

C-111 Spreader Canal Project

Project Managers:

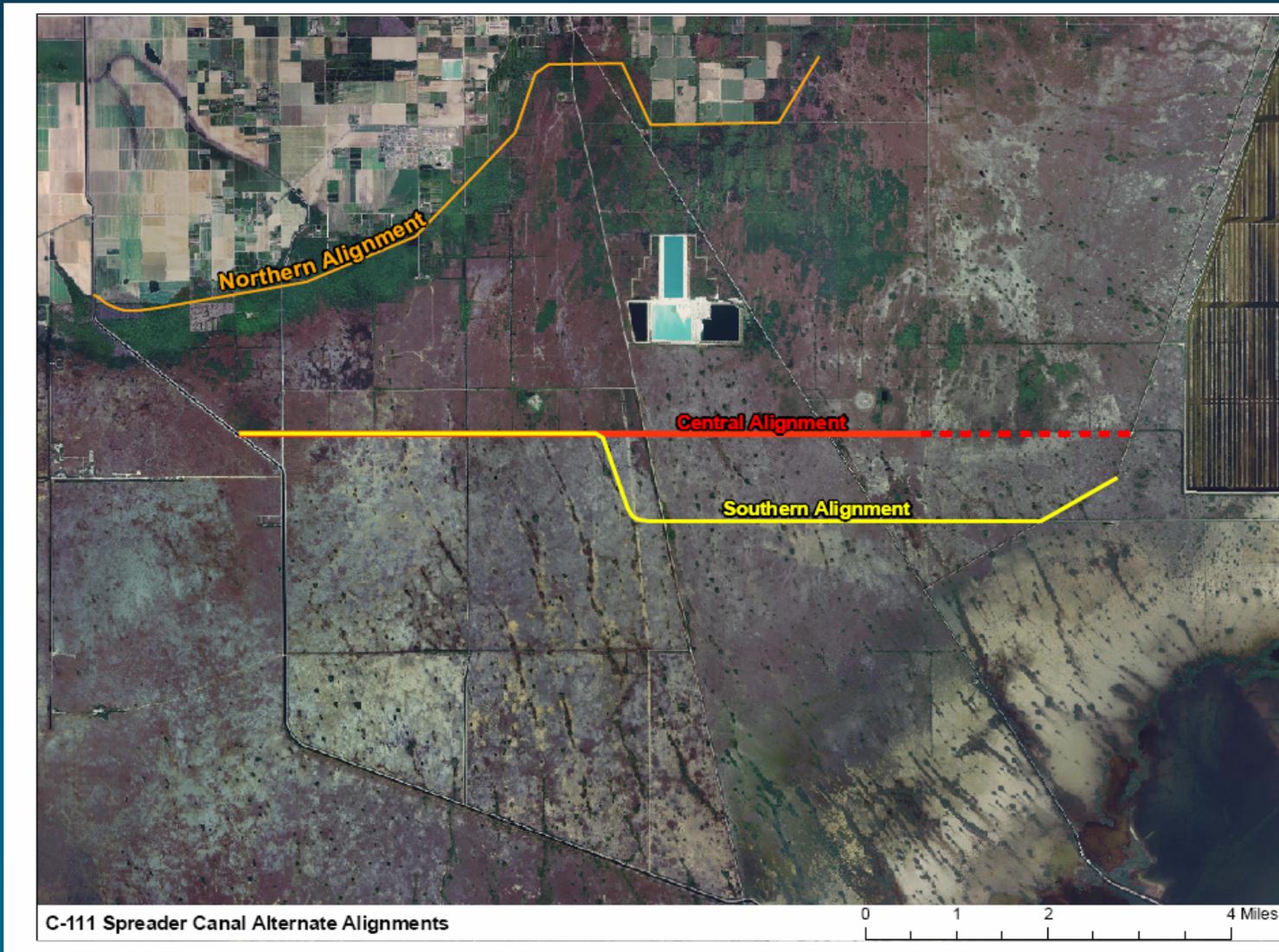
USACE - Jeff Couch

SFWMD – John Shaffer

Planning Technical Leads:

Aaron Stormant

Northern, Central, and Southern Alignments

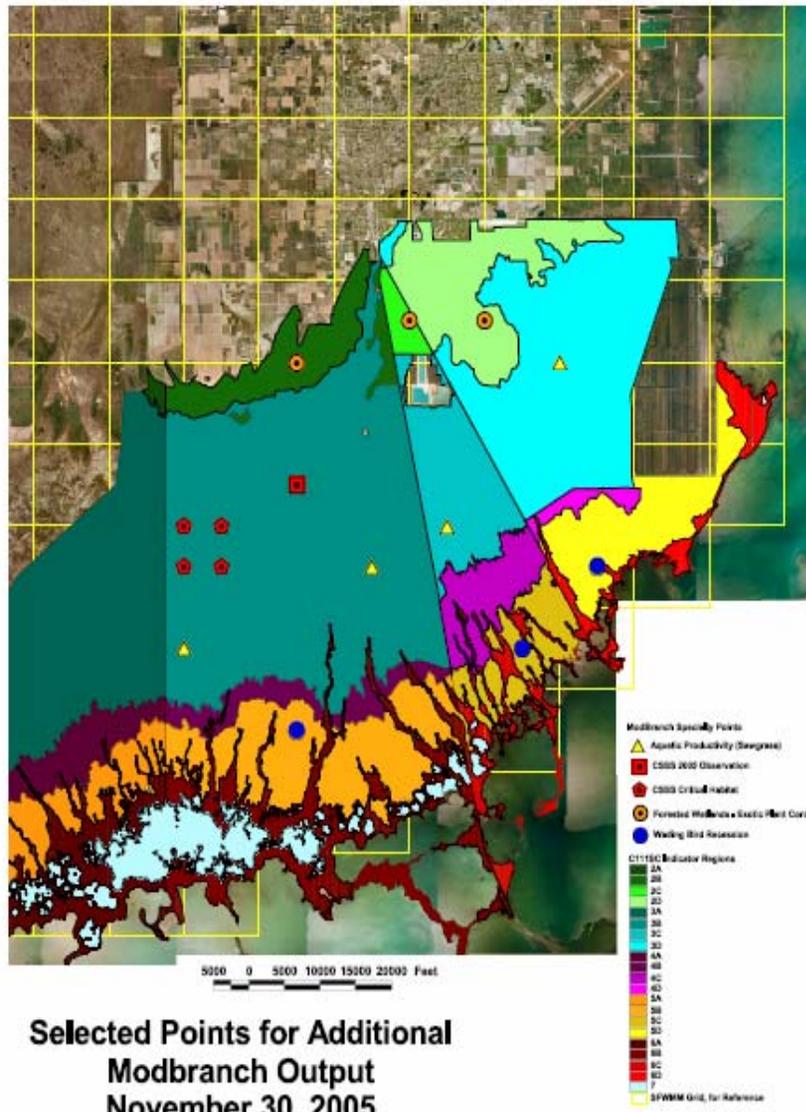


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Project Issue

- The C-111 SC PDT was tasked with recommending an alignment for a bridge crossing at US-1 to be presented to FDOT
- Ecosystem sub team met in Dec and evaluated model data and made a recommendation based on model output.
- USACE and SFWMD team met and considered all of the criteria for a recommendation including project cost, real estate acquisition, and ecosystem benefits

Indicator Points for Ecological Ranking



**Selected Points for Additional
Modbranch Output
November 30, 2005**

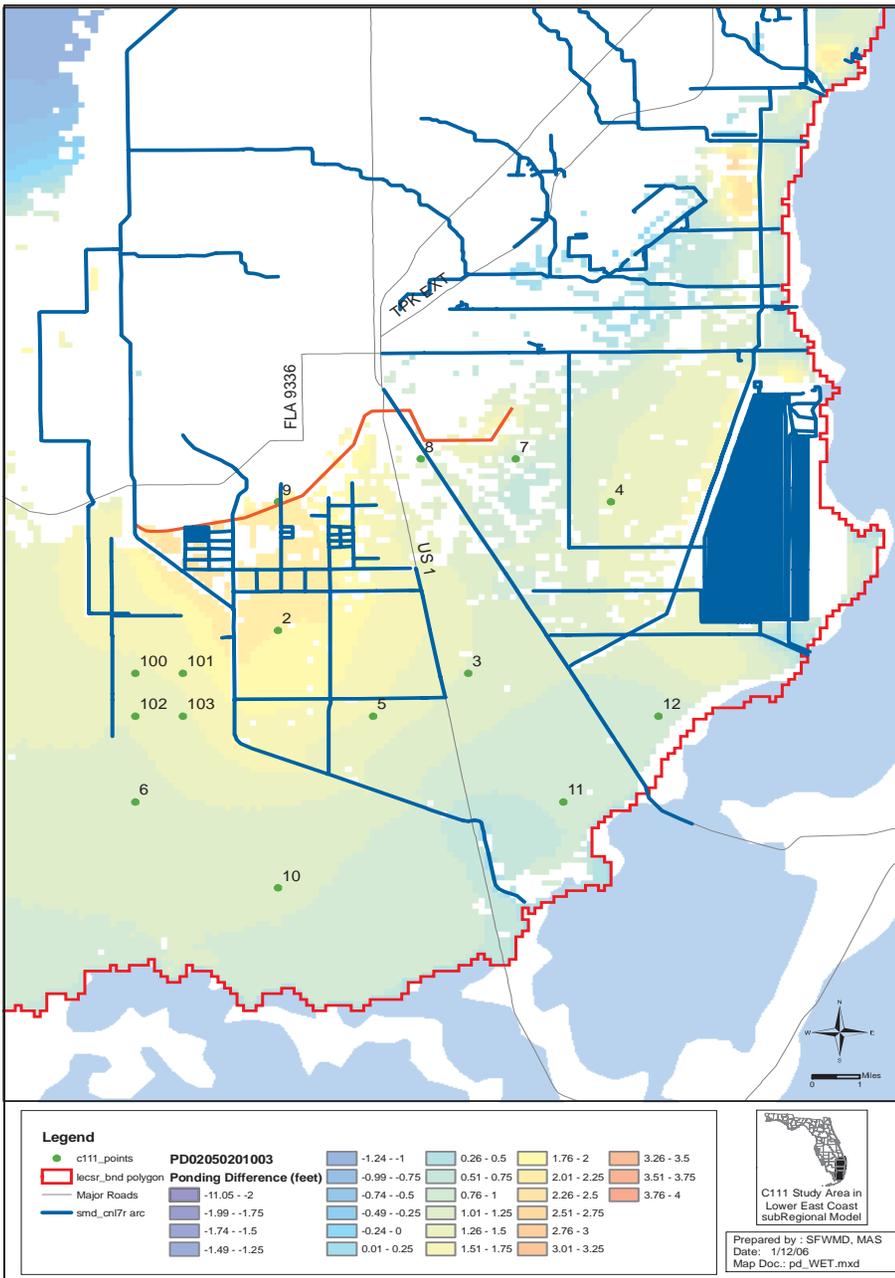
c111sc_region_modeling.apr - November 30, 2005 - CMB

Sub-Team Ecological Ranking

Based on MODFLOW & MODBRANCH Output

Measure Type	RUN	MODFLOW Based				MODBRANCH Based			
		Rank	Arithmetic Mean	Rank	Arithmetic Mean	Rank	Arithmetic Mean	Rank	Arithmetic Mean
		North	South	Central	Alt7R	North	South	Central	Alt7R
CSSS	CSSS Quantity of days between 01-Mar and 15-Jul where depth < 0'	2.33	1.67	1.67	1.00	2.00	2.00	2.00	1.00
AQProd	AQProd1 Total (Discontinuous) Hydroperiod	2.00	1.00	1.33	3.00	1.67	1.00	1.00	2.33
AQProd	AQProd2 Max Continuous Hydroperiod	2.00	1.67	2.00	1.67	1.67	1.00	1.33	2.33
ForestWL	ForestWL1 Max Continuous Hydroperiod	1.33	3.33	2.67	1.33	1.00	2.67	2.00	3.67
ForestWL	ForestWL2_May May Average Depth	1.00	1.67	1.67	2.67	1.00	1.67	1.67	2.33
ForestWL	ForestWL3_Jun June Average Depth	1.00	2.00	2.00	2.33	1.00	2.00	2.00	3.00
WadBrd	WadBrd1 Max Continuous Hydroperiod	1.67	1.00	1.33	2.67	1.00	1.00	1.00	1.00
WadBrd	WadBrd2 01-Nov to 31-Dec Depth Trendline Slope	1.00	1.33	1.33	1.00	1.00	1.00	1.00	1.00
WadBrd	WadBrd3 01-Jan to 30-Apr Depth Trendline Slope	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00
	SUM	14.00	15.33	15.67	16.67	11.33	13.33	13.00	17.67
	AVERAGE	1.56	1.70	1.74	1.85	1.26	1.48	1.44	1.96
	Ranks Averaged by Measure Type	North	South	Central	Alt7R	North	South	Central	Alt7R
	CSSS-Averaged (single value)	2.33	1.67	1.67	1.00	2.00	2.00	2.00	1.00
	AQProd-Averaged	2.00	1.33	1.67	2.33	1.67	1.00	1.17	2.33
	ForestWL-Averaged	1.11	2.33	2.11	2.11	1.00	2.11	1.89	3.00
	WadBrd-Averaged	1.44	1.33	1.44	1.56	1.00	1.00	1.00	1.00
	SUM	6.89	6.67	6.89	7.00	5.67	6.11	6.06	7.33
	AVERAGE	1.72	1.67	1.72	1.75	1.42	1.53	1.51	1.83

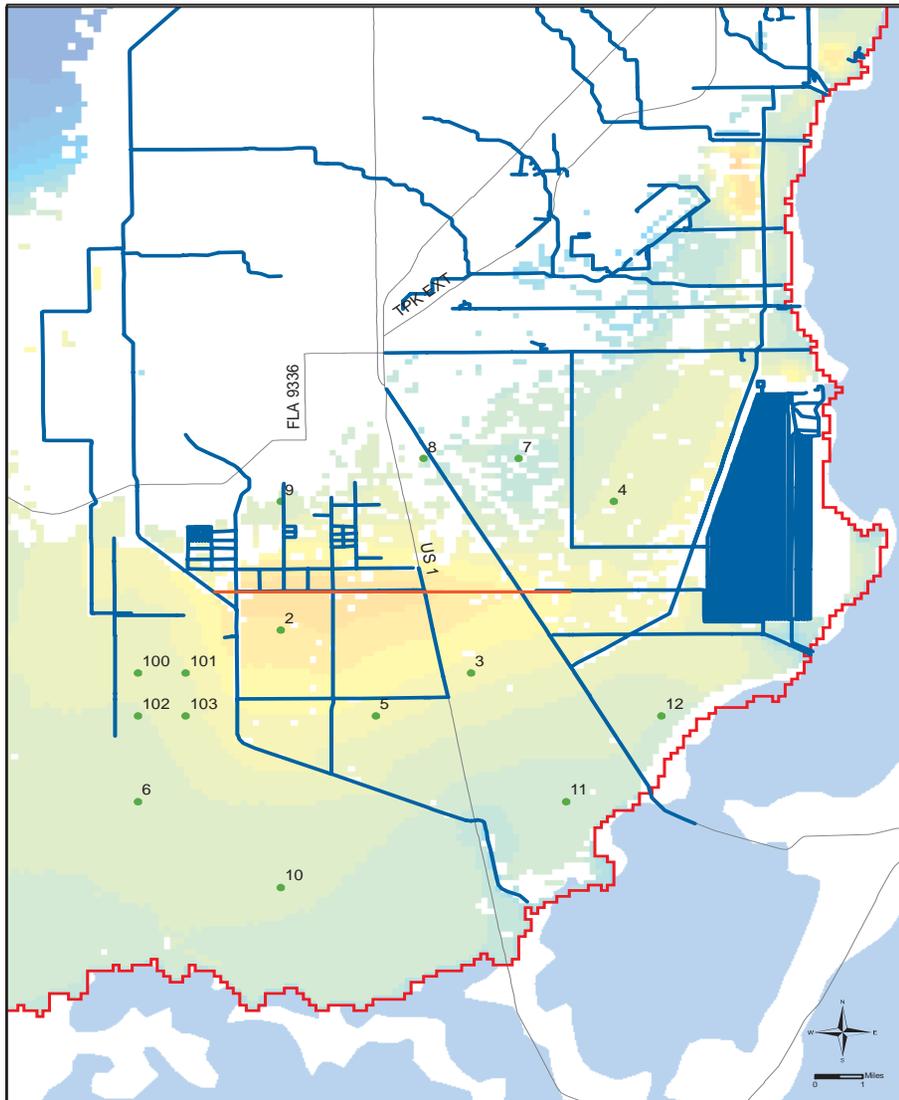
Ranking (1... up to 4; Smaller Value is Better Ranking)



Ponding difference map
for Layer 1 on Oct 18,
1995 (Max Head Wet
Year)

Difference between
Northern Alignment and
ALT7R Base Run

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Ponding difference map for Layer 1 on Oct 18, 1995 (Max Head Wet Year)

Difference between Central Alignment and ALT7R Base Run

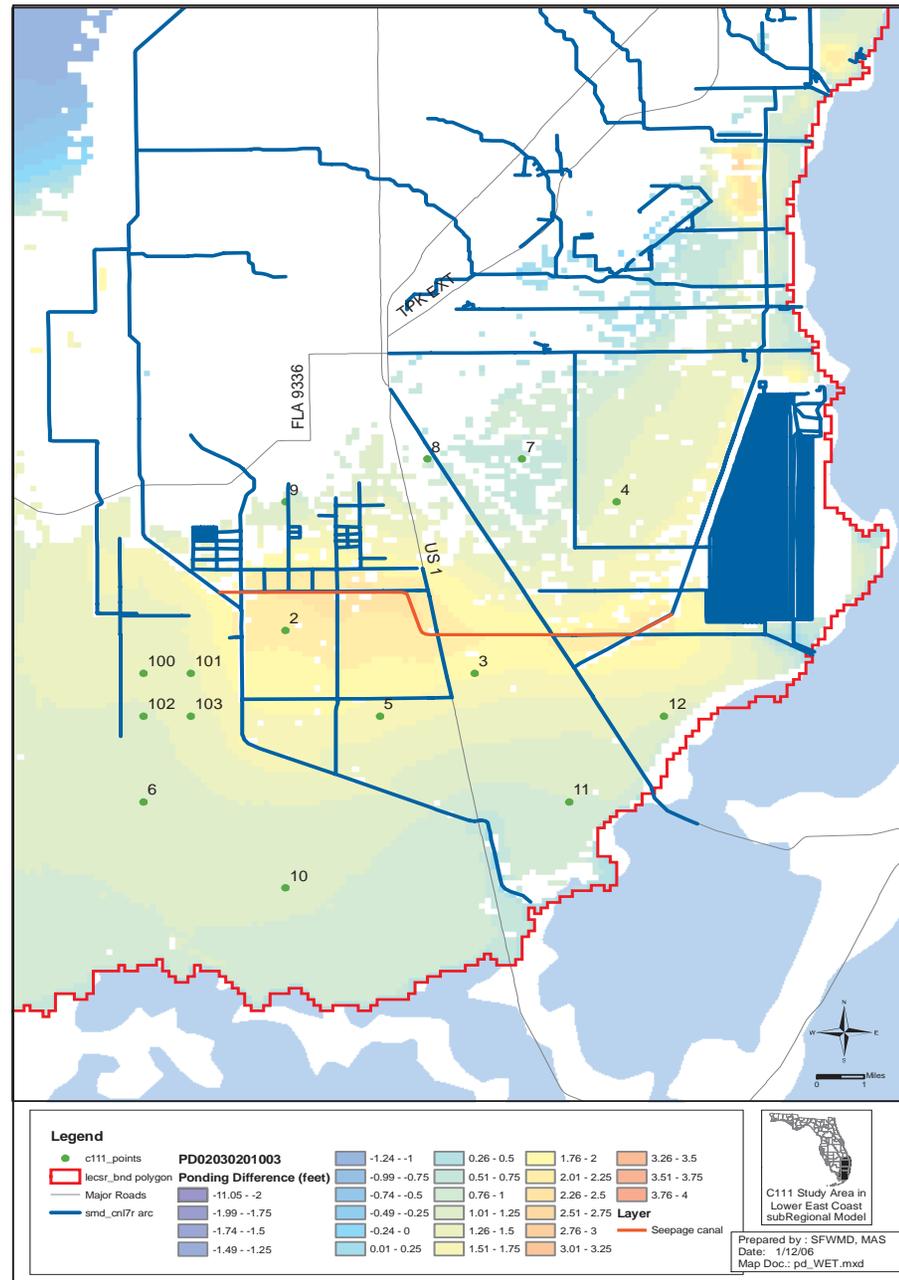
Legend

- c111_points
 - lecsr_bnd polygon
 - Major Roads
 - smd_cnl7r arc
- PD02020201003**
- | | | | |
|--|--|--|--|
| -1.24 - -1 | 0.26 - 0.5 | 1.76 - 2 | 3.26 - 3.5 |
| -0.99 - -0.75 | 0.51 - 0.75 | 2.01 - 2.25 | 3.51 - 3.75 |
| -0.74 - -0.5 | 0.76 - 1 | 2.26 - 2.5 | 3.76 - 4 |
| -0.49 - -0.25 | 1.01 - 1.25 | 2.51 - 2.75 | Layer |
| -0.24 - 0 | 1.26 - 1.5 | 2.76 - 3 | Seepage canal |
| -1.05 - -2 | 0.01 - 0.25 | 1.51 - 1.75 | 3.01 - 3.25 |
| -1.99 - -1.75 | | | |
| -1.74 - -1.5 | | | |
| -1.49 - -1.25 | | | |

C111 Study Area in Lower East Coast subRegional Model

Prepared by : SFWMD, MAS
Date: 1/12/06
Map Doc.: pd_WET.mxd

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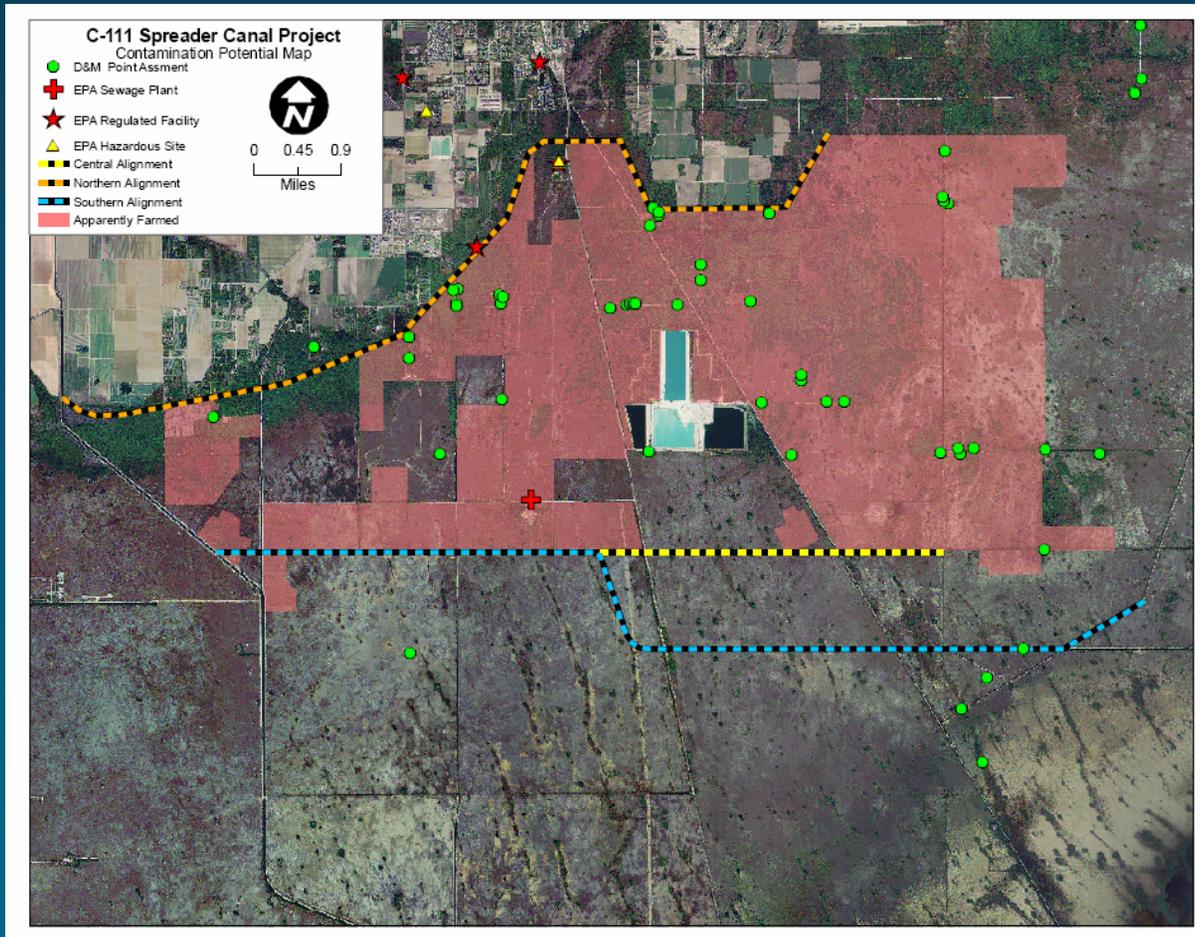


Ponding difference map
for Layer 1 on Oct 18,
1995 (Max Head Wet
Year)

Difference between
Southern Alignment and
ALT7R Base Run

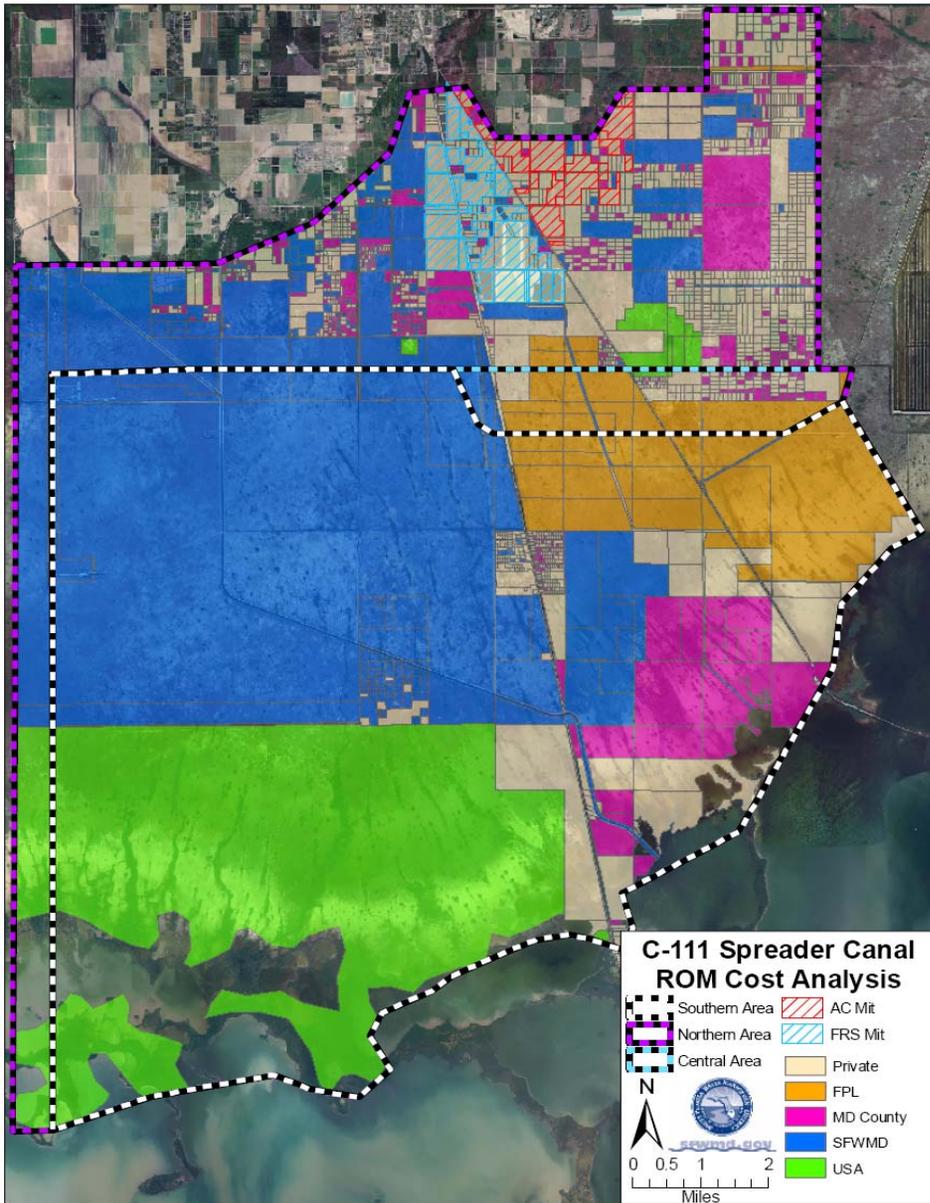
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Contamination Potential



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ROM Real Estate Requirements



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ROM Real Estate Requirements

By Alignment

	Northern Allignment			Central Allignment			Southern Allignment		
	Parcels	Acres	Cost	Parcels	Acres	Cost	Parcels	Acres	Cost
FPL	49	8,615.8	\$ -	42	8,217.8	\$ -	30	6,228.7	\$ -
USA*	15	20,795.7	\$ 5,865,000	6	18,680.4	\$ 478,000	3	18,637.8	\$ -
MD County	442	7,486.6	\$ 5,944,331	96	4,229.9	\$ 3,358,506	55	4,020.4	\$ 3,192,214
SFWMMD	312	36,517.6	\$ 16,091,502	112	26,413.9	\$ 11,622,133	108	26,124.9	\$ 11,494,969
Private**	1425	15,209.0	\$ 140,545,221	352	6,479.9	\$ 33,392,750	255	5,644.7	\$ 25,080,576
Total Costs***			\$ 181,921,738			\$ 52,759,500			\$ 42,949,180

Note* USA Land Costs Include Costs for Navy Site @ \$10K/acre.

Note ** Land Costs Were Not Included for 1,043 Acres of Private Lands Within the Atlantic Civil Mitigation Area, or for the 1,880 Acres Within the FRS Mitigation Area

Note *** Total Land Costs Include 8% For Administrative Costs

ROM Estimated Project Cost By Alignment

Alternative	Spreader Canal Length (Miles)	Total Spreader Canal (Cu Yds)	Unit Cost (\$/CY)	Canal Construction Cost	Pump Station Cost (Assumes 1-500 CFS pump)	Cost of Canal Construction and Pump Station	Cost of Canal Construction, Pump Station and 18% PED	Real Estate Cost	Total Cost
Northern	11	1,111,100	\$58.18	\$64,643,798	\$4,569,357	\$69,213,155	\$81,671,523	\$181,921,738	\$263,593,261
Central	9.3	907,400	\$58.18	\$52,792,532	\$4,569,357	\$57,361,889	\$67,687,029	\$52,579,501	\$120,266,530
Southern	10.4	1,018,200	\$58.18	\$59,238,876	\$4,569,357	\$63,808,233	\$75,293,715	\$42,949,180	\$118,242,895

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Recommendations

Based on the analyses completed to date, USACE & SFWMD Staff jointly recommend the following:

- The proposed US Hwy 1 bridge crossing be constructed at the central alignment (AKA Yellow Book) location.
- Focus remaining evaluation efforts on alternatives which generally follow the central and southern alignments.

The Way Ahead

- SFWMD will make a recommendation to FDOT based on the evaluation that was conducted
- Determine the scope of work for the modeling of the remaining alternatives
- Revise the project schedule to reflect the reduced scope on work for modeling