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2024 JUN -4 AM 7:33

31 May 2024

Hernando County
ATTN: Donald Carey, PE
1525 E. Jefferson St
Brooksville, FL 34601

**Subject: S. Brooksville Stormwater Master Drainage Plan
BMP 2 Alternatives**

Dear Mr. Carey:

The following is the transmittal of the remaining deliverables for Amendment 2 of 22-RG0013/PH.

Please contact us at 813-390-7978 or cmiller@mckimcreed.com.

Sincerely,

Colin Miller, P.E. (FL PE 61775)

Enclosures:

Memo South Brooksville Stormwater Master Drainage Plan
2023 BMP2 Alternatives (signed/sealed)
USB Drive

Memo South Brooksville Stormwater Master Drainage
Plan 2023 BMP2 Alternatives (5/15/2024)
Revised Master Drainage Plan for South Brooksville
(01/29/2024)
ICPR Models

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Tel (813) 549-3740 • Fax (813) 549-3744

To:	Donald Carey, PE
Copy:	Tracey Webb, PE
From:	Colin Miller, PE
Date:	15 May 2024
Subject:	South Brooksville Stormwater Master Drainage Plan 2023 BMP2 Alternatives
McKim & Creed #:	011550024

This memorandum summarized the results of stormwater modeling for additional alternative configurations of BMP 2, originally developed in South Brooksville Stormwater Master Drainage Plan 2011 (SBSWMDP 2011) and refined in the SBSWMDP 2023. BMP 2 is a detention area designed to reduce stages for upstream areas and allow for improved drainage of the subject area. The stages are based on ICPRv4 models of the subject area.

BMP2 ALT1

BMP 2, Alternative No 1 (ALT 1) is very similar to the original and updated BMP 2 system as documented in SBSWMDP 2023, except for the reduction of storage area on the north side of the creek, see Figure 1. ALT 1 work is all located within publicly owned property. This alternative provides some reduction flooding risk for structures as summarized in Table 1.

BMP2 ALT2B

BMP 2, Alternative No 2B (ALT 2B) expands the detention facility into private property to the south, see Figure 2. This expansion reduces stages in the Subject Area but does not eliminate flooding to some structures as summarized in Table 2.

BMP2 ALT3

BMP 2, Alternative No 3 further expands ALT2B by adding detention on the south side of SR 50, allowing for the installation of a 42" RCP under SR 50, see Figure 3. This alternative reduces the flood stages the most but does not eliminate all flooding risks for structures in the Subject Area, see Table 3 for a summary.

Table 1: Summary of Structures Removed from Projected Flooding after Implementation of BMP 2, Alternative No 1 (2024) for Various Storm Events

# of Structures Flooded	2.33-year	5-year	10-year	25-year	50-year	100-year
Existing Conditions	2	4	4	6	8	10
Proposed Conditions	0	0	1	2	4	6
# of Structures Reduced	2	4	3	4	4	4

Table 2: Summary of Structures Removed from Projected Flooding after Implementation of BMP 2, Alternative No 2B (2024) for Various Storm Events

# of Structures Flooded	2.33-year	5-year	10-year	25-year	50-year	100-year
Existing Conditions	2	4	4	6	8	10
Proposed Conditions	0	0	0	2	3	5
# of Structures Reduced	2	4	4	4	5	5

Table 3: Summary of Structures Removed from Projected Flooding after Implementation of BMP 2, Alternative No 3 (2024) for Various Storm Events

# of Structures Flooded	2.33-year	5-year	10-year	25-year	50-year	100-year
Existing Conditions	2	4	4	6	8	10
Proposed Conditions	0	0	0	2	3	4
# of Structures Reduced	2	4	4	4	5	6

Figures showing the location of structures at risk are included as attachments to this document as follows:

- A0 Existing Conditions - 100Y Event.pdf
- A1 BMP 2, Alternative 1 - 100Y Event.pdf
- A2 BMP 2, Alternative 2B - 100Y Event.pdf
- A3 BMP 2, Alternative 3 -100Y Event.pdf

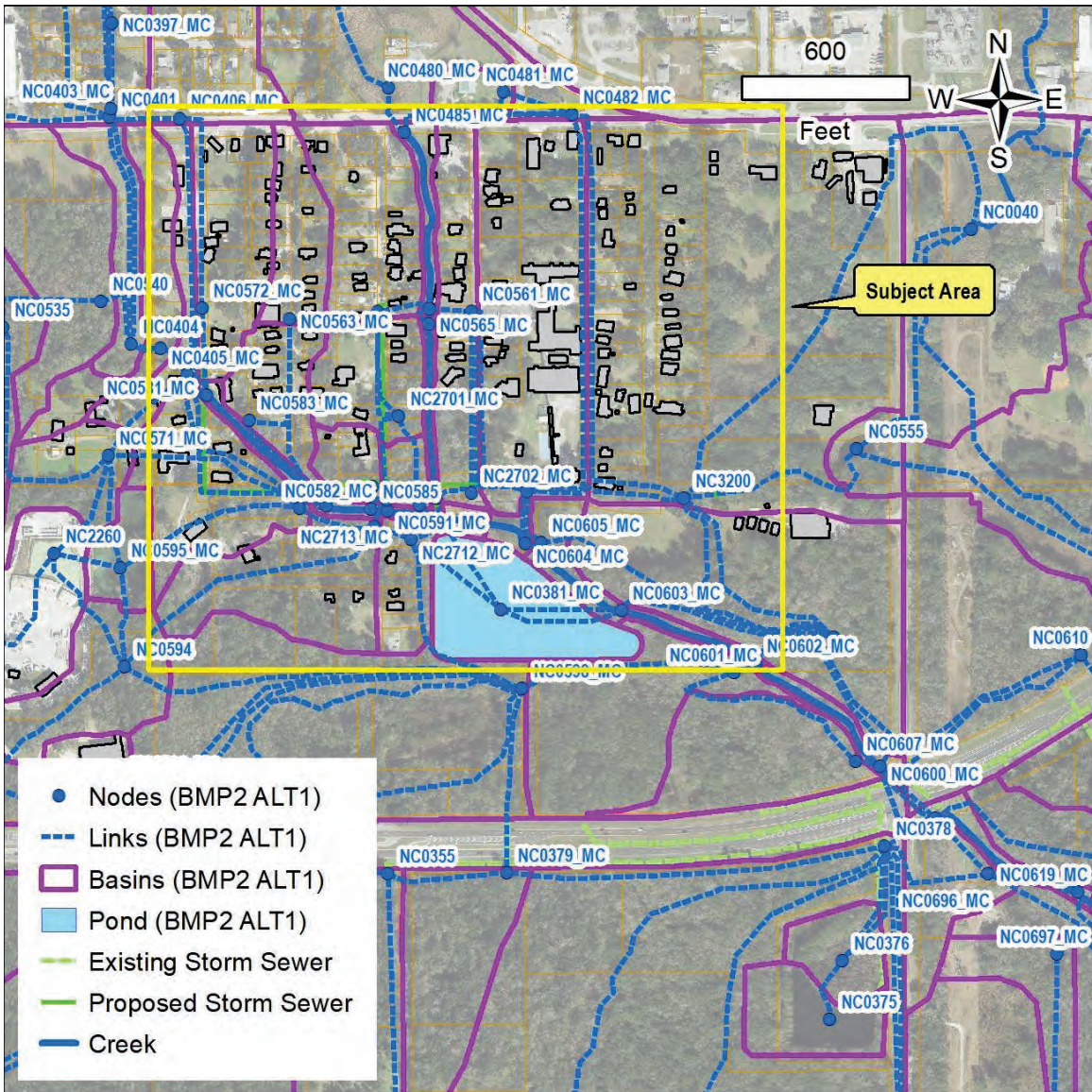


Figure 1. BMP2 ALT1

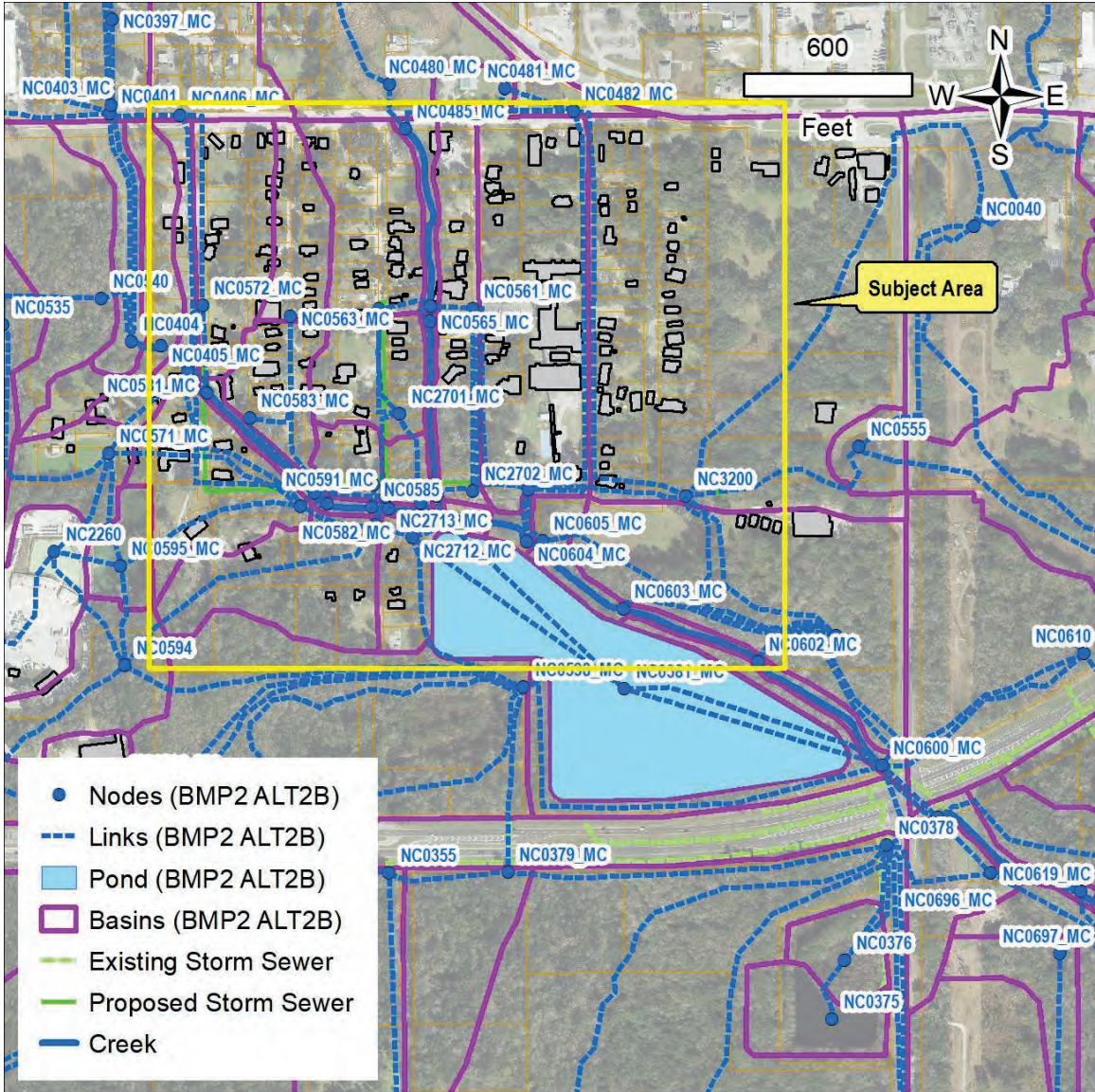


Figure 2. BMP2 ALT2B

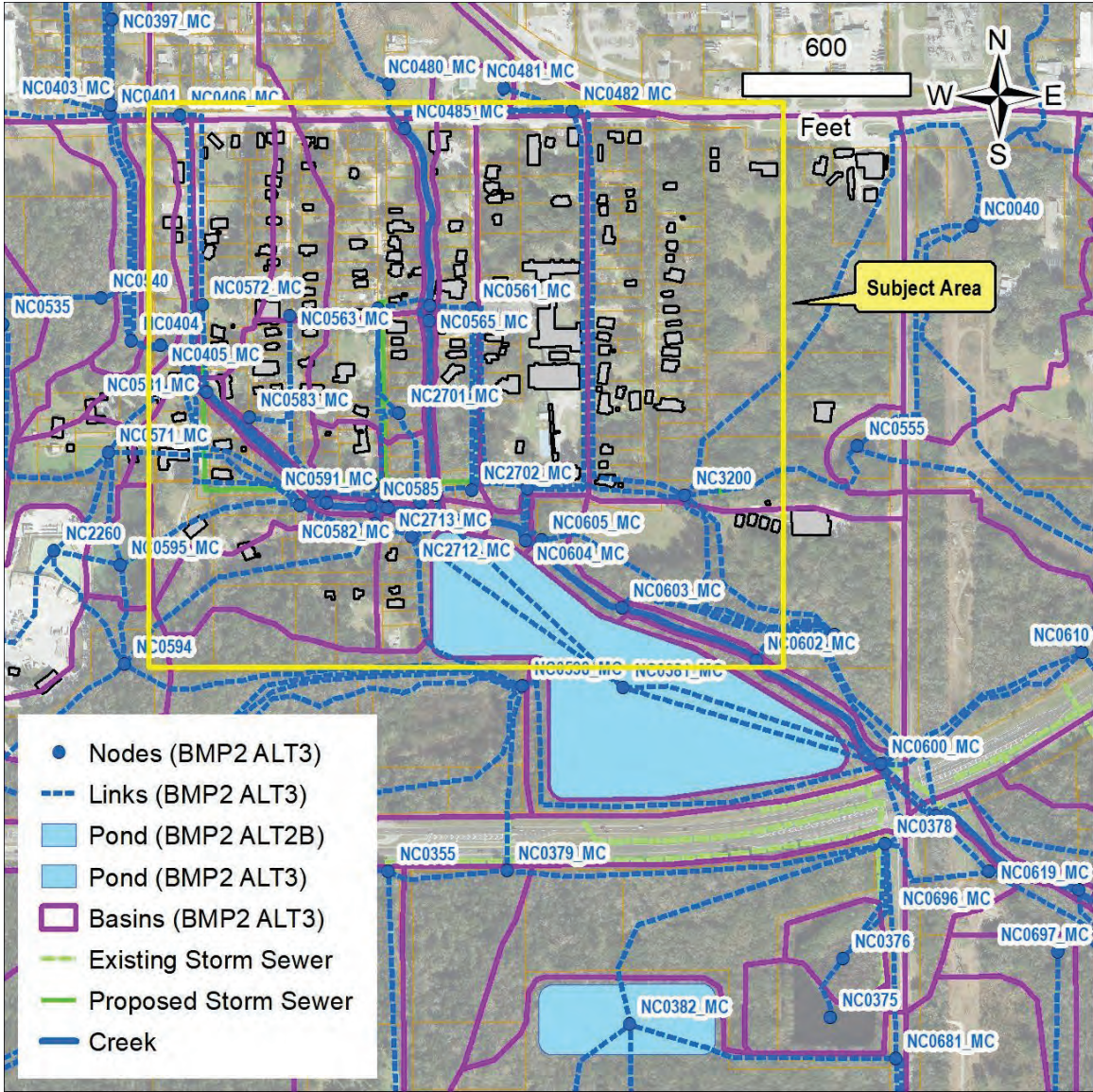


Figure 3. BMP2 ALT3

Class 4 construction cost estimates were developed for each of the alternatives. A summary is provided in Table 4 and the breakdown estimates are attached. Pre-construction land acquisition, design or permitting activities are not included in the estimated costs.

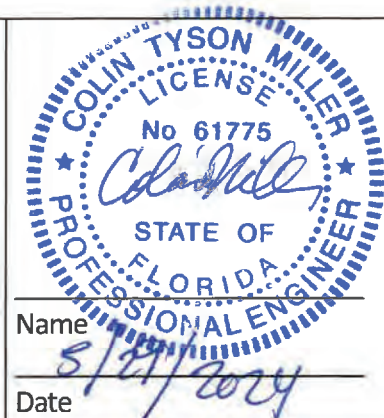
Table 4: Summary of Class 4 Construction Cost Estimates

Alternative	Construction Cost Estimate
BMP 2, ALT 1	\$8,772,805 +/- 10%
BMP 2, ALT 2B*	\$11,137,057 +/- 10%
BMP 2, ALT 3*	\$ 13,488,958 +/- 10%
* Does not include land acquisition costs.	

Not valid unless stamped or embossed with Engineer's Seal, signed, and dated in contrasting color ink or digitally sealed.

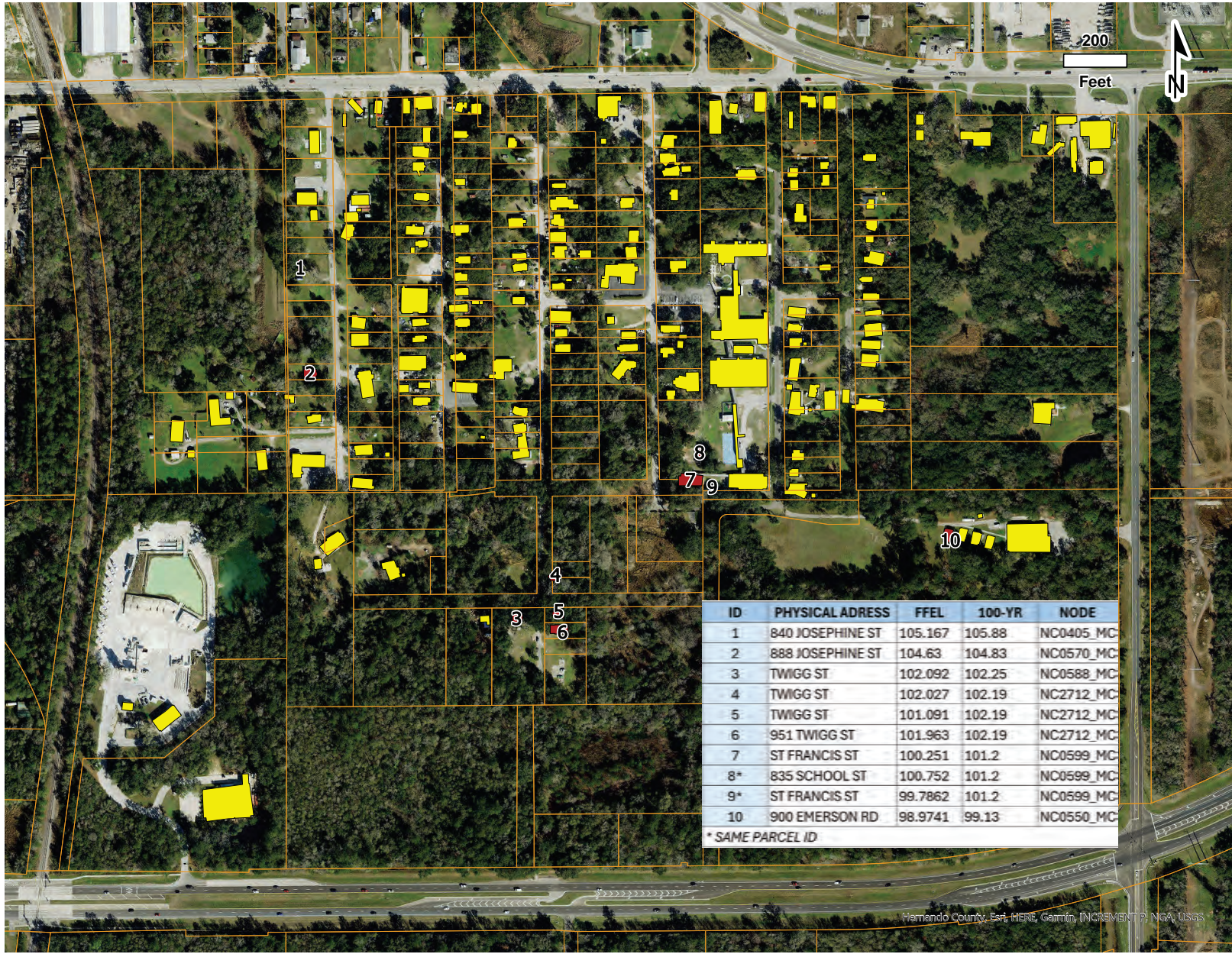
These documents have been prepared under the responsible charge of Colin Tyson Miller, PE (FL PE 61775) and is based on his professional knowledge and available information, in accordance with commonly accepted procedures consistent with applicable standards of practice.

McKim & Creed
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ATTACHMENTS:

- A0 Existing Conditions - 100Y Event.pdf
- A1 Alternative 1 - 100Y Event.pdf
- A2 Alternative 2B - 100Y Event.pdf
- A3 Alternative 3 - 100Y Event.pdf
- B1 EOPCC_BMP2_ALT1_011550021.pdf
- B2 EOPCC_BMP2_ALT2B_011550021.pdf
- B3 EOPCC_BMP2_ALT3_011550021.pdf
- C1 20240329_BCR_SBSWMDP_BMP2_ALT1.pdf
- C2 20240329_BCR_SBSWMDP_BMP2_ALT2B.pdf
- C3 20240329_BCR_SBSWMDP_BMP2_ALT3.pdf



ID	PHYSICAL ADDRESS	FFEL	100-YR	NODE
1	840 JOSEPHINE ST	105.167	105.88	NC0405_MC
2	888 JOSEPHINE ST	104.63	104.83	NC0570_MC
3	TWIGG ST	102.092	102.25	NC0588_MC
4	TWIGG ST	102.027	102.19	NC2712_MC
5	TWIGG ST	101.091	102.19	NC2712_MC
6	951 TWIGG ST	101.963	102.19	NC2712_MC
7	ST FRANCIS ST	100.251	101.2	NC0599_MC
8*	835 SCHOOL ST	100.752	101.2	NC0599_MC
9*	ST FRANCIS ST	99.7862	101.2	NC0599_MC
10	900 EMERSON RD	98.9741	99.13	NC0550_MC

* SAME PARCEL ID

PROJECT

S. Brooksville SW MDP

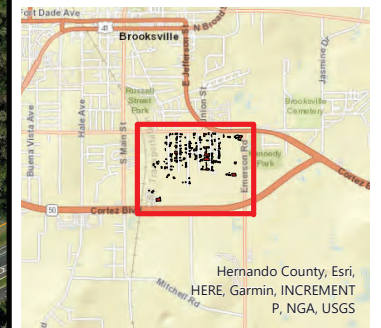
SHEET

Existing Conditions - 100Y Event

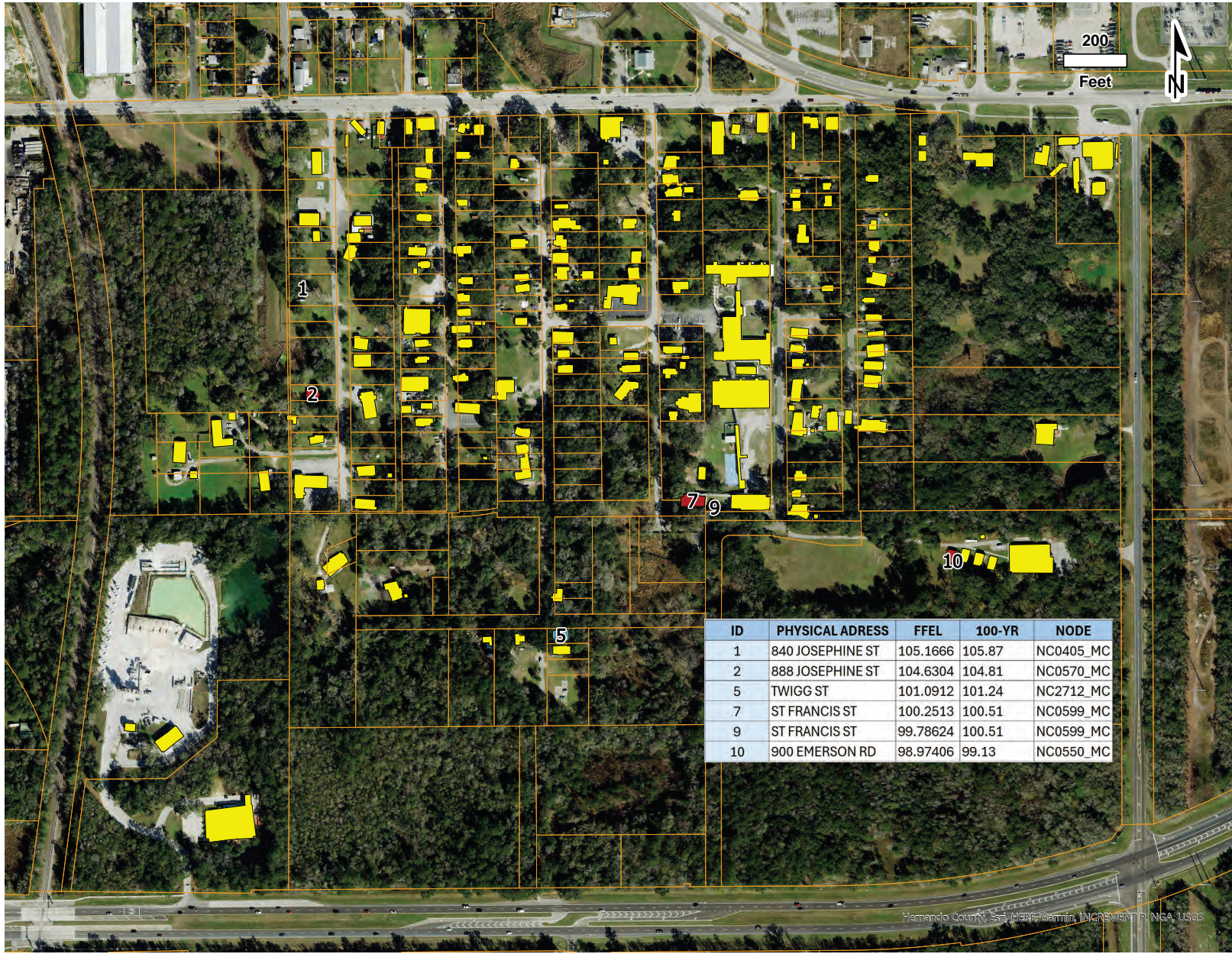
LEGEND

- At Risk
- Buildings
- Parcels

VICINITY



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PROJECT

S. Brooksville SW MDP

SHEET

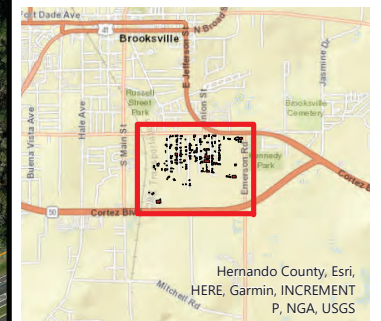
Alternative 1 - 100Y Event

LEGEND

- At Risk
- Buildings
- Parcels

ID	PHYSICAL ADDRESS	FFEL	100-YR	NODE
1	840 JOSEPHINE ST	105.1666	105.87	NC0405_MC
2	888 JOSEPHINE ST	104.6304	104.81	NC0570_MC
5	TWIGG ST	101.0912	101.24	NC2712_MC
7	ST FRANCIS ST	100.2513	100.51	NC0599_MC
9	ST FRANCIS ST	99.78624	100.51	NC0599_MC
10	900 EMERSON RD	98.97406	99.13	NC0550_MC

VICINITY



Hernando County, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

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ID	PHYSICAL ADDRESS	FFEL	100-YR	NODE
1	840 JOSEPHINE ST	105.1666	105.87	NC0405_MC
2	888 JOSEPHINE ST	104.6304	104.81	NC0570_MC
7	ST FRANCIS ST	100.2513	100.33	NC0599_MC
9	ST FRANCIS ST	99.78624	100.33	NC0599_MC
10	900 EMERSON RD	98.97406	99.01	NC0550_MC

PROJECT
S. Brooksville SW MDP

SHEET
Alternative 2B - 100Y Event

LEGEND
■ At risk ■ Buildings
□ Parcels

VICINITY

Hernando County, Esri, HERE, Garmin, INCREMENT P, NGA, USGS



ID	PHYSICAL ADDRESS	FFEL	100-YR	NODE
1	840 JOSEPHINE ST	105.1666	105.87	NC0405_MC
2	888 JOSEPHINE ST	104.6304	104.81	NC0570_MC
7	ST FRANCIS ST	100.2513	100.33	NC0599_MC
9	ST FRANCIS ST	99.78624	100.33	NC0599_MC

PROJECT
S. Brooksville SW MDP

SHEET
Alternative 3 -100Y Event

LEGEND
■ At Risk ■ Buildings
□ Parcels

VICINITY

Hernando County, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

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Item No.	Item Description	Quantity	Unit	Low Unit Cost	Mid. Unit Cost	High Unit Cost	Low Item Cost	Mid. Item Cost	High Item Cost	Description
1	Mobilization	1	LS	\$62,953.52	\$119,147.40	\$265,650.30	\$ 62,954	\$ 119,147	\$ 265,650	Mobilization Low 7%, Mid 10%, High 15%
2	Dewatering	1	LS	\$30,000.00	\$ 60,000.00	\$ 80,000.00	\$ 30,000	\$ 60,000	\$ 80,000	
3	Clearing & Grubbing	6.2	AC	\$10,000.00	\$ 20,205.29	\$ 72,049.12	\$ 62,362	\$ 126,003	\$ 449,310	
4	Tree Removal	75	EA	\$ 370.12	\$ 577.56	\$ 785.00	\$ 27,759	\$ 43,317	\$ 58,875	
5	Silt Fence	4700	LF	\$ 1.82	\$ 5.70	\$ 12.24	\$ 8,554	\$ 26,790	\$ 57,528	
6	Staked Turbidity Barrier	200	LF	\$ 8.72	\$ 14.13	\$ 22.12	\$ 1,744	\$ 2,826	\$ 4,424	
7	Excavation	42943.7	CY	\$ 8.21	\$ 9.85	\$ 11.82	\$ 352,568	\$ 423,081	\$ 507,697	
8	Excavation (unsuitable material)	4294.37	CY	\$ 38.35	\$ 46.02	\$ 55.22	\$ 164,689	\$ 197,627	\$ 237,152	
9	Fill	9281.8	CY	\$ 16.30	\$ 20.62	\$ 24.94	\$ 151,294	\$ 191,391	\$ 231,489	
10	Turf	30183	SY	\$ 2.00	\$ 2.40	\$ 2.88	\$ 60,366	\$ 72,439	\$ 86,927	
11	Control Structures	4	EA	\$10,000.00	\$ 12,000.00	\$ 14,400.00	\$ 40,000	\$ 48,000	\$ 57,600	
12	Road	5200	LF	\$ 300.00	\$ 500.00	\$ 770.00	\$1,560,000	\$2,600,000	\$ 4,004,000	
13	24" RCP	2624.9	LF	\$ 164.00	\$ 180.40	\$ 198.44	\$ 430,480	\$ 473,528	\$ 520,881	
14	36" RCP	3012.4	LF	\$ 300.00	\$ 330.00	\$ 363.00	\$ 903,726	\$ 994,099	\$ 1,093,508	
15	42" RCP	1800.4	LF	\$ 392.00	\$ 431.20	\$ 474.32	\$ 705,741	\$ 776,315	\$ 853,947	
16	48" RCP	173.4	LF	\$ 437.00	\$ 480.70	\$ 528.77	\$ 75,758	\$ 83,334	\$ 91,668	
17	2 - 8' x 4' RCB	118.4	LF	\$ 1,824.00	\$ 2,736.00	\$ 3,283.20	\$ 215,943	\$ 323,915	\$ 388,698	
18	Inlet	19	EA	\$ 6,790.00	\$ 2,736.00	\$ 3,283.20	\$ 129,010	\$ 51,984	\$ 62,381	

	Low Total	Mid. Total	High Total
Subtotal	\$ 4,982,948	\$6,613,796	\$ 9,051,735
Contingency 30%	\$ 1,494,884	\$1,984,139	\$ 2,715,521
Grand Total	\$6,477,832	\$8,597,935	\$ 11,767,256

Avg. Grand Total = \$8,772,805 +/- \$881,571
High Likely Grand Total = \$9,654,376
Low Likely Grand Total = \$7,891,234

Item No.	Item Description	Quantity	Unit	Low Unit Cost	Mid. Unit Cost	High Unit Cost	Low Item Cost	Mid. Item Cost	High Item Cost	Description
1	Mobilization	1	LS	\$148,017.66	\$274,976.40	\$625,023.00	\$ 148,018	\$ 274,976	\$ 625,023	Mobilization Low 7%, Mid 10%, High 15%
2	Dewatering	1	LS	\$ 30,000.00	\$ 60,000.00	\$ 80,000.00	\$ 30,000	\$ 60,000	\$ 80,000	
3	Clearing & Grubbing	17.1	AC	\$ 10,000.00	\$ 20,205.29	\$ 72,049.12	\$ 171,158	\$ 345,830	\$ 1,233,180	
4	Tree Removal	75	EA	\$ 370.12	\$ 577.56	\$ 785.00	\$ 27,759	\$ 43,317	\$ 58,875	
5	Silt Fence	5500	LF	\$ 1.82	\$ 5.70	\$ 12.24	\$ 10,010	\$ 31,350	\$ 67,320	
6	Staked Turbidity Barrier	200	LF	\$ 8.72	\$ 14.13	\$ 22.12	\$ 1,744	\$ 2,826	\$ 4,424	
7	Excavation	115771.5	CY	\$ 8.21	\$ 9.85	\$ 11.82	\$ 950,484	\$ 1,140,581	\$ 1,368,697	
8	Excavation (unsuitable material)	11577.2	CY	\$ 38.35	\$ 46.02	\$ 55.22	\$ 443,984	\$ 532,781	\$ 639,337	
9	Fill	16792.5	CY	\$ 16.30	\$ 20.62	\$ 24.94	\$ 273,718	\$ 346,262	\$ 418,806	
10	Turf	82840.6	SY	\$ 2.00	\$ 2.40	\$ 2.88	\$ 165,681	\$ 198,817	\$ 238,581	
11	Control Structures	4	EA	\$ 10,000.00	\$ 12,000.00	\$ 14,400.00	\$ 40,000	\$ 48,000	\$ 57,600	
12	Road	5200	LF	\$ 300.00	\$ 500.00	\$ 770.00	\$1,560,000	\$ 2,600,000	\$ 4,004,000	
13	24" RCP	2624.9	LF	\$ 164.00	\$ 180.40	\$ 198.44	\$ 430,480	\$ 473,528	\$ 520,881	
14	36" RCP	3012.4	LF	\$ 300.00	\$ 330.00	\$ 363.00	\$ 903,726	\$ 994,099	\$ 1,093,508	
15	42" RCP	1800.4	LF	\$ 392.00	\$ 431.20	\$ 474.32	\$ 705,741	\$ 776,315	\$ 853,947	
16	48" RCP	173.4	LF	\$ 437.00	\$ 480.70	\$ 528.77	\$ 75,758	\$ 83,334	\$ 91,668	
17	2 - 8' x 4' RCB	118.4	LF	\$ 1,824.00	\$ 2,736.00	\$ 3,283.20	\$ 215,943	\$ 323,915	\$ 388,698	
18	Inlet	19	EA	\$ 6,790.00	\$ 2,736.00	\$ 3,283.20	\$ 129,010	\$ 51,984	\$ 62,381	

	Low Total	Mid. Total	High Total
Subtotal	\$ 6,283,214	\$ 8,327,915	\$ 11,806,926
Contingency 30%	\$ 1,884,964	\$ 2,498,375	\$ 3,542,078
Grand Total	\$ 8,168,178	\$10,826,290	\$ 15,349,004

Avg. Grand Total = \$11,137,057 +/- \$1,196,804
High Likely Grand Total = \$12,333,861
Low Likely Grand Total = \$ 9,940,253

Item No.	Item Description	Quantity	Unit	Low Unit Cost	Mid. Unit Cost	High Unit Cost	Low Item Cost	Mid. Item Cost	High Item Cost	Description
1	Mobilization	1	LS	\$ 221,998.70	\$407,044.10	\$ 900,644.25	\$ 221,999	\$ 407,044	\$ 900,644	Mobilization Low 7%, Mid 10%, High 15%
2	Dewatering	1	LS	\$ 30,000.00	\$ 60,000.00	\$ 80,000.00	\$ 30,000	\$ 60,000	\$ 80,000	
3	Clearing & Grubbing	22.0	AC	\$ 10,000.00	\$ 20,205.29	\$ 72,049.12	\$ 220,060	\$ 444,637	\$ 1,585,512	
4	Tree Removal	75	EA	\$ 370.12	\$ 577.56	\$ 785.00	\$ 27,759	\$ 43,317	\$ 58,875	
5	Silt Fence	9000	LF	\$ 1.82	\$ 5.70	\$ 12.24	\$ 16,380	\$ 51,300	\$ 110,160	
6	Staked Turbidity Barrier	200	LF	\$ 8.72	\$ 14.13	\$ 22.12	\$ 1,744	\$ 2,826	\$ 4,424	
7	Excavation	193336	CY	\$ 8.21	\$ 9.85	\$ 11.82	\$ 1,587,288	\$ 1,904,745	\$ 2,285,694	
8	Excavation (unsuitable material)	19333.6	CY	\$ 38.35	\$ 46.02	\$ 55.22	\$ 741,443	\$ 889,732	\$ 1,067,678	
9	Fill	16792.5	CY	\$ 16.30	\$ 20.62	\$ 24.94	\$ 273,718	\$ 346,262	\$ 418,806	
10	Turf	106509.0	SY	\$ 2.00	\$ 2.40	\$ 2.88	\$ 213,018	\$ 255,622	\$ 306,746	
11	Control Structures	6	EA	\$ 10,000.00	\$ 12,000.00	\$ 14,400.00	\$ 60,000	\$ 72,000	\$ 86,400	
12	Road	5200	LF	\$ 300.00	\$ 500.00	\$ 770.00	\$ 1,560,000	\$ 2,600,000	\$ 4,004,000	
13	24" RCP	2624.9	LF	\$ 164.00	\$ 180.40	\$ 198.44	\$ 430,480	\$ 473,528	\$ 520,881	
14	36" RCP	3012.4	LF	\$ 300.00	\$ 330.00	\$ 363.00	\$ 903,726	\$ 994,099	\$ 1,093,508	
15	42" RCP	1800.4	LF	\$ 392.00	\$ 431.20	\$ 474.32	\$ 705,741	\$ 776,315	\$ 853,947	
16	48" RCP	173.4	LF	\$ 437.00	\$ 480.70	\$ 528.77	\$ 75,758	\$ 83,334	\$ 91,668	
17	2 - 8' x 4' RCB	118.4	LF	\$ 1,824.00	\$ 2,736.00	\$ 3,283.20	\$ 215,943	\$ 323,915	\$ 388,698	
18	Inlet	19	EA	\$ 6,790.00	\$ 2,736.00	\$ 3,283.20	\$ 129,010	\$ 51,984	\$ 62,381	
19	Add Culvert Under SR50	1	LS	\$ 200,000.00	\$300,000.00	\$ 400,000.00	\$ 200,000	\$ 300,000	\$ 400,000	

		Low Total	Mid. Total	High Total
Subtotal	\$	7,614,067	\$10,080,660	\$ 14,320,022
Contingency	30%	\$ 2,284,220	\$ 3,024,198	\$ 4,296,007
Grand Total	\$	9,898,287	\$13,104,858	\$ 18,616,029

Avg. Grand Total = \$13,488,958 +/- \$1,452,957
High Likely Grand Total = \$14,941,915
Low Likely Grand Total = \$12,036,001

FY18 Cooperative Funding Initiative Application
Stormwater Improvement Flood Protection (SIFP) Benefit Cost Analysis Tool
 Version 1.0, July 2016



Cooperator/Applicant: **Hernando County**

Project Number/Name: **South Brooksville Stormwater Master Drainage Plan Update 2023**

Cooperator/Applicant to insert a short narrative about the project including anticipated benefit(s): The following BCA is for BMP2 ALT1 from existing conditions (2024), South Brooksville Stormwater Master Drainage Plan 2024.

Table A - Benefit Cost Information

Benefit Category	Is this benefit addressed by the proposed project? (Yes/No or N/A)	Can you provide B:C information for the CFI application? (Yes and B:C ratio, No, or N/A)	If you answered "No" in column "C", do you need assistance to be able to provide B:C information? (Yes or N/A)	Additional Comments
Flood Protection	Yes	Yes, 1.4	N/A	
Water Quality Improvement	N/A	N/A	N/A	
Additional Benefit 1	N/A	N/A	N/A	
Additional Benefit 2	N/A	N/A	N/A	
Additional Benefit 3	N/A	N/A	N/A	

Table B - Project Cost

Cost Category	(a)		(c)	(d)	(e)	(f)
	Cooperator Share	District Share	District Share	Other Funding Sources	Total	% District Funding Match
(a) Direct Project Administration Costs					\$0	#DIV/0!
(b) Land Purchase/Easement					\$0	#DIV/0!
(c) Planning/Design/Engineering/Environmental Documentation					\$0	#DIV/0!
(d) Construction/Implementation					\$0	#DIV/0!
(e) Construction/Implementation Contingency					\$0	#DIV/0!
(f) Environmental Compliance/Mitigation/Enhancement					\$0	#DIV/0!
(g) Construction Administration					\$0	#DIV/0!
(h) Other Costs (e.g. O&M)					\$0	#DIV/0!
(i) Grand Total (Sum rows (a) through (h) for each column)				\$0	\$8,772,805	0%

Notes:

Table C - Project Benefit Summary

Check all project benefits that are applicable. If you choose to enter a benefit not listed below, please provide a detailed description.

Benefit Considered	Benefit Detail
<input type="checkbox"/> [x]	Reduced physical damage (buildings, contents, infrastructure, landscaping, vehicles, equipment, crops, ecosystems)
<input checked="" type="checkbox"/> [x]	Reduced loss of functions (net loss of business income, net loss of rental income, net loss of wages, net loss of public services, net loss of utility services, displacement costs of temporary quarters, transportation system disruptions)
<input checked="" type="checkbox"/> [x]	Reduced emergency response costs (evacuation and rescue costs, security costs, dewatering flood management system repairs, humanitarian assistance)
<input checked="" type="checkbox"/> [x]	Reduced public safety and health impacts (population at risk, casualties, displacement/shelter needs, critical facilities)

For benefits that could not be quantified in physical terms, please provide a description below. The description should include a description of economic factors that may affect or qualify the amount of economic benefits to be realized. The description should also include any uncertainty (such as model parameterization) that might affect the level of benefits received.

Description of Qualitative Benefits :

Table D - Benefit Cost Analysis

(a)	Expected Annual Damage Without Project ⁽¹⁾	\$241,369
(b)	Expected Annual Damage With Project ⁽¹⁾	\$85,193
(c)	Expected Annual Damage Benefit (a) – (b)	\$156,176
(d)	Discount Rate	7.0%
(e)	Project Useful Life (# years)	30
(f)	Total Present Value of Future Benefits	\$1,937,992
(g)	Total Project Cost	\$8,772,805
(h)	Benefit/Cost Ratio	0.22

⁽¹⁾ This tool assumes no population growth thus EAD will be constant over analysis period.

FY18 Cooperative Funding Initiative Application
Stormwater Improvement Flood Protection (SIFP) Benefit Cost Analysis Tool
 Version 1.0, July 2016



Cooperator/Applicant: **Hernando County**

Project Number/Name: **South Brooksville Stormwater Master Drainage Plan Update 2023**

Cooperator/Applicant to insert a short narrative about the project including anticipated benefit(s): The following BCA is for BMP2 ALT2B from existing conditions (2024), South Brooksville Stormwater Master Drainage Plan 2024.

Table A - Benefit Cost Information

Benefit Category	Is this benefit addressed by the proposed project? (Yes/No or N/A)	Can you provide B:C information for the CFI application? (Yes and B:C ratio, No, or N/A)	If you answered "No" in column "C", do you need assistance to be able to provide B:C information? (Yes or N/A)	Additional Comments
Flood Protection	Yes	Yes, 1.4	N/A	
Water Quality Improvement	N/A	N/A	N/A	
Additional Benefit 1	N/A	N/A	N/A	
Additional Benefit 2	N/A	N/A	N/A	
Additional Benefit 3	N/A	N/A	N/A	

Table B - Project Cost

Cost Category	(a)		(c)	(d)	(e)	(f)
	Cooperator Share	District Share		Other Funding Sources	Total	% District Funding Match
(a) Direct Project Administration Costs					\$0	#DIV/0!
(b) Land Purchase/Easement					\$0	#DIV/0!
(c) Planning/Design/Engineering/Environmental Documentation					\$0	#DIV/0!
(d) Construction/Implementation					\$0	#DIV/0!
(e) Construction/Implementation Contingency					\$0	#DIV/0!
(f) Environmental Compliance/Mitigation/Enhancement					\$0	#DIV/0!
(g) Construction Administration					\$0	#DIV/0!
(h) Other Costs (e.g. O&M)					\$0	#DIV/0!
(i) Grand Total (Sum rows (a) through (h) for each column)				\$0	\$11,137,057	0%

Notes:

Table C - Project Benefit Summary

Check all project benefits that are applicable. If you choose to enter a benefit not listed below, please provide a detailed description.

Benefit Considered	Benefit Detail
<input type="checkbox"/> [x]	Reduced physical damage (buildings, contents, infrastructure, landscaping, vehicles, equipment, crops, ecosystems)
<input checked="" type="checkbox"/> [x]	Reduced loss of functions (net loss of business income, net loss of rental income, net loss of wages, net loss of public services, net loss of utility services, displacement costs of temporary quarters, transportation system disruptions)
<input checked="" type="checkbox"/> [x]	Reduced emergency response costs (evacuation and rescue costs, security costs, dewatering flood management system repairs, humanitarian assistance)
<input checked="" type="checkbox"/> [x]	Reduced public safety and health impacts (population at risk, casualties, displacement/shelter needs, critical facilities)

For benefits that could not be quantified in physical terms, please provide a description below. The description should include a description of economic factors that may affect or qualify the amount of economic benefits to be realized. The description should also include any uncertainty (such as model parameterization) that might affect the level of benefits received.

Description of Qualitative Benefits :

Table D - Benefit Cost Analysis

(a)	Expected Annual Damage Without Project ⁽¹⁾	\$241,369
(b)	Expected Annual Damage With Project ⁽¹⁾	\$55,134
(c)	Expected Annual Damage Benefit (a) – (b)	\$186,235
(d)	Discount Rate	7.0%
(e)	Project Useful Life (# years)	30
(f)	Total Present Value of Future Benefits	\$2,310,997
(g)	Total Project Cost	\$11,137,057
(h)	Benefit/Cost Ratio	0.21

⁽¹⁾ This tool assumes no population growth thus EAD will be constant over analysis period.

FY18 Cooperative Funding Initiative Application
Stormwater Improvement Flood Protection (SIFP) Benefit Cost Analysis Tool
 Version 1.0, July 2016



Cooperator/Applicant: **Hernando County**

Project Number/Name: **South Brooksville Stormwater Master Drainage Plan Update 2023**

Cooperator/Applicant to insert a short narrative about the project including anticipated benefit(s): The following BCA is for BMP2 ALT3 from existing conditions (2024), South Brooksville Stormwater Master Drainage Plan 2024.

Table A - Benefit Cost Information

Benefit Category	Is this benefit addressed by the proposed project? (Yes/No or N/A)	Can you provide B:C information for the CFI application? (Yes and B:C ratio, No, or N/A)	If you answered "No" in column "C", do you need assistance to be able to provide B:C information? (Yes or N/A)	Additional Comments
Flood Protection	Yes	Yes, 1.4	N/A	
Water Quality Improvement	N/A	N/A	N/A	
Additional Benefit 1	N/A	N/A	N/A	
Additional Benefit 2	N/A	N/A	N/A	
Additional Benefit 3	N/A	N/A	N/A	

Table B - Project Cost

Cost Category	(a)	(c)	(d)	(e)	(f)
	Cooperator Share	District Share	Other Funding Sources	Total	% District Funding Match
(a) Direct Project Administration Costs				\$0	#DIV/0!
(b) Land Purchase/Easement				\$0	#DIV/0!
(c) Planning/Design/Engineering/Environmental Documentation				\$0	#DIV/0!
(d) Construction/Implementation				\$0	#DIV/0!
(e) Construction/Implementation Contingency				\$0	#DIV/0!
(f) Environmental Compliance/Mitigation/Enhancement				\$0	#DIV/0!
(g) Construction Administration				\$0	#DIV/0!
(h) Other Costs (e.g. O&M)				\$0	#DIV/0!
(i) Grand Total (Sum rows (a) through (h) for each column)			\$0	\$13,488,958	0%

Notes:

Table C - Project Benefit Summary

Check all project benefits that are applicable. If you choose to enter a benefit not listed below, please provide a detailed description.

Benefit Considered	Benefit Detail
<input type="checkbox"/> [x]	Reduced physical damage (buildings, contents, infrastructure, landscaping, vehicles, equipment, crops, ecosystems)
<input checked="" type="checkbox"/> [x]	Reduced loss of functions (net loss of business income, net loss of rental income, net loss of wages, net loss of public services, net loss of utility services, displacement costs of temporary quarters, transportation system disruptions)
<input checked="" type="checkbox"/> [x]	Reduced emergency response costs (evacuation and rescue costs, security costs, dewatering flood management system repairs, humanitarian assistance)
<input checked="" type="checkbox"/> [x]	Reduced public safety and health impacts (population at risk, casualties, displacement/shelter needs, critical facilities)

For benefits that could not be quantified in physical terms, please provide a description below. The description should include a description of economic factors that may affect or qualify the amount of economic benefits to be realized. The description should also include any uncertainty (such as model parameterization) that might affect the level of benefits received.

Description of Qualitative Benefits :

Table D - Benefit Cost Analysis

(a)	Expected Annual Damage Without Project ⁽¹⁾	\$241,369
(b)	Expected Annual Damage With Project ⁽¹⁾	\$54,038
(c)	Expected Annual Damage Benefit (a) – (b)	\$187,331
(d)	Discount Rate	7.0%
(e)	Project Useful Life (# years)	30
(f)	Total Present Value of Future Benefits	\$2,324,599
(g)	Total Project Cost	\$13,488,958
(h)	Benefit/Cost Ratio	0.17

⁽¹⁾ This tool assumes no population growth thus EAD will be constant over analysis period.