

CESAM-EN-GG 27 Mar 2020

MEMORANDUM FOR EN THRU: EN-GG EN-G

SUBJECT: Trip Report, Buford Dam Road Project

LOCATION: Buford Dam, GA
 DATE: Site Visit 5 Mar 2020

3. **ATTENDEES:** Lewis Grimm, P.E., Federal Highway Administration

Rich McDaniel, Federal Highway Administration Jim Talley, P.E., Federal Highway Administration Tim Rainey, Buford Dam Project Manager

Randy Flint, OP, Buford Dam

Scott Ellzey, P.E. Jay Caldwell T.J. Rickey, Jr. Greg Hall

James DeFalco, P.E. Thomas J. Powers, EN-GG

- 4. PURPOSE: The purpose was to walk the alignment of the proposed Buford Dam Road project located downstream (D/S) of the Main Dam and observe existing conditions. The walk began on the morning of 5 Mar 2020 at a location on the west side of the existing Buford Dam Road, approximately 250 ft. north of the intersection of Sweetwater Dr. with Buford Dam Rd.
- A reservoir level of +1075.58 ft. was recorded at 1000 on 05 Mar 2020 for the reservoir elevation above datum on a USGS website accessible for Buford Dam/Lake Lanier:

https://waterdata.usqs.gov/ga/nwis/uv?cb\_00062=on&format=qif\_default&site\_no=0233 4400&period=&begin\_date=2020-02-05&end\_date=2020-03-052720. The reservoir level was just over a foot higher at +1076.72 ft. on 20 Feb, two weeks prior to 5 Mar 2020. The pool of record was +1077.15 ft., set in April 1964.

6. DISCUSSION: The site visit attendees met earlier in the morning of 5 Mar at the Conference Room at the Project Management office before traveling to the north end of Saddle Dike 1 approximately at 1000. The attendees and Park Ranger Daniel Barnes observed project features along Saddle Dikes 1 and 2 along the alignment which had been outlined with red and pink flagging previously by personnel at the project. Observations made by this attendee are included herein.

Weather was cool (approximately 48°F) and overcast with periods of light rain. The area walked was wooded for the most part.

Clear seepage due possibly to a combination of the high water event and high rainfall amounts (close to 12 inches over the month prior to the site visit) was noted at the toes of both Saddle Dike 1 during the site visit and on Saddle Dike 2 (refer to Figures 1 and 2).

Coordinates of photographed locations were obtained by the GPS system in the cell phone used to take photographs. Photographs and coordinates of features of note are presented below.

Figure	Feature	Latitude	Longitude
1	Saddle Dike 1 seepage at toe	34.171133°	-84.078565°
2	Saddle Dike 2 seepage at toe	34.165389°	-84.076825°
3	SD2 Weir 1	34.165344°	-84.076989°
4	Flowing areas above Weir 1	34.165344°	-84.076989°
5	SD2 Weir 2	34.165553°	-84.077392°
6	View D/S of Weir 2	34.165553°	-84.077453°
7	Eroding Drainage Way, SD2	34.165540°	-84.078520°
8	Fill Area, SD2	34.167440°	-84.078410°

Locations of the features of note are also presented on USGS topographic maps on Figures 9 and 10 near the end of this report.





**Figure 1** Figure 7: View S along the toe of Saddle Dike 1, saturated soil and leaf debris; clear water was observed at toe (photo taken 3/4/20 at location 34.171133, -84.078565; refer to aerial), for a 100 ft. length along toe, and for a distance 8 ft. perpendicular to toe near central portion of the saturated soil. Tape measure is extended 2.0 ft. Upper pool at EL +1075.24 ft. is left of the left photo. The full 2,300 ft. length of SD1 is shown in the photo on the right (imagery date 3/16/19). SD1 structural height is 36 ft.

Spongy ground was observed over a small area at the toe of Saddle Dike 2 at coordinates 34.16528°, -84.07659° and for a distance of 10 ft. up the embankment slope. Springs and associated flows were noted at the head of wet weather streams in unconstructed areas located downslope of the small area of spongy ground. No sediment or discoloration of the flowing spring water was discernable. Clear water flowing over the notch of Weir #1 was 5/8-inch in depth. Clear water flowing over the notch of Weir #2 was 1 7/8-inch in depth.



**Figure 2** Upper left is view S and below the toe of Saddle Dike 2; upper right is view NW, saturated soil and leaf debris; clear water was observed at toe (photo taken 3/4/20 at location 34.165389, -84.076825; refer to aerial), for a 150 ft. length along toe, and for a distance 10 ft. perpendicular to toe near central portion of the saturated soil. Tape measure is extended 2.0 ft. Upper pool at EL +1075.24 ft. is left of the left photo. The full 2,300 ft. length of SD2 is shown in the photo on the right (imagery date 3/16/19). SD2 structural height is 48 ft.



Figure 3 D/S of SD 2. Note pink alignment marker flag in background.



**Figure 4** Flowing area below SD2 and above Weir 1. Note red and pink alignment marker flags in background.

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Figure 5 Weir 2, D/S of SD2; flow depth of 1 7/8 inches.



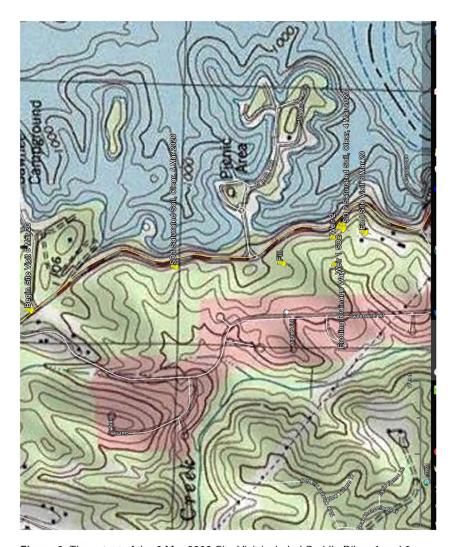
Figure 6 D/S view of Weir 2 below SD2.



**Figure 7** View of eroding drainage way D/S of SD2. This location is approximately 425 ft. east of a neighborhood on Sweetwater Drive. This water ultimately flows into Haws Creek which empties into the Chattahoochee River 0.1 mile D/S of the tailwater gaging station.



Figure 8 View of fill area west of SD2 and West Bank Park. Dumpsters stored also (not shown in photo).



**Figure 9** The extent of the 6 Mar 2020 Site Visit included Saddle Dikes 1 and 2 between Buford Dam Road at elevation 1106 ft. on the east and Sweetwater Dr. on the west. The site visit began on the north at the marked location, approximate elevation 1105 ft. and ended on the south at approximate elevation 1070 ft. Contour interval is 20 ft.

7

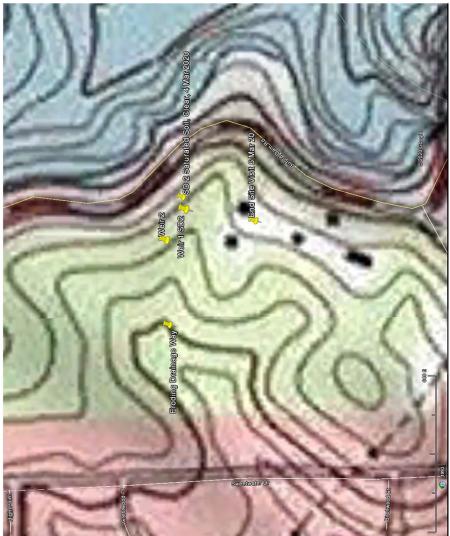
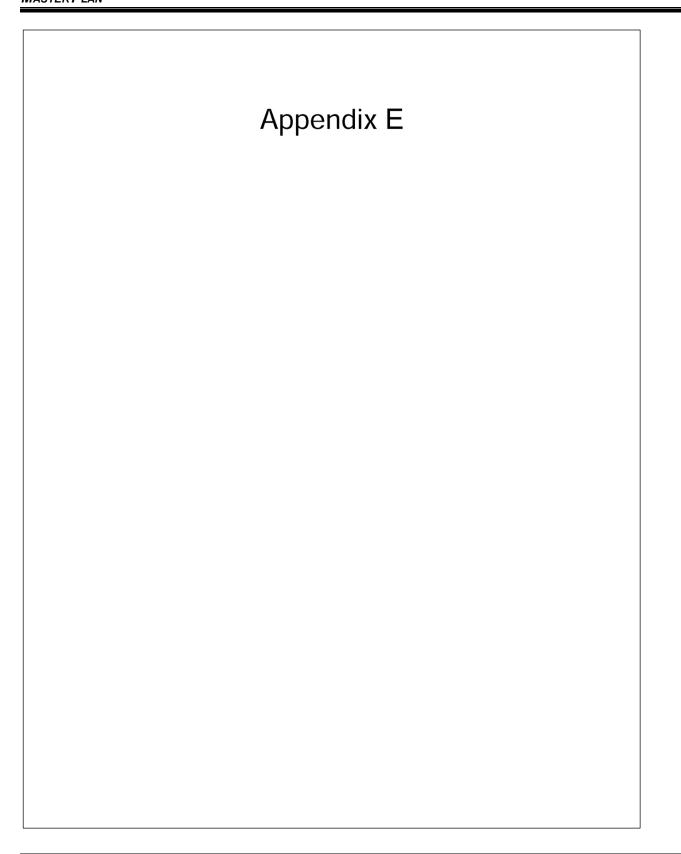


Figure 10 Enlargement of Saddle Dike 2 area on the south and features of note. The Main Dam is depicted on the upper right edge of the map. Contour elevation of the bold contour marked with "Eroding Drainage Way" is 1000 ft. Contour interval is 20 ft.

## 7. RECOMMENDATIONS:

Conduct a subsurface investigation of the area D/S of Saddle Dikes 1 and 2. Seepage and spring areas and drainage channels must be identified and characterized due to the potential for adversely affecting embankments and foundations supporting pavement structures and bridge foundations. Existing fill areas should also be characterized for the potential adverse effects of uncontrolled fill on embankments. Some effort may be required to determine a safe distance for the effects of settlement from embankments associated with the proposed D/S alignment of Buford Dam Road may have on existing damming embankments, Saddle Dikes 1 and 2 in particular.

Thomas J. Powers, P.E., P.G.



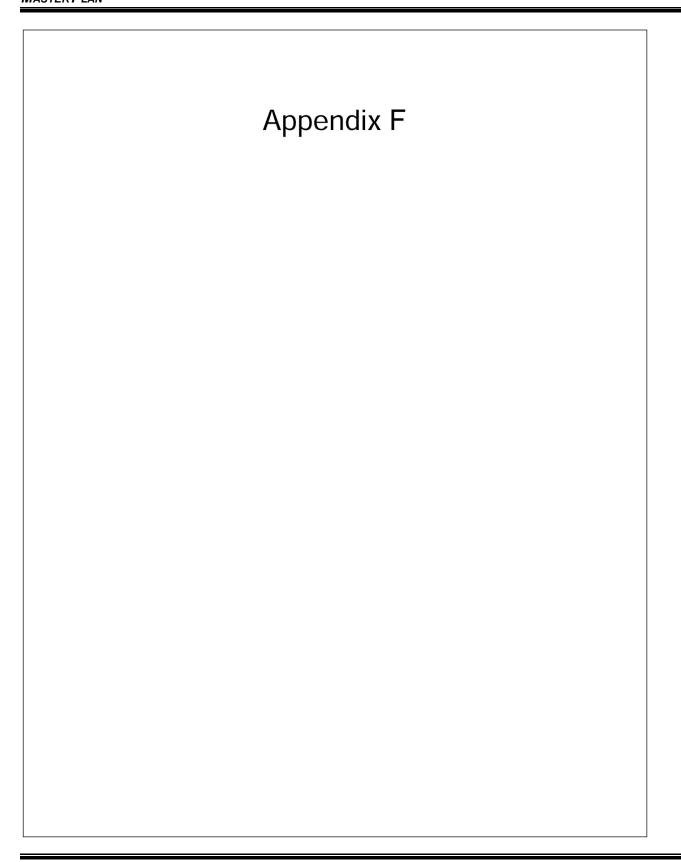
Project: Buf Project Num:	Buford Dam Road								10:22 AM
Assembly		Quantity	MOM	Unit Cost	Material	Labor	Equipment	SubBid	Total Cost
Facility: Clear and Grub	nd Grub			Type: Primary Facilit	Facilit				
FSA: BUILDII	BUILDING SHELL		0)	Size: 0.00 SF					
Assembly		Quantity	MOU	Unit Cos	Material	Labor	E ment	SubBid	Total Cost
G1010010101	Light Brush W/O Grub, Clearing	10.00	ACRE	\$3 0	\$0.00	\$1,854.08	\$1, 9	\$0.00	\$3,340.96
G1010020212	Clear Trees To 609.60mm (24") Dia W/D8 Cat	500.00	EA	35.99	\$0	\$7,232.77	\$10,764.50	\$0.00	\$17,997.27
G1010030316	> 304.80mm (12") and <= 609.60mm (24") Stump	200.00	EA	3.84	8	\$2,781.83	\$4,140.15	\$0.00	\$6,921.98
G1010040501	Dozer 78.33 kW (105 HP) D5, Grubbing & Stacking	806.67	ζ	69	\$0.00	\$486.17	\$723.59	\$0.00	\$1,209.75
G1020070401	Dump Charge	4,443.00	ζ	\$24.5	08,846.55	\$0.00	\$0.00	\$0.00	\$108,846.55
G1030020224	966, 3.06m3 (4 CY), Wheel Loader	26 0	Ή	\$218.32	\$0.00	\$2,217.20	\$3,459.11	\$0.00	\$5,676.31
G1030020288	19.88m3 (26 CY), Semi Dump	106		\$157.58	00	\$7,325.21	\$9,378.56	\$0.00	\$16,703.77
	FSA:	BUILDING	HELL						\$160,696.60
						Clear and	Clear and Grub Total Cost	<del>, i</del>	\$160 696 60
								į	
Assembly		Quantity	0	Unit Cost	Material	Labor	Labor Equipment	SubBid	Total Cost
Facility: Demolition	ion			Type: Primary Facilities	Facilities				
FSA: BUILDII	BUILDING SHELL			ze: 0.00 SF					
ᅙ		οσ		Unit Cost	Material	Labor	Equipment	SubBid	Total Cost
G1020020201	Demolish Bituminous Road W/Power Equipm	444.44	ζ	\$51.20	\$0.00	\$17,398.65	\$5,358.68	\$0.00	\$22,757.33
G1020070401	Dump Charge	666.67	Ç	\$24.50	\$16,332.37	\$0.00	\$0.00	\$0.00	\$16,332.37
G1030020222	926, 1.53m3 (2.0 C heel Loa	13.00	H	\$138.79	\$0.00	\$1,108.60	\$695.62	\$0.00	\$1,804.22
G1030020287	15.29m3 (20 C emi Dump	26.00	H	\$168.45	\$0.00	\$1,796.75	\$2,582.85	\$0.00	\$4,379.60
	FSA:	BUILDING SHELL	ÆLL						\$45,273.52
						Dem	Demolition Total Cost:	st:	\$45,273.52
Assembly		Quantity	MOM	Unit Cost	Material	Labor	Equipment	SubBid	Total Cost
Note: All Costs Include ACF, Markup Project Location: Atlanta, Georgia	Note: All Costs Include ACF, Markups and Escalation Project Location: Atlanta, Georgia	Area Cost Factor:	l	0.924					Page 1 of 5 2015 CB
	2003	Fecalation Rate		20.417					PACES 13340

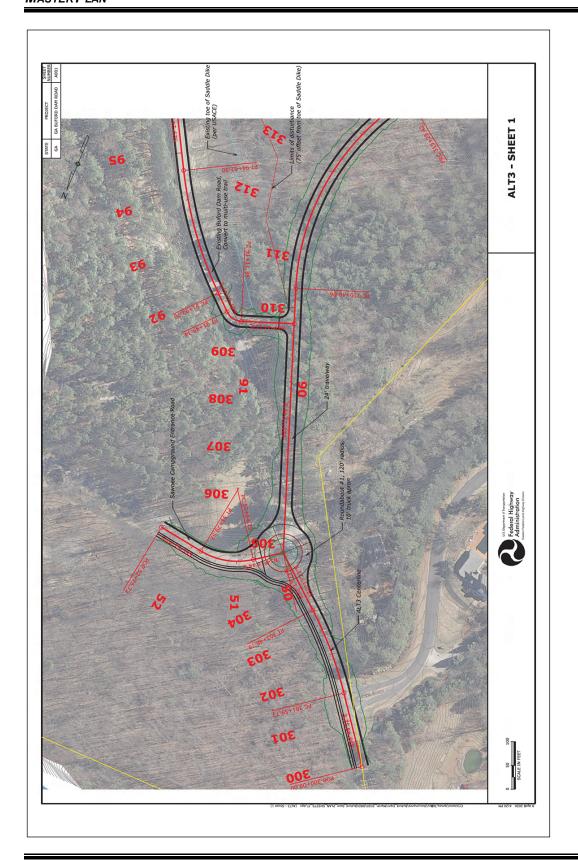
Project: Buf Project Num:	Buford Dam Road								10:22 AM
Facility: Excava	Facility:Excavation, Cut and Fill			Type: Primary Facilities	Facilities				
FSA: BUILDII	BUILDING SHELL			Size: 0.00 SF					
Assembly		Quantity	MON	Unit Cost	Mat ial	La	Equipment	SubBid	Total Cost
G1030030312	D10 W/U Blade & Single Shank Ripper, Bulldozer	85.00	품	\$395.76	\$0.00	\$7,617.73	26,021.52	\$0.00	\$33,639.26
G1030040424	Unclass Fill, Delivered, Off-Site	100,000.00	ζ	\$33.1	2,633,790.85	\$339,858.64	\$ 94.70	\$0.00	\$3,318,344.
G1030050517	Spread/Compact Lg Areas, 152.40mm (6") Lifts, D8 & Towed Sheepsft	100,000.00	ζ	37	\$0.00	\$70,488.76	\$66,8 28	\$0.00	\$137,300.04
	FSA:	BUILDING SHELL	HELL						\$3,489,283.49
					Exc	avation, Cut a	Excavation, Cut and Fill Total Cost:	st:	\$3,489,283.49
Assembly		Quantit	MOU	Unit Cost	aterial	Labor	Equipment	SubBid	Total Cost
Facility: Roadway (Advanced)	ay (Advanced)			Primary Faciliti	Faciliti				
FSA: BUILDII	BUILDING SHELL			Size 00					
Assembly		Quantity	Σ	nit Cost	Material	Labor	Equipment	SubBid	Total Cost
G1010010106	Heavy Brush, Light Trees, Clear, Grub, Haul	12.12	AC	\$9,227.85	\$0.00	\$83,595.73	\$28,245.75	\$0.00	\$111,841.48
G1030010103	Rough Grading, 0.0014 T (14G), 1 Pass	6,000.00	S	\$0.00	\$0.00	\$53.15	\$44.31	\$0.00	\$97.47
G1030010108	Fine Grading, 0.013 T (130G), 2 Passes	6,000.00	SY	\$1.73	\$0.00	\$107,178.88	\$59,306.13	\$0.00	\$166,485.01
G1030020202	Ditch Excavation, Normal Soil, Haul o oil 1.61 km (1 Mile)	-888.89	ζ	\$17.83	\$0.00	(\$9,271.01)	(\$6,578.14)	\$0.00	(\$15,849.15)
G1030020203	Roadway Soil Excavation, W/Scraper, & Haul Spoil			\$12.51	\$0.00	\$88,468.88	\$87,537.25	\$0.00	\$176,006.12
G1030020255	Trenching To 1828.80mm (6') Dp, Inc Bkfl & pac	208.11	CY	\$20.57	\$0.00	\$3,792.09	\$487.91	\$0.00	\$4,280.00
G1030050501	Compact Subgrade, 2 Lifts	22,666.67	Ç	\$4.63	\$0.00	\$99,860.21	\$5,066.43	\$0.00	\$104,926.63
G1030060602	Cement Stabilization	22,666.67	ВСУ	\$21.84	\$394,261.55	\$28,672.60	\$72,011.95	\$0.00	\$494,946.10
G2010010104	Asphalt, Interme Course (Line It 15% Waste)	3,480.00	TON	\$134.77	\$417,747.32	\$39,208.02	\$12,032.79	\$0.00	\$468,988.14
G2010030310	Prime Coat	32,000.00	SY	\$3.99	\$90,938.19	\$24,932.74	\$11,907.10	\$0.00	\$127,778.03
G2010030311	Tack Co	64,000.00	SY	\$2.03	\$56,444.40	\$49,865.48	\$23,814.20	\$0.00	\$130,124.08
G2010030312	Asphalt We Course, 1 Pass (Line Item Inc Waste)	1,733.04	TON	\$137.32	\$205,066.19	\$24,329.69	\$8,587.86	\$0.00	\$237,983.74
G2010040401	X Walk, Stop L Per Lane, Intersection Pa g	5.00	EA	\$56.00	\$175.57	\$70.08	\$34.34	\$0.00	\$279.99
G2010040402	Turn Lane, Per Lan rsection Painting	7.00	EA	\$36.45	\$161.20	\$63.08	\$30.90	\$0.00	\$255.18
G2010040403	Arrows, Per Lane, Inter n Painting	7.00	EA	\$52.45	\$34.87	\$222.99	\$109.25	\$0.00	\$367.12
Note: All Costs Inclu	Note: All Costs Include ACF, Markups and Escalation								Page 2 of 5
Project Location: Atlanta, Georgia	Atlanta, Georgia	Area Cost Factor:		0.924					2015 CB
COOC TO CONTRACT OF THE COOC TO COOC T	Det 2023	Escalation Rate:		20.417					PACES 1.3.34.0

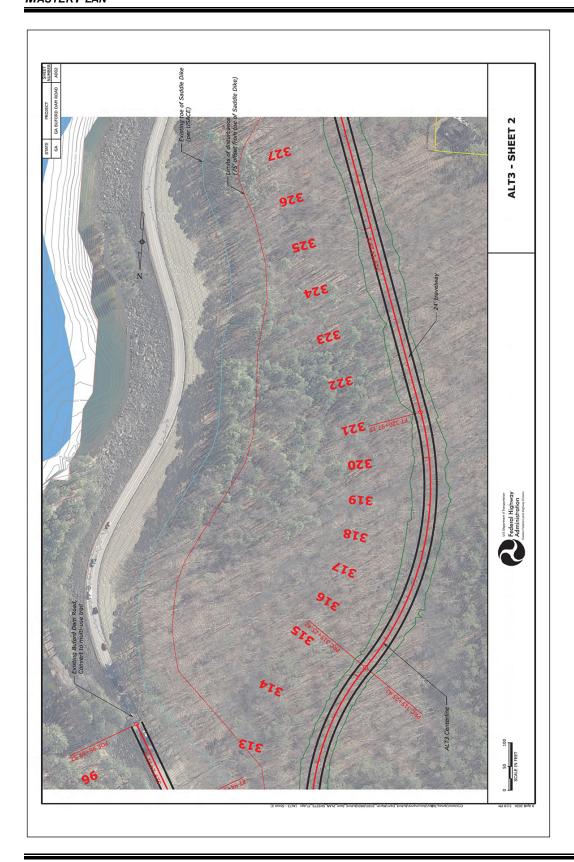
Project:         Buford Dam Road           Project Num:         G2010040405           G2010040406         Centerline Stripe, Yellow           G2010040407         Edge Stripe, Yellow           G2010040410         Street Signs, Average           G2010050501         Street Signs, Average           G2010050502         Guardrail, Single Rail, Wood Posts           G2010050502         Guardrail, Single Rail, Wood Posts           G2040010110         Barbed Wire Fencing, 3-Strand           G30300040403         15.85mm (52) Complete, 609.60mm (24") CMP Culvert           Wilheadwalls         5/15KV - 2777/480V, 75KVA Transformer, Oil, Pad Mid           G40100060501         1/C #4 Copper Grd 600V DB, Wire           G40100060502         1/C #6 Copper Grd 600V DB, Wire	CMP Culvert	3,960.00							4 00.01
	CMP Culvert	3,960.00							10:22 AM
	CMP Culvert	3,960.00							
	CMP Culvert	00 000 00	님	\$0.92	\$2,004.95	\$1,110.51	\$543.85	\$0.00	\$3,659.31
	CMP Culvert	74,000.00	님	\$2.43	\$36,845.6	417.46	\$7,065.28	\$0.00	\$58,328.39
	CMP Culvert	24,000.00	님	\$0.92	\$12,15	\$ 34	\$3,296.09	\$0.00	\$22,177.65
	CMP Culvert	8.00	EA	\$114.90	\$450.77	\$40	\$60.10	\$0.00	\$919.22
	OMP Culvert	8.00	EA	\$151.65	\$744.75	\$408.35	\$60.10	\$0.00	\$1,213.20
	OMP Culvert	681.82	H	\$61.90	\$37,304.54	\$4,274.03	629.04	\$0.00	\$42,207.60
	CMP Culvert	14.00	EA	\$2	\$2,252.22	\$1,000.46	24	\$0.00	\$3,399.93
	CMP Culvert	24,000.00	H	0.32	\$303,780 60	\$153,320.39	\$30,603.18	\$0.00	\$487,704.17
		7.00	EA	509.72	\$56.9	\$46,393.10	\$5,177.71	\$0.00	\$108,568.05
	il, Pad Mtd	1.00	EA	\$20,0	07.37	\$4,424.70	\$489.53	\$0.00	\$20,021.59
		2,159.09	F	\$3.	\$3,878.92	\$4,642.12	\$0.00	\$0.00	\$8,521.03
		1,477.27	님	\$2.94	\$1,749.22	\$2,589.85	\$0.00	\$0.00	\$4,339.07
G4010060503 3/C #6, W/#6 Ground 600 V DB, Wire		1,318	Ŀ	\$11.18	8.22	\$8,994.42	\$0.00	\$0.00	\$14,742.63
G4020010602 400W Hps Fixture		_	EA	\$1,332.23	\$6,0 2	\$3,323.52	\$0.00	\$0.00	\$9,325.64
G4020040303 6.09m (20') Brushed Aluminum Pole (Single Arm) W/Base	Arm) W/Base	7.00	EA	0	\$13,519.05	\$7,968.69	\$768.05	\$0.00	\$22,255.80
	FSA:	BUILDINGS	4		<b>\</b>				\$2,815,893.24
					Ä	oadway (Adva	Roadway (Advanced) Total Cost:	ost:	\$2,815,893.24
					Primary F	acilities Total	Primary Facilities Total Marked Up Cost:	ost:	\$6,511,146.84
Assembly		Quantity UOM	MOM	Unit Cost	Material	Labor	Equipment	SubBid	Total Cost
Facility:Site Work				Type: Supporting Facilities	ing Facilities				
Model: Cleanup and Landscaping									
Assembly		Quantity	MON	Unit Cost	Material	Labor	Equipment	SubBid	Total Cost
G1020070101 General Area anup		11.00	ACRE	\$5,938.74	\$0.00	\$43,415.96	\$21,910.21	\$0.00	\$65,326.17
G2050010101 Area Pre tion, .67 Level & .33 Slope		11.00	ACRE	\$35,914.65	\$344,334.33	\$20,386.21	\$30,340.59	\$0.00	\$395,061.13
G2050040401 Seeding, el & .33 Slope, Hydr Spread	Pi	11.00	ACRE	\$3,928.01	\$18,781.87	\$16,547.81	\$7,878.43	\$0.00	\$43,208.11
G2050040408 Fertilizer, Hydr ad		22.00	ACRE	\$401.63	\$194.03	\$8,641.93	\$0.00	\$0.00	\$8,835.96
G2050040413 L (3,000 Gal) Tank T Pass, 9.35 kgal/ha (1 C)	T , Per	88.00	ACRE	\$479.49	\$24,085.44	\$12,256.01	\$5,853.87	\$0.00	\$42,195.32
Note: All Costs Include ACF, Markups and Escalation									Page 3 of 5
Project Location: Atlanta, Georgia		Area Cost Factor:		0.924					2015 CB
Project Midpoint: Oct 2023		Escalation Rate:		20.417					PACES 1.3.34.0

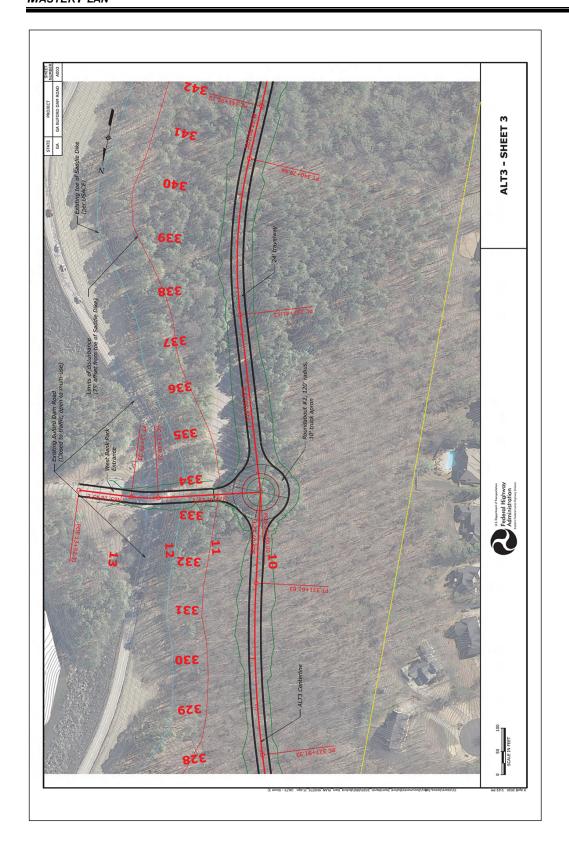
Project: Buford Dam Road		Project De	Project Detail Report					09 Apr 2020 10:22 AM
Project Num: G2050040415 Mowing		22.00 ACRE	\$460.68	\$0.00	0,134.99	\$0.00	\$0.00	\$10,134.99
	Model:	Model: Cleanup and Landscaping	scaping					\$564,761.69
				Cleanu	Cleanup and Lan	ping Total Cost:	st:	\$564,761.69
Assembly		Quantity UOM	Unit Cost	Material	Labor	ment	SubBid	Total Cost
Facility:Site Work			Туре: роп	porting Facilities				
Model: Overhead Electrical Distribution								
Assembly		Quantity UOM	Unit t	terial	Labor	Equipment	SubBid	Total Cost
G4010040301 1/0 Acsr Conductor		6,360.00 LF	\$5.	\$20,459.94	\$10,211.54	\$1,868.15	\$0.00	\$32,539.63
G4010040310 1/C #2 Alum, Bare, Wire		2,480.00 LF	\$5.12	978.09	\$3,981.86	\$728.46	\$0.00	\$12,688.41
G4010050403 12.19m (40') Class 3 Treated Power Pole	er Pole		\$2,548.39	\$ 633	\$11,254.11	\$1,245.10	\$0.00	\$22,935.55
G4010050421 Straight Line Structure, 15 KV Pol	Pole Top	7 EA	\$1 009.37	\$1,7	\$5,096.33	\$254.40	\$0.00	\$7,065.62
G4010050431 Terminal Structure, 15 KV Pole Top	۵	2.00 EA	€9	\$6,505.15	\$8,833.61	\$1,217.06	\$0.00	\$16,555.82
G4010060546 15 KV, 1/0 To 4/0 Conductor, Terminations & Splicing	ninations & Splicing	6.00 A	149.09	90.58	\$3,503.94	\$0.00	\$0.00	\$6,894.53
G4020039902 101.60mm (4") Rigid Steel Conduit		40.00	\$73.47	\$1,185.72	\$1,753.07	\$0.00	\$0.00	\$2,938.79
	Ъ	verhead Elect	Distribution					\$101,618.36
				Overhead Ele	ectrical Distrik	Overhead Electrical Distribution Total Cost:	st:	\$101,618.36
			 	Supporting F	acilities Total	Supporting Facilities Total Marked Up Cost:	st:	\$666,380.04
			l	<b>-</b>	otal Facilities	Total Facilities Marked Up Cost:	st:	\$7,177,526.89
Note: All Costs Include ACF, Markups and Escalation Project Location: Atlanta Geomia		Area Cost Factor	2000					Page 4 of 5
Project Ecountry: Oct 2023		Fscalation Rate:	20.417					PACES 13340
			1.04					

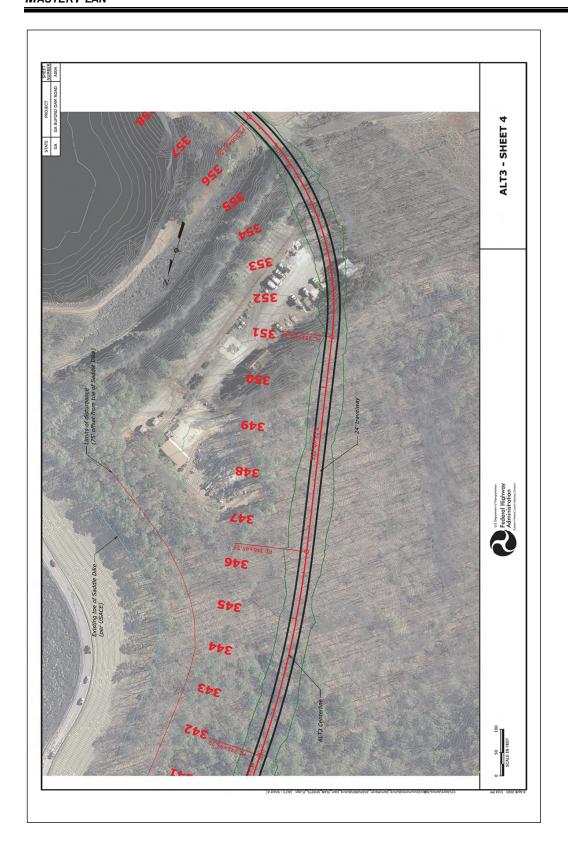
09 Apr 2020 10:22 AM	In-Project Lump Sums(s)	0.00	0.00	0.00	\$7,177,526.89	\$358,876.34	\$429,574.98	\$8,611,955.63	Out-of-Project Lump Sum(s)	Page 5 of 5	2015 CB PACES 1.3.34.0
	In-Pro	Pavement:	Improvements:	Utilities:	Estimated Cont t Cost:	2.00%	5.70%	Total Project Cost:	Out-of-P		
	X		Ē		Estimated Co	Contingency:	SIOH:	Total			
Project Detail Report											0.924 20.417
Project I											Area Cost Factor: Escalation Rate:
										ıtion	
Buford Dam Road Purious Dam Road	<u>.</u>									Note: All Costs Include ACF, Markups and Escalation	Project Location: Atlanta, Georgia Project Midpoint: Oct 2023
Program: Project: Project Num:	2000									: All Costs	lect Location lect Midpoi

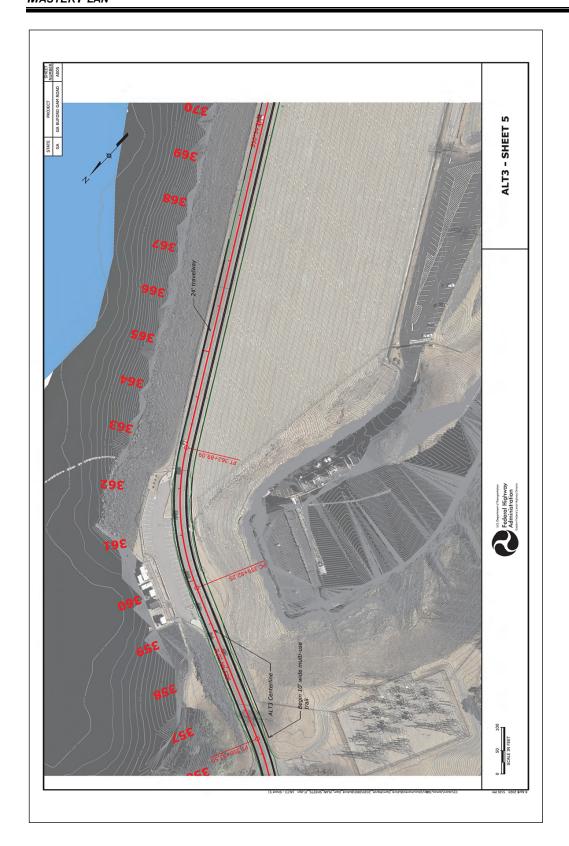




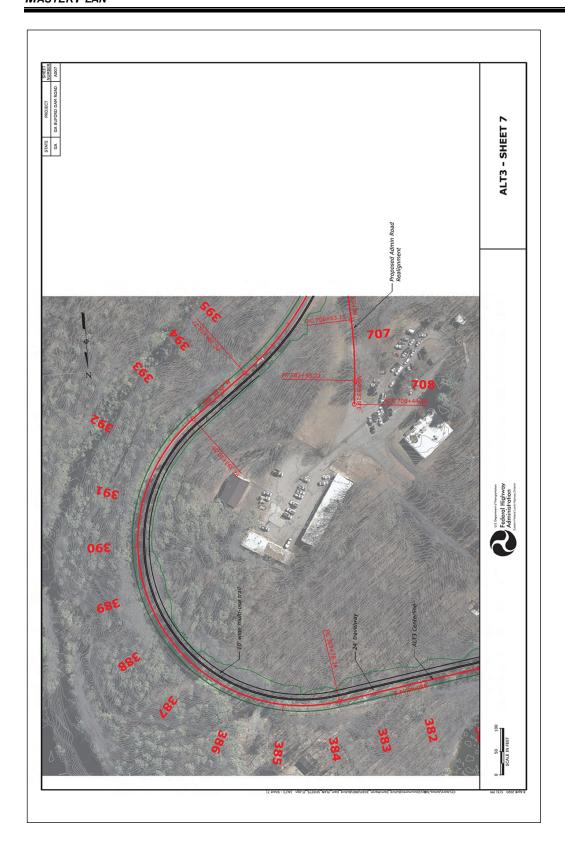


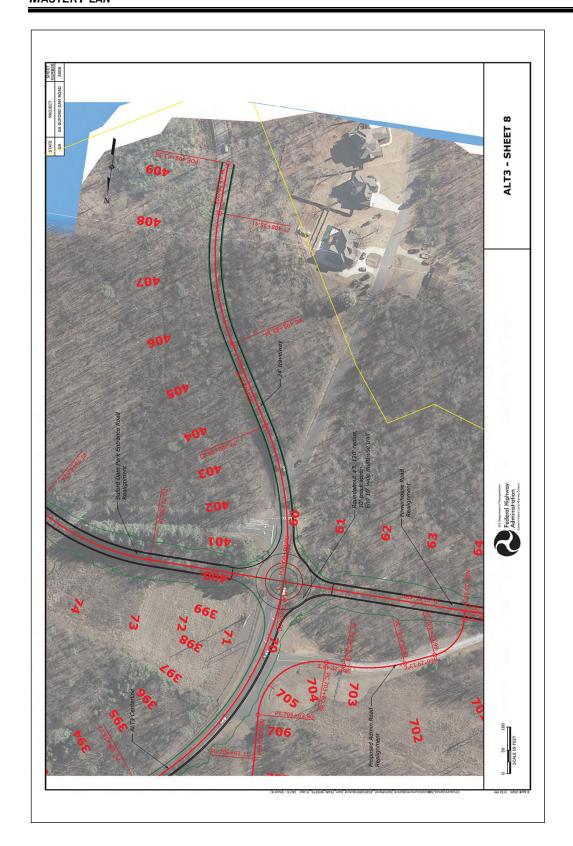


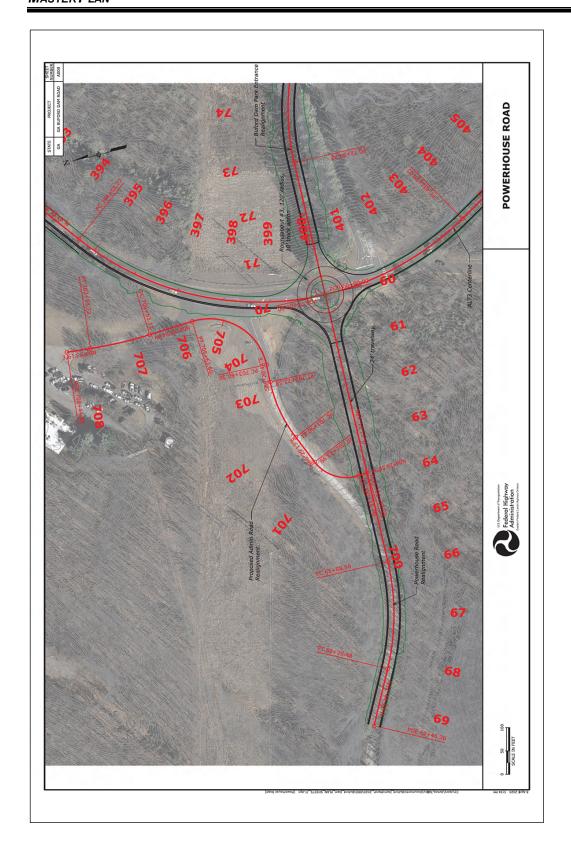


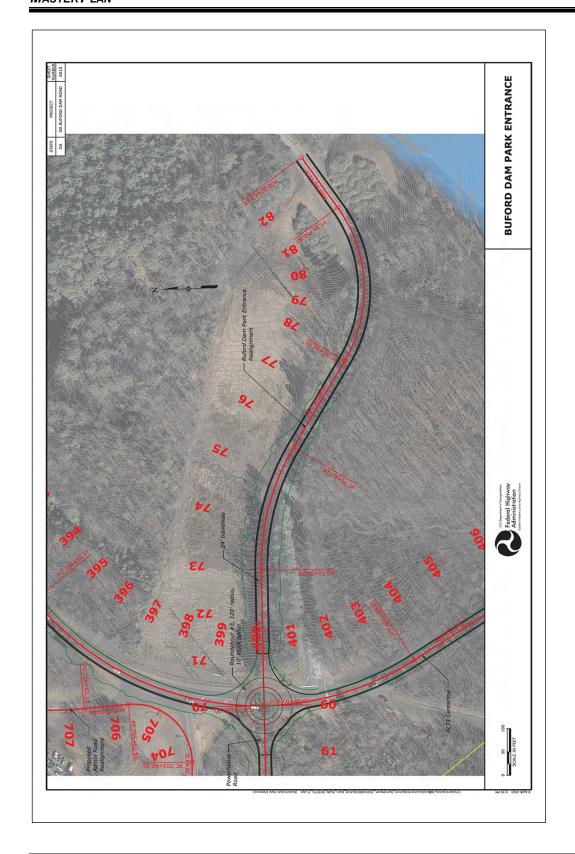












APPENDIX I—DECISION MEMO FOR PROPOSED MANAGEMENT ACTIONS	

MEMORANDUM FOR Commander SUBJECT: FOR DECISION

 PROBLEM. Proposed Management Actions for the Lake Sidney Lanier Master Plan Update.

2.	RECOMMENDATION.	That the Commander approve the Proposed Management
	Actions.	

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3. BACKGROUND and DISCUSSION. Lake Sidney Lanier is the most visited Corps of Engineer Project in the nation with over 11 Million visits to the project annually. Mobile District embarked on an update to the Lake Sidney Lanier master plan in 2017. One of the goals was to plan and prepare for future recreational needs as indicated by the population forecast increase over the next 30 years. Throughout this process we have conducted stakeholder meetings, interactive public open house meetings, and a Recreational Carrying Capacity Study (RCCS). Outside of the above, project staff have had many communications via emails, meetings, letters, and phone calls with lessees and stakeholders. The RCCS consisted of physical boat counts on the lake at different time periods; taking over 4000 aerial photos for boat counts and lake conditions; in person interviews/surveys at recreation areas; mail out surveys; and analysis of the data and information collected. Throughout the process, a Storyboard Map has been posted on our project website that provides: an overview of the process; the data collected; results of the mail in surveys; results of the in person interviews/surveys; results of the interactive public meetings; results of the stakeholder meetings; results of the boat counts; the aerial photos; analysis of the data as we moved through the process; public comments; responses to public comments; density/conflict maps; and draft proposed management actions. In consideration of all of the above, the process has been a collaborative and transparent process.

The Atlanta Regional Commission (ARC) is the organization that state and local jurisdictions rely on for assistance with future planning in Metropolitan Atlanta. The RCCS produced a current Density/Conflict map of Lake Lanier. The population forecast developed by the ARC was applied to the current Density/Conflict map to produce a Recommended Density/Conflict map. The Recommended Map is the projection of the Density/Conflict at Lake Lanier 30 years from now. The Recommended Map serves as a goal for which to make management decisions now in order to achieve that goal in 30 years.

SUBJECT: FOR DECISION

The RCCS is science based and was conducted using industry accepted methods. Analysis and results are the product of defensible statistical information. While the RCCS does not provide final decisions for future management actions, it does provide science-based information for management to use to make sound decisions for the management of the project. Many of the proposed management actions are simple and accepted however some decisions are more difficult and have the potential for controversy.

Based on the information collected throughout this process, the following potentially controversial management actions are proposed:

a. Limit Water Access: the proposed management action is to limit water access for boats to what is currently approved in site development plans. This includes no increase for: development of marinas; dry stack or land-based storage; wet slips; public boat ramps; private boat docks; parking lots for trailers; or for any other development that would increase the capacity for vessels to enter the water.

The current overall boating density of the lake is 19.7 acres of water per boat. This results in a "Moderate" density classification. Applying the 60% Recommended Map results in 12.3 acres of water per boat which is a "High" density classification. An analysis was conducted to determine the potential overall density of the lake with complete facility build out of currently approved site development plans. This analysis resulted in an overall boating density of 14.6 acres of water per boat which also results in a "High" density classification.

Additional unknown factors not included in density calculations:

- Individual Shoreline Use Permits: With the maximum number of permits being reached, there is an increase in permit holders upgrading their facilities from single slip to double slip docks.
- Private Property Development: Current and future development of landbased storage of boats on private property may lead to an increase in the number of boats on the lake resulting in an increased boating density. This is an action beyond USACE control.

Both the 12.3 acres per boat and the 14.6 acres per boat fall within the range of the "High" density classification.

SUBJECT: FOR DECISION

Both above unknown factors provide for the likelihood that the 12.3 acres per boat represented on the Recommended Map will be reached, if not exceeded.

With the current density of 19.7 acres per boat, public safety is already a concern. An analysis of published statistics from the Georgia Department of Natural Resources indicate from 2010 – 2018, the number of boating incidents, injuries, and fatalities on Lake Lanier typically exceed more than twice that of other lakes in the State (Allatoona, Blackshear, Thurmond, Hartwell, Jackson, Oconee, and Sinclair).

Limiting water access now with a known future density of 14.6 acres per boat is a prudent management action considering other potential methods for increasing density and public safety concerns.

The public feedback regarding this proposed action was overwhelmingly positive. However, the feedback from Hall County was negative.

b. Site Development as Proposed on the Storyboard Map: Site improvements or development throughout the Project is identified for land-based amenities and services to satisfy current and future needs. Locations for marine contractors to perform their services are also identified. This will enable existing developed recreation areas to be fully used for their authorized purpose.

Feedback from lessee's and local jurisdictions was disappointingly low. It is understood that USACE will not be able to develop these areas due to flat or reducing budgets. Therefore, any needed future development will be completed by local jurisdictions. With little feedback from them, future development has been identified for recreation and greenspace needs that may be required by an increasing population.

The public feedback regarding this proposed action is also mixed. Most of the negative comments are from residents adjacent to public recreation areas that do not want any development adjacent to their residences. Much of the identified development is currently approved under the 1987 Project master plan.

SUBJECT: FOR DECISION

## IMPACTS.

## a. Limit Water Access:

- i. Positive: Approving this recommendation will be conducive to achieving the goal of managing the lake not to exceed the density reflected on the Recommended Map. The Recommended Map also provides for a wide diversity of recreational experiences.
- Negative: Pressure, potentially political, from Hall County for continued development of additional marinas.

## b. Site development:

- Positive: Approving this recommendation will be conducive to achieving the goal of meeting current and future recreational needs while preserving the resource for future generations.
- Negative: Potential pressure from adjacent residents opposed to development.

COORDINATION. Thru GEARS.

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ENCL.
1. Recommended Map

Timothy A. Rainey Operations Project Manager Lake Sidney Lanier

