Prospectus for the St. Francis Sunken Lands Mitigation Bank Poinsett County, Arkansas

Arkansas Department of Transportation

August 2021

The Arkansas Department of Transportation (ARDOT) proposes the establishment of a wetland compensatory mitigation bank in Poinsett County, Arkansas. The site is located south of Highway 63, near Marked Tree, Arkansas (Figure 1). The St. Francis Sunken Lands Wildlife Management Area (WMA) borders the western and northern sides of the property. The 280.8-acre site consists of portions of sections 5, 6 and 7, Township 10 North, Range 6 East and sections 31 and 32, Township 11 North, Range 6 East. The property was purchased by ARDOT expressly to compensate for unavoidable wetland impacts resulting from highway construction and maintenance activities. The property would be used for compensatory mitigation for unavoidable impacts resulting from ARDOT highway activities authorized under Section 404 of the Clean Water Act.

A. Management Goal and Objectives: The management goal for the mitigation bank is the restoration and enhancement of 231.5 acres of bottomland hardwood wetlands, enhance 65 acres of open wetland habitat, and restore 35 acres of open wetland habitat (Figure 2). Objectives include enhancement of existing wetlands by removing nonnative species and planting bottomland hardwood tree species; 65 acres of open wetland habitat restoration of existing wetlands through nonnative species removal; and 35 acres of open wetland habitat restoration of existing wetlands through nonnative species removal and construction of small depressions. The small, randomly spaced depressions will cover approximately 15-20% of the property, as hydrogeomorphic (HGM) surveys of the Arkansas Delta suggest. Historically, this area was a bottomland hardwood forest characterized by depressional microtopography. ARDOT plans to restore this historical landscape by creating a series of shallow, north-south trending swales, which will be separated by low, sandy ridges of relative uplands (1 to 3 feet high).

The proposed St. Francis Sunken Lands Mitigation Bank is directly adjacent to the Arkansas Game and Fish Commission's (AGFC) St. Francis Sunken Lands Wildlife Management Area. It is ARDOT's goal to have this proposed mitigation bank put under AGFC's management, once proper approvals have been received and the bank has been deemed successful, as part of the St. Francis Sunken Lands WMA. ARDOT has discussed the proposed management goals and objectives with the AGFC - St. Francis Sunken Lands WMA personnel. ARDOT, following AGFC recommendations, will enhance approximately 65 acres as open wetland habitat to create a diversity of wetland habitats on the proposed bank site. The open wetland habitat will allow for small game, turkey, and potentially quail habitat that is much needed on the St. Francis Sunken Lands WMA.

B. Establishment and Operation: An Interagency Review Team (IRT) would facilitate the establishment of the mitigation bank or area. The IRT would allow review and seek consensus from Federal, state, and public entities on the Mitigation Banking Instrument (MBI). The US Army Corps of Engineers Little Rock District (SWL) would serve as Chair of the IRT and will make final decisions regarding the terms and conditions of the MBI. ARDOT would be the sponsor of the bank and owner of the

mitigation property and would be responsible for all mitigation and monitoring actions.

Agencies invited to participate on the IRT include the U.S. Environmental Protection Agency, Region VI (EPA); the U.S. Fish and Wildlife Service, Region IV (FWS); the Federal Highway Administration, Arkansas Division (FHWA); the Natural Resources Conservation Service (NRCS), the Arkansas Department of Energy and Environment (ADEE); the Arkansas Game and Fish Commission (AGFC); the Arkansas Natural Heritage Commission (ANHC); and the Arkansas Natural Resources Conserve Commission (ANHC).





Photography: January 2017

C. Proposed Service Area: The geographic service area (Figure 3) would include three sub-basins (8-digit HUCs). This includes the Lower St. Francis (08020203), the L'anguille (08020205), and the Little River Ditches (08020204). These sub-basins all are included in the Lower Mississippi–St. Francis sub-region (0802) and St. Francis basin (080202). For accounting purposes, the corresponding USGS cataloging codes are listed below in Table 1.

HUC	Sub-basin Name	Service Area			
08020203	Lower St. Francis	Primary			
08020204	Little River Ditches	Secondary			
08020205	L'anguille	Secondary			

Table 1. USGS Hydro	logic Unit Codes for	Sub-Basins in the Ge	ographic Service Area
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- **D. General Need and Feasibility**: ARDOT is required to mitigate unavoidable losses to wetlands due to highway construction and maintenance projects in the proposed service area. Currently, this service area is unserved by any commercial compensatory mitigation banks.
- **E. Ownership**: ARDOT is the owner of the property and has recorded a restriction on the Warranty Deed to the property. The restriction requires that any activity on the property complies with the terms of a mitigation plan or banking instrument. ARDOT will manage the property for the operational life of the bank. The operational life of the bank terminates when compensatory mitigation credits have been exhausted and the bank site is self-sustaining. ARDOT may deed the property to or enter into a management agreement with an appropriate state or Federal agency provided the agency manages the property in accordance with the provisions of the MBI.

ARDOT bought the property with an existing Channel Improvement and Diversion Dam Easement and a 100-foot transmission line easement. The Channel Improvement and Diversion Dam Easement is designated as Tract No. 206 E, Central Ditch, Arkansas, St. Francis Basin Project. This easement grants a "perpetual and assignable right and easement to construct, operate and maintain channel improvement works on, over and across the land...including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, building, improvements and/or other obstructions therefrom; to excavate, dredge, cut away and remove any and all of said land and to place thereon dredge or spoil material..." The 280.8-acre site, minus both easements, leaves 231.5 acres eligible for wetland credit, refer to Figure 2.

F. Long-term management: ARDOT is responsible for securing adequate funding to monitor and maintain the mitigation bank throughout its operational life, as well as beyond the operational life if not self-sustaining. ARDOT will be responsible for securing sufficient funds to cover contingency actions in the event of default or failure. Additionally, ARDOT will be responsible for providing alternative compensatory mitigation if it is determined necessary by the US Army Corps of Engineers.



- **G.** Qualifications of the sponsor: ARDOT is presently the owner and sponsor of ten mitigation banks, totaling approximately 2,868.9 acres of wetland mitigation property managed according to approved banking instruments.
- H. Ecological Suitability: The primary considerations for site selection were watershed needs, baseline conditions and habitat connectivity. The proposed mitigation bank is surrounded by the AGFC's St. Francis Sunken Lands WMA to the north and west. The Arkansas Department of Natural Heritage has records for several rare species on and adjacent to the proposed mitigation bank including: the federally listed fat pocketbook (*Potamilus capax*) and pondberry (*Lindera melissifolia*); state tracked species such as corkwood (*Leitneria floridana*), tapered pondhorn (*Uniomerus declivis*), pyramid pigtoe (*Pleurobema rubrum*), monkeyface (*Quadrula metanerva*), and the western fanshell (*Cyprogenia aberti*) mussels.

The proposed St. Francis Sunken Lands Mitigation Bank lies within the floodplain of the St. Francis River, and is seasonally inundated by flood waters in the winter and spring months. Historic aerial imagery from 1957 illustrates that the proposed bank site was once all bottomland hardwood forest and is an ideal candidate for bottomland hardwood restoration (Figure 4). These areas were cleared, drained and leveled to expand agricultural production. Hydraulic gauge data shows that this site is underwater regularly—every year, see Table 2. Upland areas that border the property will function as a buffer and wildlife sanctuary for terrestrial wildlife and migratory birds in times of flooding.

Soils on the site are mapped (Figure 5) as Sharkey by the USDA (*Soil Survey of Poinsett County, Arkansas* 1977). Sharkey soils have a 0 to 1 percent slope and are frequently flooded. Sharkey soils are described as very deep, poorly to very poorly drained, very slowly permeable soil on flood plains and low terraces of the Mississippi River.

The site is in the St. Francis Lowlands Ecoregion (Level IV) of the Mississippi Alluvial Plain (Level III). Native vegetation on the floodplains and low terraces include overcup oak (*Quercus lyrata*), Nuttall oak (*Quercus texana*), water oak (*Quercus nigra*), hickories (*Carya spp.*), willow (*Salix sp.*), American elm (*Ulmus americana*), river birch (*Betula nigra*), maples (*Acer spp.*), blackgum (*Nyssa sylvatica*), sweetgum (*Liquidambar styraciflua*), cottonwood (*Populus deltoides*) and sycamore (*Platanus occidentalis*) (Woods et al. 2004).



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Figure 4 Historic Imagery



HEC-RAS Plan: FinalPlan River: St. Francis Rive Reach: RM 58.22-86.35

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
	Turor eta		(cfs)	(ft)	(ft)	(ft)	(ft)	(fVft)	(ft/s)	(sq ft)	(ft)	
RM 58 22-86.35	83.00	1.01 Year	9327.00	179.20	207.63	187.32	207.70	0.000024	2,24	4157.86	577 32	0.09
RM 58 22-86 35	83.00	2 Year	23449.00	179.20	212.96	192.23	213.12	0.000048	3.59	22535.45	9657.12	0.13
RM 58 22-86 35	83.00	5 Year	35347.00	179 20	213.99	195.32	214.20	0.000069	4.43	32722.04	9869.52	0.15
RM 58 22-86.35	83.00	10 Year	44565.00	179 20	214.81	197.44	215.02	0.000076	4.74	40811_02	9877_86	0.16
RM 58,22-86,35	83.00	25 Year	57826.00	179 20	215,89	200,16	216,10	0.000081	5.02	51483_69	9888.85	0.17
RM 58 22-86 35	83.00	50 Year	68934.00	179.20	216,76	202.28	216.95	0.000082	5 15	60051.29	9896_27	0_17
RM 58.22-86.35	83.00	100 Year	81146.00	179.20	217.67	204.17	217.85	0.000082	5.24	69096.21	9902.65	0,17
RM 58 22-86.35	83.00	500 Year	114581.00	179,20	220,02	214.36	220,17	0.000077	5,35	92372.45	9917.89	0,17
RM 58.22-86.35	82.53	1.01 Year	9327.00	179,60	207,55	188,36	207.62	0.000045	2.05	4542.02	626.50	0.08
RM 58.22-86.35	82.53	2 Year	23449.00	179.60	212.72	192.77	212.93	0.000120	3.79	8706.47	9508.37	0,14
RM 58 22-86.35	82,53	5 Year	35347.00	179.60	213.91	195,51	213.99	0.000076	3 12	38890.32	10842.32	0.11
RM 58,22-86,35	82.53	10 Year	44565.00	179.60	214.72	197.37	214.80	0.000077	3.22	47738 47	10849.77	0.11
RM 58 22-86 35	82.53	25 Year	57826.00	179.60	215.80	199 94	215.87	0.000076	3,30	59418.12	10859.59	0,11
RM 58.22-86.35	82.53	50 Year	68934.00	179.60	216.66	201.87	216.72	0.000074	3.31	68812.67	10867,16	0.11
RM 58 22-86 35	82.53	100 Year	81146.00	179,60	217.58	203.70	217.63	0.000071	3.32	78741.77	10873.69	0,11
RM 58.22-86.35	82.53	500 Year	114581.00	179.60	219.93	213,01	219,98	0.000063	3,30	104330.20	10890.11	0.11
RM 58 22-86.35	82.48	1.01 Year	9327.00	179.60	207.55	188,36	207.60	0.000036	1,83	5812.87	626.43	0.07
RM 58.22-86.35	82.48	2 Year	23449.00	179,60	212.74	192.78	212.87	0.000088	3 25	13683.12	9431.62	0.12
RM 58.22-86.35	82.48	5 Year	35347.00	179,60	213.71	195,57	213.93	0.000145	4 29	16817 46	10629.48	0,16
RM 58 22-86 35	82.48	10 Year	44565.00	179.60	214,45	197.92	214,72	0,000183	4.92	19363.65	10789.28	0.18
RM 58.22-86.35	82.48	25 Year	57826.00	179,60	215.45	200.35	215.76	0.000222	5.57	22857.93	10856.38	0.20
RM 58.22-86.35	82.48	50 Year	68934.00	179.60	216.28	202.01	216,61	0.000241	5.94	25783.56	10863.97	0.20
RM 58 22-86.35	82.48	100 Year	81146.00	179.60	217.17	203.52	217,52	0,000255	6.24	28919.64	10870.77	0.21
RM 58.22-86.35	82.48	500 Year	114581.00	179.60	219.49	207.43	219,85	0.000267	6,75	37110.65	10887.27	0,22
RM 58 22-86 35	82,475		Mult Open									
RM 58.22-86.35	82.47	1.01 Year	9327.00	179.60	207.55	188.36	207,59	0.000036	1.83	5809,50	625,83	0.07
RM 58.22-86.35	82.47	2 Year	23449.00	179 60	212.72	192.78	212.86	0.000088	3.25	13645.34	9409.05	0.12
RM 58 22-86 35	82.47	5 Year	35347.00	179.60	213 69	195.57	213.91	0.000145	4.29	16768 25	10624.79	0.16
RM 58 22-86.35	82.47	10 Year	44565_00	179,60	214_43	197,92	214.69	0.000184	4_93	19291.46	10788.57	0.18
RM 58 22-86 35	82 47	25 Year	57826.00	179.60	215_41	200.35	215.73	0.000225	5.60	22723.36	10856.04	0,20
RM 58 22-86 35	82.47	50 Year	68934.00	179.60	216.24	202.01	216 58	0.000245	5.97	25636.53	10863.58	0.21
RM 58 22-86.35	82.47	100 Year	81146.00	179.60	217.12	203,52	217.48	0.000258	6.27	28761.64	10870.45	0,21
RM 58.22-86.35	82.47	500 Year	114581,00	179.60	219.44	207,43	219.81	0,000271	6.79	36935.83	10886.94	0.22
RM 58.22-86.35	82.42	1.01 Year	9327.00	179.60	207.51	188_36	207 58	0.000045	2.06	4531.54	623.09	0.08
RM 58 22-86.35	82.42	2 Year	23449.00	179_60	212.61	192.77	212.81	0.000118	3.76	8545.56	9311.85	0.14
RM 58.22-86.35	82.42	5 Year	35347.00	179.60	213.74	195.51	213.81	0.000066	2.90	37148 47	10715.72	. 0_11
RM 58.22-86.35	82.42	10 Year	44565.00	179.60	214.50	197_37	214.57	0.000067	2.97	45368.78	10847.78	0.11
RM 58.22-86.35	82.42	25 Year	57826.00	179.60	215.51	199.94	215.57	0.000065	3.01	56332.27	10857.00	0.11
RM 58 22-86.35	82.42	50 Year	68934.00	179.60	216.35	201_87	216.40	0.000061	2.99	65459,15	10864.67	0.10
RM 58 22-86.35	82.42	100 Year	81146.00	179.60	217.25	203_70	217.29	0.000057	2.96	75205.10	10871.36	0.10
RM 58.22-86.35	82.42	500 Year	114581.00	179.60	219.58	212.94	219.62	0.000048	2.86	100587.60	10887.86	0.09
RM 58 22-86.35	81.88	1.01 Year	9327.00	190.50	207,27	195.53	207.36	0.000090	2,46	3787.33	811.45	i 0.11
RM 58 22-86.35	81.88	2 Үөөг	23449.00	190.50	212.39	198.69	212.46	0.000073	2,62	25680.09	9260_15	i 0,11
RM 58 22-86 35	81.88	5 Year	35347.00	190.50	213,50	200.83	213.56	0.000080	2.86	36046.16	9367.01	0,11
RM 58 22-86 35	81.88	10 Year	44565.00	190.50	214.26	202.30	214.31	0.000081	2.95	43113.79	9374.34	i 0,11
RM 58 22-86.35	81.88	25 Year	57826.00	190.50	215 27	204.25	215.32	0,000080	3.02	52619.52	9382.62	2 0.11
RM 58.22-86.35	81.88	50 Year	68934.00	190.50	216.12	205.74	216.17	0.000076	3,02	60615.78	9389.16	0.11 ن
RM 58 22-86 35	81.88	100 Year	81146.00	190.50	217.03	207.26	217,08	0.000072	3.02	69154,95	9396 14	0.11
RM 58.22-86.35	81.88	500 Year	114581.00	190.50	219.39	212.71	219.43	0.000062	2.98	91379.41	9414.04	0,10

Table 2. HEC-RAS Data





Figure 6. Close-up of depression (microtopography) (November 2015).



Figure 7. Typical soils (November 2015).



Figure 8. Typical view of the existing land use and agricultural practices of the site (November 2015).