominance Tes	
8				3 - Prevalence Inde	ex is ≤3.0° Adaptations¹ (Provide supporting
9				data in Remark	s or on a separate sheet)
10	100%			Problematic Hydro	phytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r	100%			¹ Indicators of hydric soi be present, unless distu	il and wetland hydrology must urbed or problematic.
1				Hydrophytic	
% Bare Ground in Herb Stratum 10	:			Vegetation	s No
Remarks:				<u>l</u>	
No tests are met.					
See Photo C-12.					

SOIL Sampling Point: SP-D-12

Depth Matrix Redox Features O-18 10YR 4/4 60 10YR 7/4 40 C M Sandy Clay Loan
1
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. To Coate Type Lining, M=Matrix, Indicators for Problematic Hydric Soils*: Indicators for Problematic Hydric Soil Present? Indicators for Problematic Hydric Soil Present? Type: Sequence Hydric Soil Present? Indicators for Problematic
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Thistosol (Ar) Histosol (Ar) Histosol (Ar) Sandy Gleyed Matrix (S4) Black Histic (A3) Stripped Matrix (S6) Black Histic (A3) Stripped Matrix (S6) Stratified Layers (A5) (LRR F, G, H) Stratified Layers (A5) (LRR F, G, H) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Depleted Bark Surface (A12) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Dark Surface (F7) Sendy Mucky Mineral (S1) Storm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F8) Aredox Dark Surface (F7) Other (Explain in Remarks) Type: Type: Depth (Inches): Restrictive Layer (if present): Type: Depth (Inches): Hydric Soil Present? Yes No HYDROLOGY
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A11) Sandy Mecky Depressions (F16) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Badox Histic (A13) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Below Dark Surface (A12) Sandy Mucky Mineral (F1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) Wery Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators for Problematic Hydric Soils S: I cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H) High Plains Depressions (F16) Redox Depressions (F20) Wery Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators for Problematic Hydric Soils S: I cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H) High Plains Depressions (F16) Were Shallow Dark Surface (S7) (LRR F) Were Shallow Dark Surface (S7) Wery Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No Wetland hydrology Present? Yes No Hydric Soil Present? Yes No Wetland hydrology Mineral (S1) Hydric Soil Present? Yes No Wetland hydrology Mineral (S1) Hydric Soil Present? Yes No Wetland Hydrology Mineral (S1)
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Black Histic Epipedon (A2) Sandy Redox (S5) Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Depleted Dark Surface (A12) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Thick Dark Surface (A12) Sandy Mucky Mineral (F1) Balex Histic (A3) Stripped Matrix (F3) Depleted Below Dark Surface (M11) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) MRRA 72 & 73 of LRR H) MIGRA 72 & 73 of LRR H) Type: Depth (inches): Type: Depth (inches): No indicators are met.
Histosol (A1) Sandy Gleyed Matrix (S4) Histic Epipedon (A2) Sandy Redox (S5) Sandy Redox (S5) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) 1 cm Muck (A9) (LRR F, G, H) Stratified Layers (A5) (LRR F) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (F1) Each Mucky Peat or Peat (S2) (LRR G, H) Stratified Layer (if present): Type: Depth (inches): No indicators are met.
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stripped Matrix (S6) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) Tom Muck (A9) (LRR F, G, H) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S2) (LRR G, H) Type: Depth (inches): Remarks: HYDROLOGY Stratified Layers (A5) (LRR F, G, H) Loamy Mucky Mineral (F1) Loamy Mucky Mineral (F1) Loamy Mucky Mineral (F1) High Plains Depressions (F16) Red Dark Surface (A12) Pepleted Matrix (F3) Reduced Vertic (F18) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Hydric Soil Present? Yes No Hydric Soil Present? No HYDROLOGY
Black Histic (A3)
Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Sandy Mucky Mineral (S1) Send Mucky Peat or Peat (S2) (LRR G, H) Stratified Layer (if present): Type: Depleted Below Dark Surface (A12) Depleted Dark Surface (F7) Redox Depressions (F8) (MLRA 72 & 73 of LRR H) Mucky Peat or Peat (S3) (LRR F) Redox Depressions (F16) (MLRA 72 & 73 of LRR H) Wetland hydrology must be present, unless disturbed or problematic. Remarks: No indicators are met.
Stratified Layers (A5) (LRR F) Loamy Gleyed Matrix (F2) (LRR H outside of MLRA 72 & 73) 1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18)
1 cm Muck (A9) (LRR F, G, H) Depleted Matrix (F3) Reduced Vertic (F18) Redox Dark Surface (A11) Redox Dark Surface (F6) Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Red Parent Material (TF2) Thick Dark Surface (A12) Depleted Dark Surface (F7) Very Shallow Dark Surface (TF12) Very Shallow Dark Surface (TF12) Very Shallow Dark Surface (TF12) Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Depth (inches): Depth (inches): No V Remarks: No indicators are met.
Sandy Mucky Mineral (S1) Redox Depressions (F8) Other (Explain in Remarks) 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) 5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Depth (inches): Hydric Soil Present? Yes No ✓ Remarks: No indicators are met.
2.5 cm Mucky Peat or Peat (S2) (LRR G, H) High Plains Depressions (F16) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present):
5 cm Mucky Peat or Peat (S3) (LRR F) (MLRA 72 & 73 of LRR H) wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present):
Restrictive Layer (if present): Type: Depth (inches): Remarks: No indicators are met. HYDROLOGY
Restrictive Layer (if present): Type: Depth (inches): Remarks: No indicators are met. HYDROLOGY
Type:
Depth (inches): No
No indicators are met. HYDROLOGY
No indicators are met.
HYDROLOGY
HYDROLOGY
Wetland Hydrology Indicators:
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required)
Surface Water (A1) Salt Crust (B11) Surface Soil Cracks (B6)
High Water Table (A2) Aquatic Invertebrates (B13) Sparsely Vegetated Concave Surface (B8)
Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10)
Water Marks (B1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living Roots (C3)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) (where tilled)
Drift Deposits (B3) (where not tilled) Crayfish Burrows (C8)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2)
Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) FAC-Neutral Test (D5)
Water-Stained Leaves (B9) Frost-Heave Hummocks (D7) (LRR F)
Field Observations:
Surface Water Present? Yes No Depth (inches):
Water Table Present? Yes No Depth (inches):
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
No indicators are mot
No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvemen	ts C	ity/County:	Wichita/	Butler County	Sampling Date: 2022-06-01
Applicant/Owner: Kansas Department of Transportat	ion			State: Kansas	Sampling Point: SP-D-13
Investigator(s): D. Partridge, B. Timm	s	ection, To	wnship, Rar	nge: S29 T27S R3E	
					re Slope (%): 1
Subregion (LRR): H 74	Lat: 37.6	77309		Long: <u>-97.123562</u>	Datum: NAD 83
Soil Map Unit Name: 4671 - Irwin silty clay loam, 1 to					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology si					present? Yes No
Are Vegetation, Soil, or Hydrology na	aturally prob	lematic?	(If ne	eded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s	showing	samplin	g point lo	ocations, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes No)	lo 4h	- Campled	A	
Hydric Soil Present? Yes V)		e Sampled in a Wetlan		, No
Wetland Hydrology Present? Yes No)				
Remarks:	_				
Sample plot located in PSS W-D-11. Soils we	re not co	llected	at sampl	e plot due to recei	nt tornado damage
preventing access to the area.					
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant		Dominance Test work	
1			Status	Number of Dominant S That Are OBL, FACW,	•
2.				(excluding FAC-):	<u>2</u> (A)
3.				Total Number of Domir	nant
4				Species Across All Stra	ata: <u>2</u> (B)
Continue (Charles Charles (Distriction 15 ft r	=	: Total Cov	er	Percent of Dominant S	
Sapling/Shrub Stratum (Plot size: 15 ft r)	70	~	FACW	That Are OBL, FACW,	or FAC: 100 (A/B)
2.				Prevalence Index wor	rksheet:
3.				Total % Cover of:	
4.				· ·	x 1 = 10
5.				FACW species 70	
	70% =	: Total Cov	er		x 3 = 0
Herb Stratum (Plot size: 5 ft r)	10	.,	OBL		x 4 = 0 x 5 = 0
1. Typha latifolia			OBL	UPL species 0 Column Totals: 80	(A) 150 (B)
2. 3.					(;;) (;)
4				Prevalence Index	
5.				Hydrophytic Vegetati	
6.					Hydrophytic Vegetation
7				2 - Dominance Tes	
8				3 - Prevalence Ind	lex is ≤3.0 Adaptations¹ (Provide supporting
9				4 - Morphological / data in Remark	as or on a separate sheet)
10	100/			Problematic Hydro	ophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 30 ft r		: Total Cov		¹ Indicators of hydric so be present, unless dist	il and wetland hydrology must
1 2				Hydrophytic	•
% Bare Ground in Herb Stratum 70	=			Vegetation	es No
Remarks:				<u> </u>	
Rapid test was met.					
•					
See Photo C-13.					

SOIL Sampling Point: SP-D-13

Profile Desc	cription: (Describ	e to the depth	n needed to docu	ment the i	indicator of	or confirm	the absence of	indicators.)
Depth	Matrix			ox Feature			_	_
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
	_							
-								
-								
				_				
1- 0.0							. 2	
	oncentration, D=De Indicators: (Appli					d Sand Gr		ion: PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ³ :
Histosol				Gleyed Ma				ck (A9) (LRR I, J)
	pipedon (A2)			Redox (S5				airie Redox (A16) (LRR F, G, H)
	istic (A3)			ed Matrix (S	•			face (S7) (LRR G)
	en Sulfide (A4)			Mucky Mir				ns Depressions (F16)
	d Layers (A5) (LRR	(F)	-	Gleyed Ma			-	H outside of MLRA 72 & 73)
	ıck (A9) (LRR F, G		-	ed Matrix (Reduced	Vertic (F18)
	d Below Dark Surfa		Redox	Dark Surfa	ace (F6)			ent Material (TF2)
	ark Surface (A12)			ed Dark Su				illow Dark Surface (TF12)
-	Mucky Mineral (S1)			Depressio	` ,			kplain in Remarks)
	Mucky Peat or Peat			lains Depre				hydrophytic vegetation and
5 cm Mi	ucky Peat or Peat (53) (LRR F)	(MI	LRA 72 & 1	73 of LRR	H)		ydrology must be present, sturbed or problematic.
Restrictive	Layer (if present):						unless un	starbed of problematic.
	operty Access							
Depth (in	ches): 0						Hydric Soil Pr	resent? Yes <u> </u>
Remarks:								
No soils v	vere collected	due to rec	ent tornado p	reventii	ng acces	ss to are	ea. Due to th	e dominance of hydrophytic
vegetatio	n and the pres	ence of sig	gns of hydrol	ogy, hyd	lric soil i	is assun	ned to be pre	esent.
HYDROLO	GY							
Wetland Hy	drology Indicators	s:						
Primary Indi	cators (minimum of	one required;	check all that app	oly)			Secondary	Indicators (minimum of two required)
Surface	Water (A1)		Salt Crus	t (B11)			Surfac	e Soil Cracks (B6)
	ater Table (A2)			nvertebrate	s (B13)			ely Vegetated Concave Surface (B8)
Saturati			Hydroger					ge Patterns (B10)
	larks (B1)			on Water 7			— Oxidiz	ed Rhizospheres on Living Roots (C3)
	nt Deposits (B2)			Rhizosphe	, ,	ng Roots		ere tilled)
·	posits (B3)			not tilled)		<u> </u>		sh Burrows (C8)
	at or Crust (B4)			of Reduce		.)	,	tion Visible on Aerial Imagery (C9)
	posits (B5)			k Surface (•	•		orphic Position (D2)
-	on Vis ble on Aeria	I Imagery (B7)						leutral Test (D5)
	stained Leaves (B9)				- /			Heave Hummocks (D7) (LRR F)
Field Obser	· , ,						<u> </u>	. , , , ,
Surface Wat	er Present?	Yes N	o Depth (ir	nches): _		_ [
Water Table			o Depth (ir					
Saturation P (includes ca			o Depth (ir				and Hydrology F	Present? Yes No
	corded Data (strea	m gauge, mor	nitoring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks:								
Indicato	rs D2 and D	5 are me	et.					



Appendix	C-Ground	Photographs
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Photograph C-1: View of upland Sample Plot (SP)-D-1, facing north.



Photograph C-2: View of upland SP-D-2, facing south.





Photograph C-3: View of upland SP-D-3, facing southeast.



Photograph C-4: View of upland SP-D-4, facing northeast.





Photograph C-5: View of upland SP-D-5, facing east.



Photograph C-6: View of SP-D-7 located in PEM Wetland (W)-D-9, facing south.





Photograph C-7: View of upland SP-D-7, facing northeast.



Photograph C-8: View of upland SP-D-8, facing south.





Photograph C-9: View of upland SP-D-9, facing west.



Photograph C-10: View of upland SP-D-10, facing northwest.





Photograph C-11: View of SP-D-11in PEM W-D-24, facing north.



Photograph C-12: View of upland SP-D-12, facing east.





Photograph C-13: View of SP-D-13 in PSS W-D-11, facing north.



Photograph C-14: View of PUB W-D-1, facing south.





Photograph C-15: View of PUB W-D-2, facing north.



Photograph C-16: View of PUB W-D-4, facing north.





Photograph C-17: View of PUB W-D-5, facing north.



Photograph C-18: View of PUB W-D-6, facing north.





Photograph C-19: View of PUB W-D-7, facing northeast.



Photograph C-20: View of PUB W-D-8, facing east.





Photograph C-21: View of PUB W-D-10, facing east.



Photograph C-22: View of PUB W-D-12, facing west.





Photograph C-23: View of PUB W-D-13, facing southeast.



Photograph C-24: View of PUB W-D-14, facing southeast.





Photograph C-25: View of PUB W-D-15, facing west.



Photograph C-26: View of PUB W-D-16, facing north.





Photograph C-27: View of PUB W-D-17, facing north.



Photograph C-28: View of PUB W-D-18, facing east.





Photograph C-29: View of PAB W-D-19, facing south.



Photograph C-30: View of PUB W-D-20, facing northeast.





Photograph C-31: View of PUB W-D-21, facing west.



Photograph C-32: View of PAB W-D-22, facing north.





Photograph C-33: View of PUB W-D-23, facing west.



Photograph C-34: View of PUB W-D-25, facing north.





Photograph C-35: View of PUB W-D-26, facing northeast.



Photograph C-36: View of flooded PEM W-D-27, facing east.





Photograph C-37: View of ephemeral Stream (S)-D-1, facing east.



Photograph C-38: View of ephemeral S-D-2, facing north.





Photograph C-39: View of ephemeral S-D-3, facing south.



Photograph C-40: View of intermittent stream Spring Branch, S-D-4, facing east.





Photograph C-41: View of ephemeral S-D-5, facing north.



Photograph C-42: View of ephemeral S-D-6, facing north.





Photograph C-43: View of ephemeral S-D-7, facing northeast.



Photograph C-44: View of ephemeral S-D-8, facing south.





Photograph C-45: View of ephemeral S-D-9, facing south.



Photograph C-46: View of ephemeral S-D-10, facing west.





Photograph C-47: View of ephemeral S-D-11, facing west.



Photograph C-48: View of ephemeral S-D-12, facing northeast.





Photograph C-49: View of intermittent S-D-13, facing north.



Photograph C-50: View of intermittent S-D-14, facing north.





Photograph C-51: View of ephemeral S-D-15, facing north.



Photograph C-52: View of intermittent S-D-16, facing south.





Photograph C-53: View of intermittent S-D-17, facing north.



Photograph C-54: View of ephemeral S-D-18, facing north.





Photograph C-55: View of intermittent S-D-19, facing northeast.



Photograph C-56: View of intermittent stream Republican Creek, S-D-20, facing north.





Photograph C-57: View of intermittent S-D-21, facing south.



Photograph C-58: View of intermittent S-D-22, facing southwest.





Photograph C-59: View of ephemeral S-D-23, facing northwest.



Photograph C-60: View of ephemeral S-D-24, facing north.





Photograph C-61: View of intermittent S-D-25, facing south.



Photograph C-62: View of perennial stream Fourmile Creek, S-D-26, facing northwest.





Photograph C-63: View cool season meadow from Photo Point (PP)-D-1, facing north.



Photograph C-64: View of active agricultural field from PP-D-2, facing east.





Photograph C-65: View of upland forest from PP-D-3, facing west.



Photograph C-66: View of wind break from PP-D-4, facing northwest.





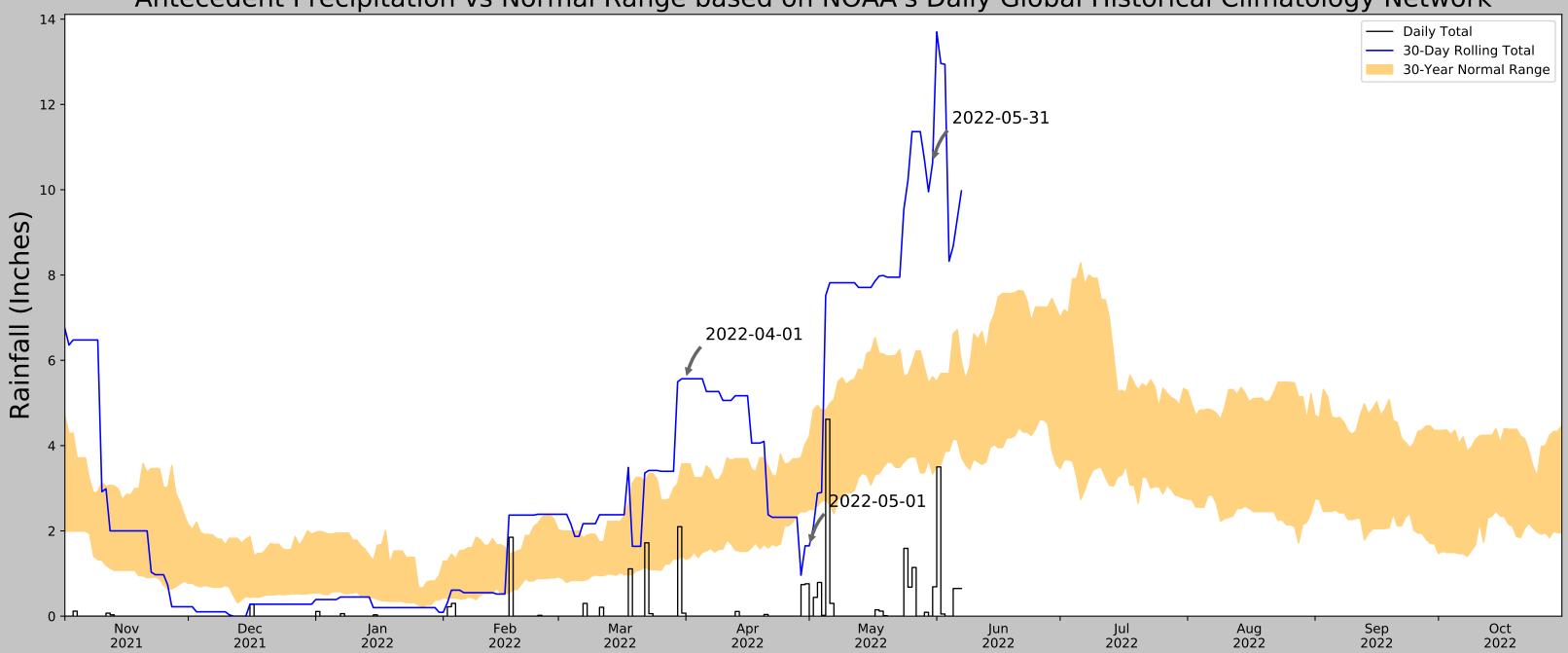
Photograph C-67: View of 2-track from PP-D-5, facing north.





	Appendix D	-Antecedent	Precipitation	Tool Results
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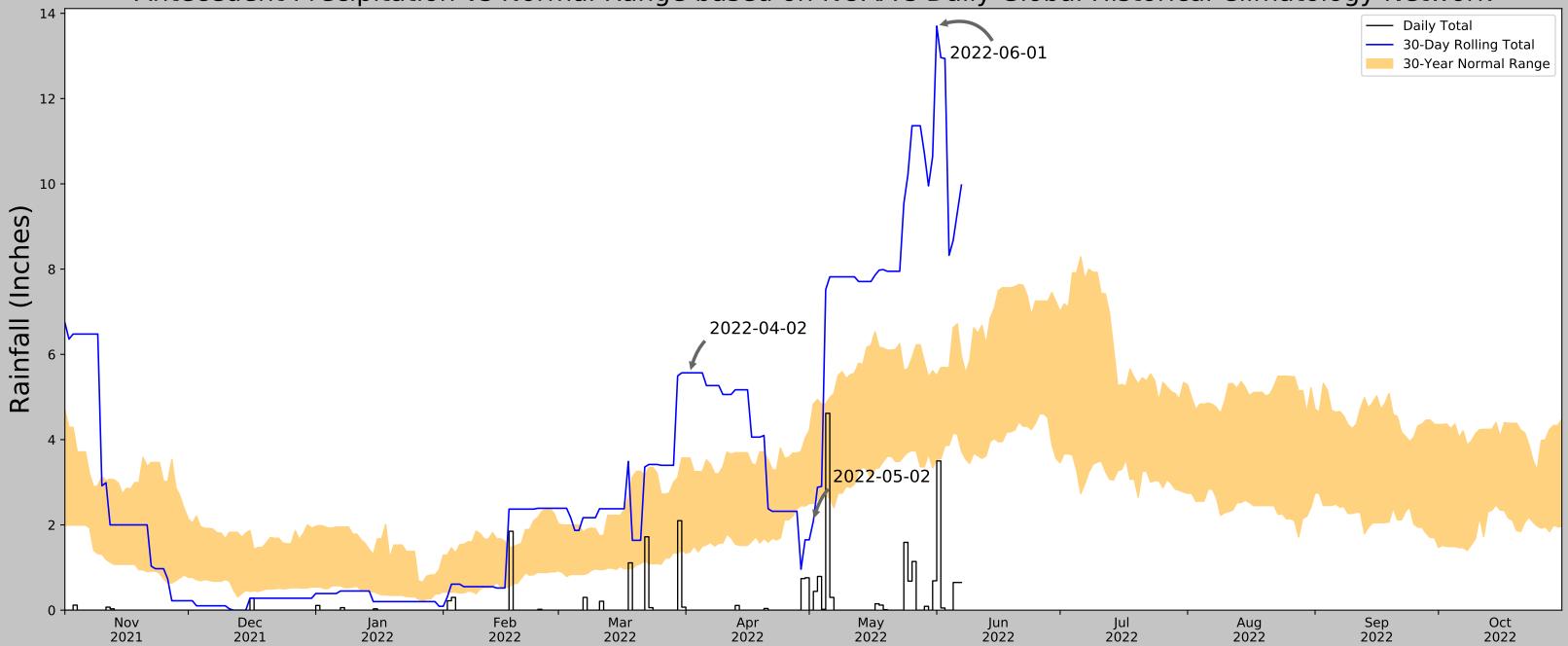
Coordinates	37.680398, -97.176049
Observation Date	2022-05-31
Elevation (ft)	1314.47
Drought Index (PDSI)	Mild drought
WebWIMP H ₂ O Balance	Wet Season

CORPS OF ENGINEERS	Figure and tables made by the Antecedent Precipitation Tool Version 1.0
REGULATORY PRESENT	Written by Jason Deters U.S. Army Corps of Engineers

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight		Product
2022-05-31	3.333858	5.616929	10.641733	Wet	3	3		9
2022-05-01	2.501181	4.215748	1.649606	Dry	1	2		2
Weath	er Station Name	Coord	dinates Elevation	ı (ft) Distance (mi)	Elevation ∆ We	ighted Δ Days	Normal	Days Antecedent

	2022-05-01	2.501181	4.215748	1	1.649606	Dry		1	2	2
Weather Station Name		Coord	inates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted ∆	Days Normal	Days Antecedent	
		YSVILLE .2 NNW	37.5684, -97	7.3527	1275.919	12.383	38.551	6.05	115	0
	RO	SE HILL 2.9 ESE	37.55, -97		1275.919		38.551	5.052	777	0
		DRADO 7.9 NNW	37.9333, -96		1403.871			12.712	148	2
		ORADO 0.6 SSE	37.813, -96		1332.021		17.551	9.268	1447	0
	D	OUGLASS 3.8 W	37.5194, -9	7.081	1275.919	12.281	38.551	6.0	83	0
		LEON 7.5 SW	37.6125, -96		1263.123	16.825	51.347	8.435	480	0
	PC	OTWIN 0.2 WNW	37.9406, -97	7.0225	1349.081	19.836	34.611	9.613	1	0
		SE HILL 2.7 ESE	37.5533, -97		1292.979		21.491	4.754	1288	83
		AUGUSTA 1.0 S	37.6782, -96	5.9723	1226.05	11.143	88.42	6.0	1251	5
	TO\	WANDA 4.9 NNE	37.8647, -96		1388.123		73.653	8.921	9	0
	NE'	WTON 0.8 WNW	38.0475, -97	7.3559	1446.85	27.195	132.38	15.838	1	0
	PA	RK CITY 0.2 ESE	37.7948, -97		1391.076	11.124	76.606	5.858	124	0
	HA	YSVILLE 3.5 SW	37.5361, -97		1289.042		25.428	7.516	4	0
		WICHITA 2.5 E	37.6893, -97		1365.158		50.688	3.315	2	0
		MAIZE 5.7 S	37.6916, -97	7.4797	1365.158	16.621	50.688	8.322	1	0
	BE	LLE PLAINE 4 W	37.3931, -97	7.3497	1231.955	22.013	82.515	11.722	3227	0





HAYSVILLE 3.5 SW

BELLE PLAINE 4 W

WICHITA 2.5 E

MAIZE 5.7 S

Coordinates	37.680398, -97.176049
Observation Date	2022-06-01
Elevation (ft)	1314.47
Drought Index (PDSI)	Mild drought (2022-05)
WebWIMP H₂O Balance	Dry Season

ORPS OF	Figure and tables made by the
STC STC	Antecedent Precipitation Tool
	Version 1.0
	Written by Jason Deters
TORY PROG	U.S. Army Corps of Engineers

	30 Days Ending	30 th %ile (in)	70 th %ile (in)	Obse	erved (in)	Wetness Condition		Condition Va	lue Month	Month Weight		Product	
	2022-06-01	3.527953	5.499606	13	3.700788	700788			3			9	
	2022-05-02	2.501181	4.83937	2	2.090551		Dry		1	2		2	
		er Station Name		linates	Elevation		Distance (mi)	Elevation Δ	Weighted A		Normal	Days Antecedent	
		AYSVILLE .2 NNW	37.5684, -9		1275.9		12.383	38.551	6.0		115	0	
ROSE HILL 2.9 ESE		37.55, -9		1275.9		10.341	38.551	5.05		777	0		
EL DORADO 7.9 NNW		37.9333, -9				23.566	89.401	12.712		148	3		
EL DORADO 0.6 SSE		37.813, -9		1332.0		19.823	17.551	9.26		1447	0		
L		OOUGLASS 3.8 W	37.5194, -		1275.9		12.281	38.551	6.		83	0	
LEON 7.5 SW		37.6125, -9		1263.1		16.825	51.347	8.43		480	0		
		OTWIN 0.2 WNW	37.9406, -9		1349.0		19.836	34.611	9.61		1	0	
ROSE HILL 2.7 ESE		37.5533, -9		1292.9		10.083	21.491	4.75		1288	82		
AUGUSTA 1.0 S		37.6782, -9		1226	.05	11.143	88.42	6.		1251	5		
		WANDA 4.9 NNE	37.8647, -9		1388.1	_	17.037	73.653	8.92		9	0	
		WNW 8.0 NOTW	38.0475, -9		1446		27.195	132.38	15.83		1	0	
	P.A	ARK CITY 0.2 ESE	37.7948, -9	7.3193	1391.0)76	11.124	76.606	5.85	3	124	0	

15.809

16.621

22.013

6.62

25.428

50.688

50.688

82.515

7.516

3.315

8.322 11.722 4

2 1 3227 0

1289.042

1365.158

1365.158

1231.955

37.5361, -97.4002

37.6893, -97.2966

37.6916, -97.4797

37.3931, -97.3497