Wetland/Marsh Impact Evaluation

February 2007

Wetland/Marsh EFDC Modeling

Purpose:

The purpose of the wetland/marsh EFDC modeling is to determine the impacts of deepening the navigation channel; specifically, the effect on the salinity values throughout the marshes linked to the estuary. The EFDC modeling was used:

(1) to provide estimates of salinity at gaged locations throughout the Back, Middle, and Front Rivers; which was used to provide input to the Model to Marsh (M2M) neural network model to provide a porewater salinity input grid to the Marsh Succession Models; and

(2) to independently estimate salinity values for marsh cells under various deepening conditions.

The results of (1) are documented elsewhere. This report focuses on the results of (2).

Model Input Conditions:

The wetland/marsh impact evaluation input data was developed by the Savannah Harbor Expansion Wetland Interagency Coordination Team. The group developed four model input scenarios for evaluation (See Table 1).

Table 1- Model Input Conditions

Run Scenario	***River Flow***	***Sea Level Rise****	***Evaluation Period***
Basic Evaluation	*Average/Typical*	*Existing Sea Level*	*1-March to 1-November*
Sensitivity Analysis #1	*Low Flow/Dry*	*Existing Sea Level*	*1-March to 1-November*
Sensitivity Analysis #2A	*Average/Typical*	*25 cm Sea Level Rise*	*1-March to 1-November*
Sensitivity Analysis #2B	*Average/Typical*	*50 cm Sea Level Rise*	*1-March to 1-November*

**25 and 50 cm sea level rise conditions were specified by the Interagency Coordination Team and are based on EPA and NOAA projections.*

Average/typical river flows needed for the Basic Evaluation and Sensitivity Analysis #2A and B were determined using recorded gage data for Savannah River at Clyo, GA. The EFDC model has continuous input boundary conditions for a 7 year period (1997 - 2003) available for simulation. 1997 was found to have flow conditions representative of the long term average flows (See Table 2).

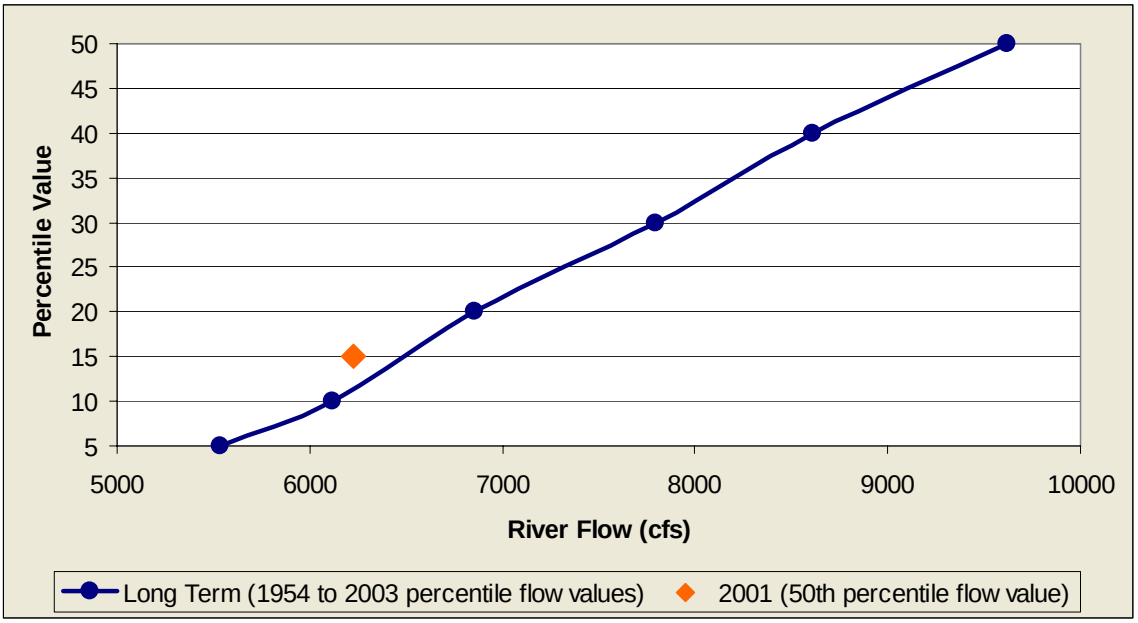
Table 2- Average River Flows from USGS gaging station at Clyo, GA

Period of Record	***Mar.***	***Apr.***	***May***	***June***	***July***	***Aug.***	***Sept.***	***Oct.***	***Overall***
	(cfs)	*(cfs)*	*(cfs)*	*(cfs)*	*(cfs)*	*(cfs)*	*(cfs)*	*(cfs)*	***(cfs)***
Long Term (1954-2003)	*17,998*	*17,205*	*12,029*	*10,254*	*9,118*	*9,035*	*8,566*	*8,615*	**11,603**
1997 Only	*22,016*	*11,380*	*12,527*	*9,729*	*8,853*	*9,944*	*6,370*	*7,627*	**11,056**
Percent Difference	*-22%*	*34%*	*-4%*	*5%*	*3%*	*-10%*	*26%*	*11%*	**5%**

The maximum percent difference is 34% occurring in April, meaning April of 1997 had less freshwater flowing downstream into the estuary than the long term average. Overall, the percent difference between the long term average and 1997 is 5%. Therefore, the growing season (March through October) of 1997 was considered to be an average flow period for modeling purposes.

The flow boundary conditions for Sensitivity Analysis #1 are low flow or dry year conditions. Using the recorded gage data at Clyo, GA, 2001 (March through October) was considered to be a low flow/dry period (See Figure 1).

Figure 1- River Flows from USGS gaging station at Clyo, GA



The long term Clyo gage data shows that low flow values range from 5,534cfs (5th percentile) to 6,858 cfs (20th percentile). The 50th percentile flow value during 2001 is 6,228 cfs. This value, 6,228 cfs, is approximately the 15th percentile value when looking at the long term Clyo flow data. Therefore, 2001 was considered a low flow/dry year for model simulations.

The two sea level rise conditions used in Sensitivity Analysis #2A and B were modeled by adding an additional 25 or 50 cm, depending on the run scenario, to the water surface elevations on the open ocean boundary cells. The sea level rise sensitivity analyses are based only on a change in the ocean boundary water surface elevation. There was no consideration of any potential change in the ocean boundary salinity density in this modeling effort.

All other model boundary inputs remain unaltered and correspond to the run time of 1 March to 1 November for 1997 or 2001, depending on the run scenario being modeled.

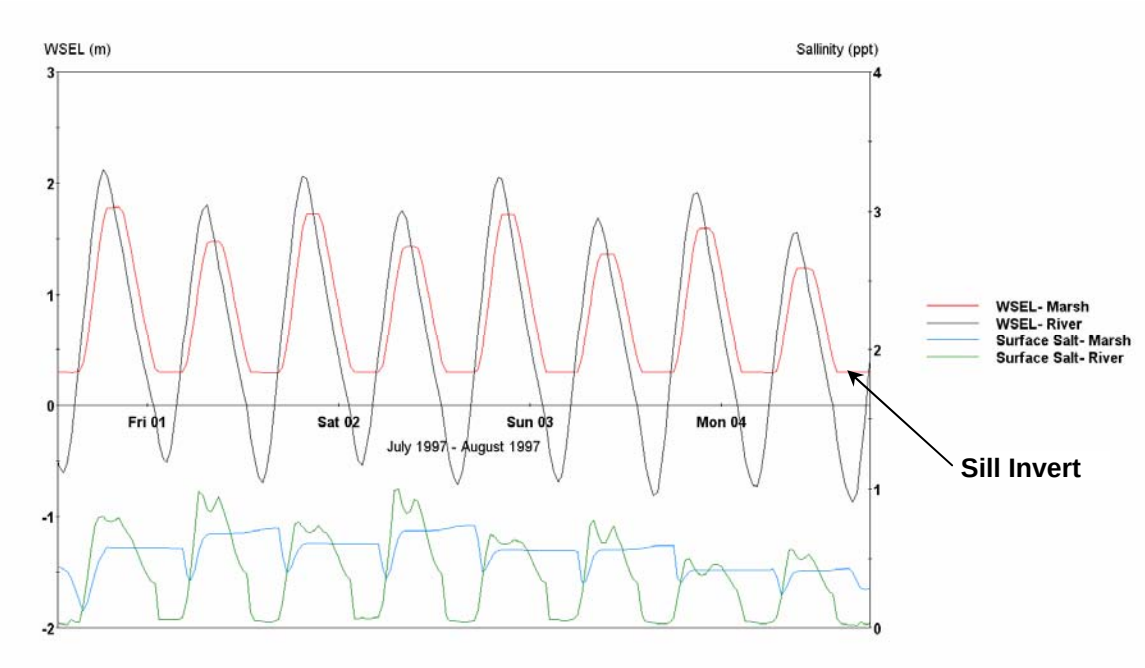
Model Limitations:

The EFDC model has undergone extensive calibration as outlined in the report titled *Development of the Hydrodynamic and Water Quality Models for the Savannah Harbor Expansion Project* and dated May 20, 2005. The model has been confirmed with additional datasets and is considered appropriate for making salinity predictions throughout the river system. However, model calibration was performed using data comparisons between grid cells and gages within the river system. No calibration points were located within the wetlands/marshes.

The marshes are simulated in the EFDC model grid using a marsh grid cell and a hydraulic structure. The hydraulic structure links the marsh grid cell is to a riverine grid cell with a rating table and a small sill (.1 m high). In reality there is not a structure linking the marsh to the river, however, for modeling purposes the structure allows interaction between the marsh and river while maintaining stability. The rating curve specifies the exchange flow rates between the river and the marsh over time. The sill allows the marsh to maintain a very small pool of water in the cell at all times. By keeping the marsh cells wet and not allowing them to dry out, the model remains stable. The wetlands interact with the river during times when the flood tide is rising above the elevation of the sill, and when the ebb tide is falling but is elevated above the sill. The sill prevents interaction between the marsh and the river during low tide. This would be expected because marshes are typically shallower than the surrounding rivers and creeks that furnish tide water. When comparing 50^{th} percentile marsh salinity to adjacent river cells, this explains why the marsh cells sometimes show higher salinity values.

The water carried during high tide is typically more saline than water carried at low tide. Once the tide is flushed from the marsh and the water surface has dropped below the elevation of the sill a small amount of water is left in the marsh cell to keep it wet. This small amount of water has a sustained high concentration of salinity from the flood tide, however the cell should actually be dry during this period of the tidal cycle (See Figure 2).

Figure 2- Water Surface Elevations and Surface Salinity for Marsh-Riverine Interaction



While the sill is necessary to maintain model stability, this method may predict higher salinity readings in the wetlands/marshes for a small portion of the tidal cycle than would actually occur. We do not, however, believe this to be significant.

Output Generated:

Three types of maps were generated to aid in evaluation of the impacts of deepening on the wetland/marshes.

Salinity Value Maps- Used as a baseline to evaluate the impacts. Maps show surface salinity values ranging from 0 to 32.5 ppt. These maps were only generated for the existing deepened channel condition for the two run periods of interest (1997 and 2001). They were not generated for each deepening scenario.

Salinity Difference Maps- Maps show salinity difference values (ppt) and compare changes in surface salinity values between the existing channel depth and each proposed deepened channel.

Threshold Salinity Maps- Maps show the boundary between fresh and salt water using 0.5 ppt salinity value as an indicator. Cells that are less than 0.5 ppt are pink and cells that are greater than 0.5 ppt are blue. The cells that change from less than to greater than 0.5 ppt with deepening are green.

All of the maps show the surface salinity values for both the 50% exceedance and the 10% exceedance values based on the run period (1 March to 1 November). The 10% exceedance values represents a salinity that is exceeded only 10% of the time. Statistics were done using the Post Processor developed by Tetra Tech.

In addition to the salinity maps there are tables showing marsh acreages impacted due to deepening. The acreages are based on the Threshold Salinity Maps and show the net impact (10% and 50% exceedance values) for marsh areas changing from less than 0.5 ppt to greater than 0.5 ppt or fresh to salt.

Findings:

The Salinity Value Base Maps for 1997 used in comparison to the Basic Evaluation and Sensitivity Analysis #2A & #2B show salinity values throughout the estuary system and the marshes. The salinity values are highest and reach the furthest upstream on Front River due to the deeper channel conditions than that of Middle, Back and Little Back Rivers. The 50% exceedance surface salinities on the Front River around River Street range from 3.01 to 5.00 ppt. Upstream of the tidegate on Back River the maximum salinity values are in the 7.01 to 9.00 ppt range. Between New Cut and Rifle Cut on Middle River the maximum surface salinity is 0.71 to 0.80 ppt. The salinity values in this area are directly related to those on Front River. The saline water is carried into Middle River though the entrance located just North of the Kings Island Turning Basin. There is also a connection from Middle River to the saline waters on Front River through Houston Cut and Steamboat River.

The Little Back River is mostly fresh water. Rifle Cut supplies both fresh and saline water from Middle River to Little Back River. Large volumes of water move very swiftly through Rifle Cut with the incoming and outgoing tides.

The 10% exceedance surface salinity values show a more drastic picture of salinity values throughout the system. The 10% exceedance values represents a salinity that is exceeded only 10% of the time. The 10% exceedance surface salinities on the Front River around River Street range from 7.01 to 9.00 ppt. Upstream of the tidegate on Back River the maximum salinity values are in the 11.01 to 15.00 ppt range. Between New Cut and Rifle Cut on Middle River the maximum surface salinity is 3.01 to 5.00 ppt. The Little Back River may still be considered mostly fresh water, however most salinity values are less than 0.20 ppt.

The Salinity Value Base Maps for 2001 used in comparison to Sensitivity Analysis #1 show salinity values throughout the estuary system and the marshes. The salinity values are highest and reach the furthest upstream on Front River due to the deeper channel conditions than that of Middle, Back and Little Back Rivers. The saline waters intrude further upstream during the dryer conditions of 2001 than during the average conditions of 1997 due to less freshwater flow coming downstream into the estuary during 2001 than there is in 1997. Also, the salinity values for 2001 increase throughout the system as compared to 1997, which would be expected due to the lower freshwater flow condition in 2001.

The 50% exceedance surface salinities on the Front River around River Street range from 5.01 to 7.00 ppt. Upstream of the tidegate on Back River the maximum salinity values are in the 11.01 to 15.00 ppt range. Between New Cut and Rifle Cut on Middle River the maximum surface salinity is 2.01 to 3.00 ppt. The 10% exceedance surface salinities on the Front River around River Street range from 9.01 to 11.00 ppt. Upstream of the tidegate on Back River the maximum salinity

values are in the 11.01 to 15.00 ppt range. Between New Cut and Rifle Cut on Middle River the maximum surface salinity is 5.01 to 7.00 ppt. The Little Back River has salinity values from 0.41 ppt and up.

Basic Evaluation

The Basic Evaluation includes five model runs each with a different channel depth: existing conditions (42-ft depth), 44-ft, 45-ft, 46-ft and 48-ft depths. The input conditions for the run are average/typical river flow and existing sea level. The evaluation period is 1 March to 1 November 1997.

The Salinity Difference Maps for the Basic Evaluation show changes/differences in salinity throughout the estuary. The impacts with deepening just an additional 2 ft extend above Steamboat River on Front River and throughout Middle, Back and Little Back Rivers. The maximum increase in salinity for the 44-ft deepening is 0.80 and 0.84 ppt, 50% and 10% exceedance respectively (See Table 3). As the channel is deepened to 48-ft, the maximum proposed, the maximum increase in salinity jumps to 2.19 and 2.54 ppt, 50% and 10% exceedance respectively.

Table 3- Maximum Salinity Differences- Basic Evaluation

Depth	Maximum Salinity Difference	
	10% Exceedance	50% Exceedance
44-ft	0.84	0.80
45-ft	1.24	1.15
46-ft	1.73	1.49
48-ft	2.54	2.19

The increase in maximum salinity differences with the increase in channel depth appears to be a linear relationship. However, the maximum increases are generally found on the Front River where the deepening is occurring. A quick view of Table 3 doesn't tell the full story of salinity impacts with deepening. The Salinity Difference Maps provide a clearer picture of what is happening in the areas of greatest concern: Middle, Little Back, and Back Rivers.

The Threshold Maps for the Basic Evaluation show the boundary lines in the estuary between fresh (salinity less than 0.5 ppt) to salt (salinity greater than 0.5 ppt) water. These maps are comparisons between the baseline and a deepened condition, which allows the change from fresh to salt water to be shown on the plots. The marsh acreages associated with the changes are noted on the maps (also, See Table 4).

Table 4- Marsh Acreages Impacted- Basic Evaluation

Depth	Acreages Negatively Impacted		Acreages Positively Impacted		Net Impact Net Positive, (Net Negative)	
	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance
44-ft	0	1633.2	0	0	(0)	(1633.2)
45-ft	0	1633.2	0	0	(0)	(1633.2)
46-ft	0	1633.2	0	0	(0)	(1633.2)
48-ft	299.0	1932.2	0	0	(299.0)	(1932.2)

All of the deepening scenarios show an impact on marsh acreages becoming more salty. The range of acreages impacted is from 299 acres for the 10% exceedance value and 1932.2 acres for the 50% exceedance value. The 10% exceedance maps show only one marsh to be negatively impacted for the 48-ft deepening, which is located north of Steamboat River between Front and Middle Rivers. The 50% exceedance maps show several marshes to be negatively impacted for each deepening. The impacted marshes are located in the vicinity of Steamboat River and Rifle Cut on Front, Middle and Little Back Rivers.

Sensitivity Analysis #1

Sensitivity Analysis #1 includes five model runs each with a different channel depth: existing conditions (42-ft depth), 44-ft, 45-ft, 46-ft and 48-ft depths. The input conditions for the run are low flow/dry river flow and existing sea level. The evaluation period is 1 March to 1 November 2001.

The Salinity Difference Maps for the Sensitivity Analysis #1 show changes/differences in salinity throughout the estuary. The maximum increase in salinity for the 44-ft deepening is 0.80 and 0.92 ppt, 50% and 10% exceedance respectively (See Table 5). As the channel is deepened to 48-ft, the maximum proposed, the maximum increase in salinity jumps to 2.39 and 2.75 ppt, 50% and 10% exceedance respectively.

Table 5- Maximum Salinity Differences- Sensitivity Analysis #1

Depth	Maximum Salinity Difference	
	10% Exceedance	50% Exceedance
44-ft	0.92	0.80
45-ft	1.42	1.19
46-ft	1.93	1.61
48-ft	2.75	2.39

The Threshold Maps for the Sensitivity Analysis #1 show the boundary lines in the estuary between fresh (salinity less than 0.5 ppt) to salt (salinity greater than 0.5 ppt) water. These maps are comparisons between the baseline and a deepened condition, which allows the change from fresh to salt water to be shown on the plots. The marsh acreages associated with the changes are noted on the maps (also, See Table 6).

Table 6- Marsh Acreages Impacted- Sensitivity Analysis #1

Depth	Acreages Negatively Impacted		Acreages Positively Impacted		Net Impact Net Positive, (Net Negative)	
	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance
44-ft	494.2	469.2	0	0	(494.2)	(469.2)
45-ft	494.2	768.2	0	0	(494.2)	(768.2)
46-ft	494.2	768.2	0	0	(494.2)	(768.2)
48-ft	494.2	768.2	0	0	(494.2)	(768.2)

Each deepening scenario for the Sensitivity Analysis #1 shows negative impacts on the marshes. The number of acres effected ranges from 469.2 to 768.2. The 10% exceedance maps show two marshes negatively impacted for the each deepening. The impacted marshes are located on Little Back River between Rifle Cut and McCoy Cut. The 50% exceedance maps show one marsh on Front River north of Steamboat River negatively impacted for the 44-ft deepening. Two marshes are negatively impacted for the 45-ft, 46-ft and 48-ft deepenings, located north of Steamboat River, one on Front River and one on Middle River.

Sensitivity Analysis #2A

Sensitivity Analysis #2A includes five model runs each with a different channel depth: existing conditions (42-ft depth), 44-ft, 45-ft, 46-ft and 48-ft depths. The input conditions for the run are average/typical river flow and a 25 cm sea level rise. The evaluation period is 1 March to 1 November 1997.

The Salinity Difference Maps for the Sensitivity Analysis #2A show changes/differences in salinity throughout the estuary. The maximum increase in salinity for the 44-ft deepening is 1.39 and 1.47 ppt, 50% and 10% exceedance respectively (See Table 7). As the channel is deepened to 48-ft, the maximum proposed, the maximum increase in salinity jumps to 2.67 and 3.16 ppt, 50% and 10% exceedance respectively.

Table 7- Maximum Salinity Differences- Sensitivity Analysis #2A

Depth	Maximum Salinity Difference	
	10% Exceedance	50% Exceedance
Existing	0.89	0.86
44-ft	1.47	1.39
45-ft	1.87	1.70
46-ft	2.28	2.05
48-ft	3.16	2.67

The 25 cm sea level rise boundary condition causes further salinity intrusion in the estuary. The 48-ft deepening, 10% exceedance map shows the salinity changes reach as far upstream as the I-95 bridge crossing.

The Threshold Maps for the Sensitivity Analysis #2A show the boundary lines in the estuary between fresh (salinity less than 0.5 ppt) to salt (salinity greater than 0.5 ppt) water. These maps are comparisons between the baseline and a deepened condition, which allows the change from fresh to salt water to be shown on the plots. The marsh acreages associated with the changes are noted on the maps (also, See Table 8).

Table 8- Marsh Acreages Impacted- Sensitivity Analysis #2A

	Acreages Negatively Impacted		Acreages Positively Impacted		Net Impact Net Positive, (Net Negative)	
Depth	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance
Existing	299	1287.4	0	0	(299)	(1287.4)
44-ft	299	1932.2	0	0	(299)	(1932.2)
45-ft	299	1932.2	0	0	(299)	(1932.2)
46-ft	299	1932.2	0	0	(299)	(1932.2)
48-ft	299	1932.2	0	0	(299)	(1932.2)

Each deepening scenario for the Sensitivity Analysis #2A shows a negative impact on the marshes. The number of acres effected ranges from 299 to 1932.2. The 10% exceedance maps show one marsh negatively impacted for all the deepenings, which is located north of Steamboat River between Front and Middle Rivers. The 50% exceedance maps show several marshes negatively impacted for each deepening in and around Steamboat River and Rifle Cut.

Sensitivity Analysis #2B

Sensitivity Analysis #2B includes five model runs each with a different channel depth: existing conditions (42-ft depth), 44-ft, 45-ft, 46-ft and 48-ft depths. The input conditions for the run are average/typical river flow and a 50 cm sea level rise. The evaluation period is 1 March to 1 November 1997.

The Salinity Difference Maps for the Sensitivity Analysis #2B show changes/differences in salinity throughout the estuary. The maximum increase in salinity for the 44-ft deepening is 2.09 and 2.13 ppt, 50% and 10% exceedance respectively (See Table 9). As the channel is deepened to 48-ft, the maximum proposed, the maximum increase in salinity jumps to 3.22 and 3.64 ppt, 50% and 10% exceedance respectively.

Table 9- Maximum Salinity Differences- Sensitivity Analysis #2B

Depth	Maximum Salinity Difference	
	10% Exceedance	50% Exceedance
Existing	1.74	1.60
44-ft	2.13	2.09
45-ft	2.48	2.33
46-ft	2.87	2.62
48-ft	3.64	3.22

As expected, the 50 cm sea level rise boundary condition causes further salinity intrusion in the estuary. The 48-ft deepening, 10% exceedance map shows the salinity changes reach upstream to the I-95 bridge crossing. The trend with increasing sea level is an increase in salinity values throughout the estuary.

The Threshold Maps for the Sensitivity Analysis #2B show the boundary lines in the estuary between fresh (salinity less than 0.5 ppt) to salt (salinity greater than 0.5 ppt) water. These maps are comparisons between the baseline and a deepened condition, which allows the change from fresh to salt water to be shown on the plots. The marsh acreages associated with the changes are noted on the maps (also, See Table 10).

Table 10- Marsh Acreages Impacted- Sensitivity Analysis #2B

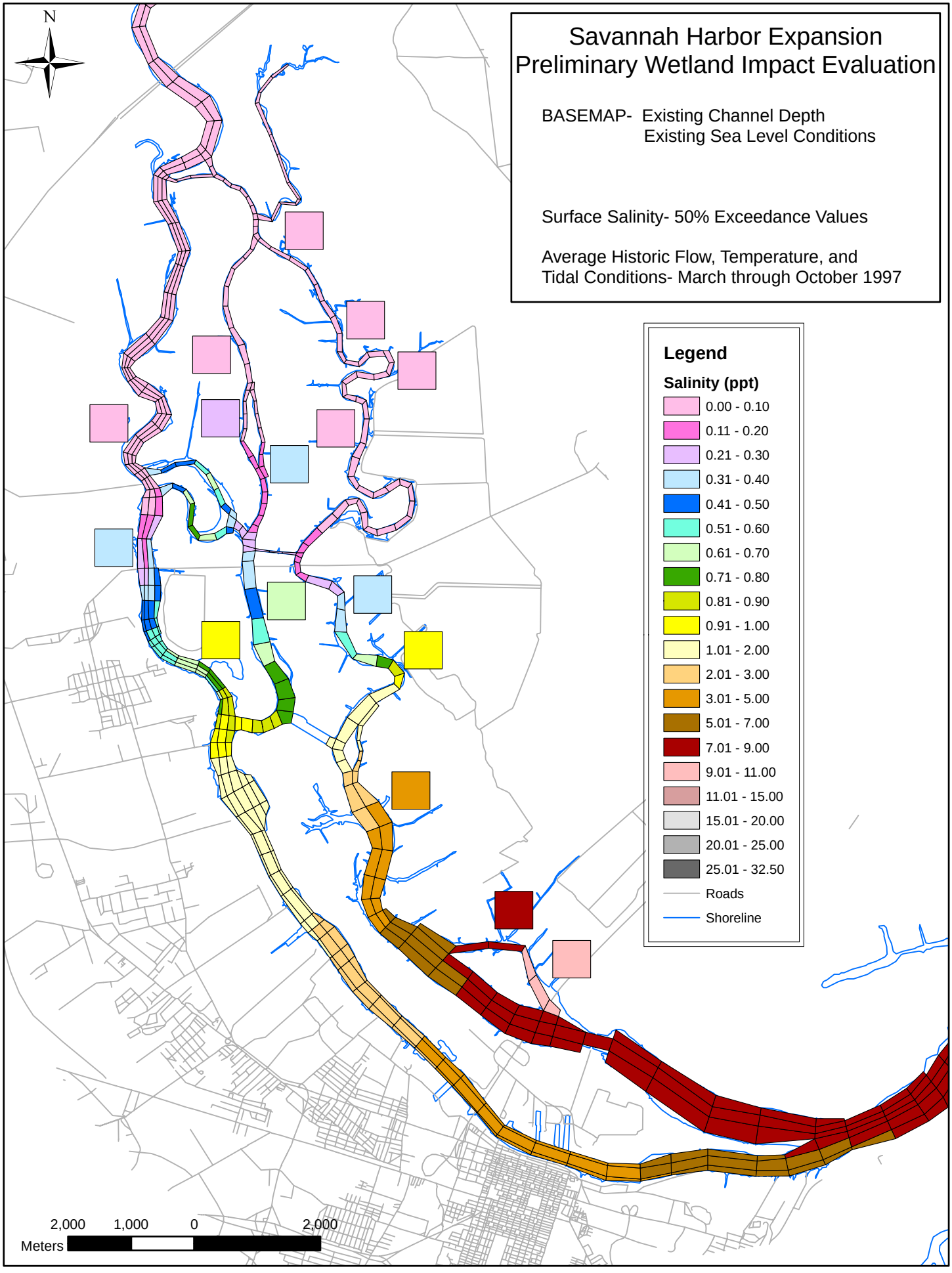
	Acreages Negatively Impacted		Acreages Positively Impacted		Net Impact Net Positive, (Net Negative)	
Depth	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance	10% Exceedance	50% Exceedance
Existing	299	1932.2	0	0	(299)	(1932.2)
44-ft	1210.8	1932.2	0	0	(1210.8)	(1932.2)
45-ft	1457.9	1932.2	0	0	(1457.9)	(1932.2)
46-ft	1457.9	1932.2	0	0	(1457.9)	(1932.2)
48-ft	1457.9	1932.2	0	0	(1457.9)	(1932.2)

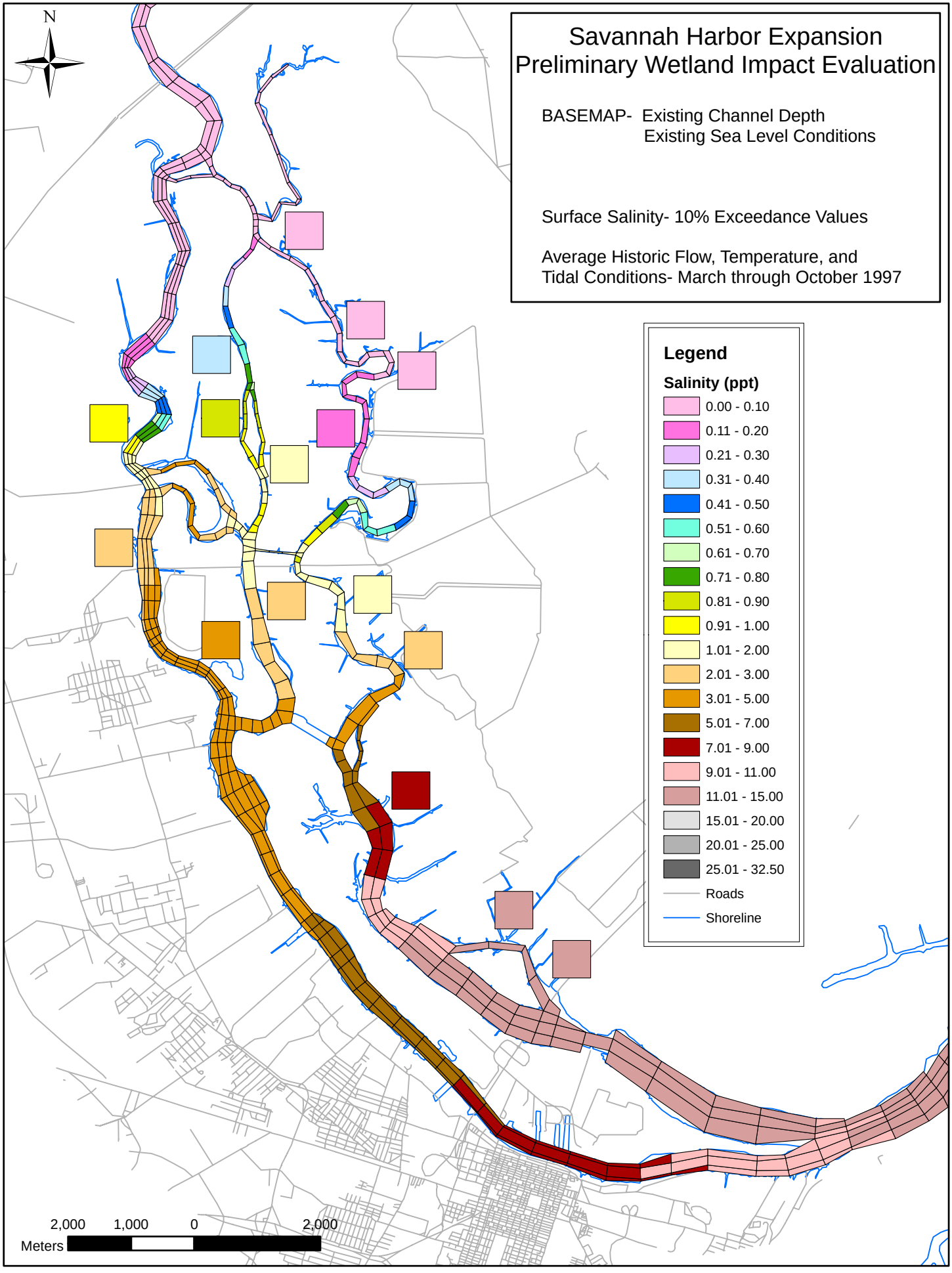
Each deepening scenario for the Sensitivity Analysis #2B shows a negative impact on the marshes. The number of acres effected ranges from 1210.8 to 1932.2. The 10% exceedance maps show five marshes negatively impacted for the 45-ft, 46-ft, and 48-ft. Four are located on Little Back River and one is located on Middle River between Front and Middle Rivers. The 50% exceedance maps show four marshes negatively impacted for each deepening, located in the vicinity of Steamboat River and Rifle Cut.

Conclusion:

The EFDC modeling predicts that there will be impacts on the marshes/wetlands with each deepening. The level of impact depends directly on the proposed depth of the navigation channel. The trends indicate that as the navigation channel is deepened salinity intrudes further and further upstream. Also, salinity is propagated even further upstream with the rising sea level.

Base Maps


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Existing Sea Level Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity (ppt)
0.00 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
11.01 - 15.00
15.01 - 20.00
20.01 - 25.00
25.01 - 32.50
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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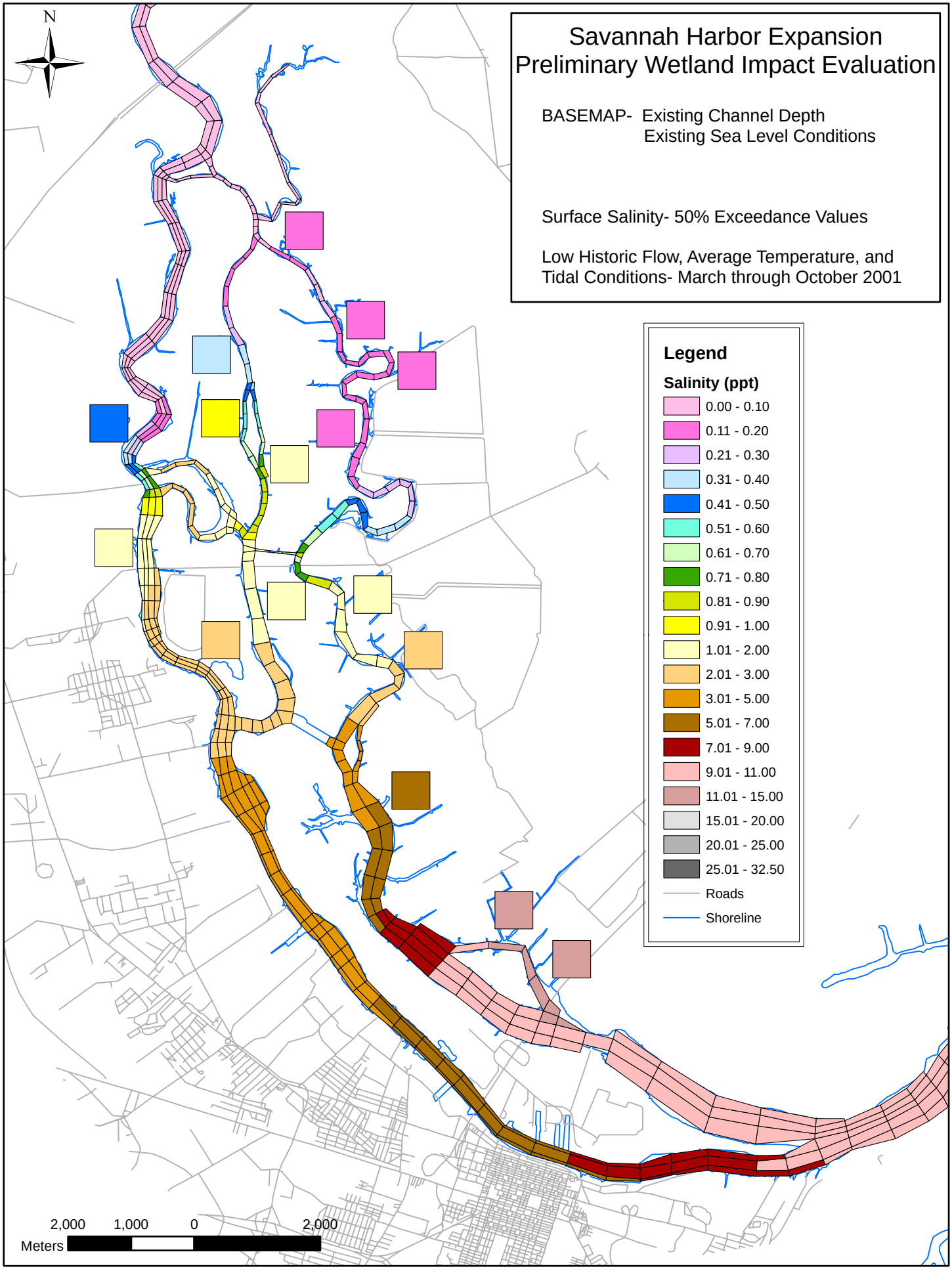
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Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Existing Sea Level Conditions
Surface Salinity- 50% Exceedance Values
Low Historic Flow, Average Temperature, and
Tidal Conditions- March through October 2001
Legend
Salinity (ppt)
0.00 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
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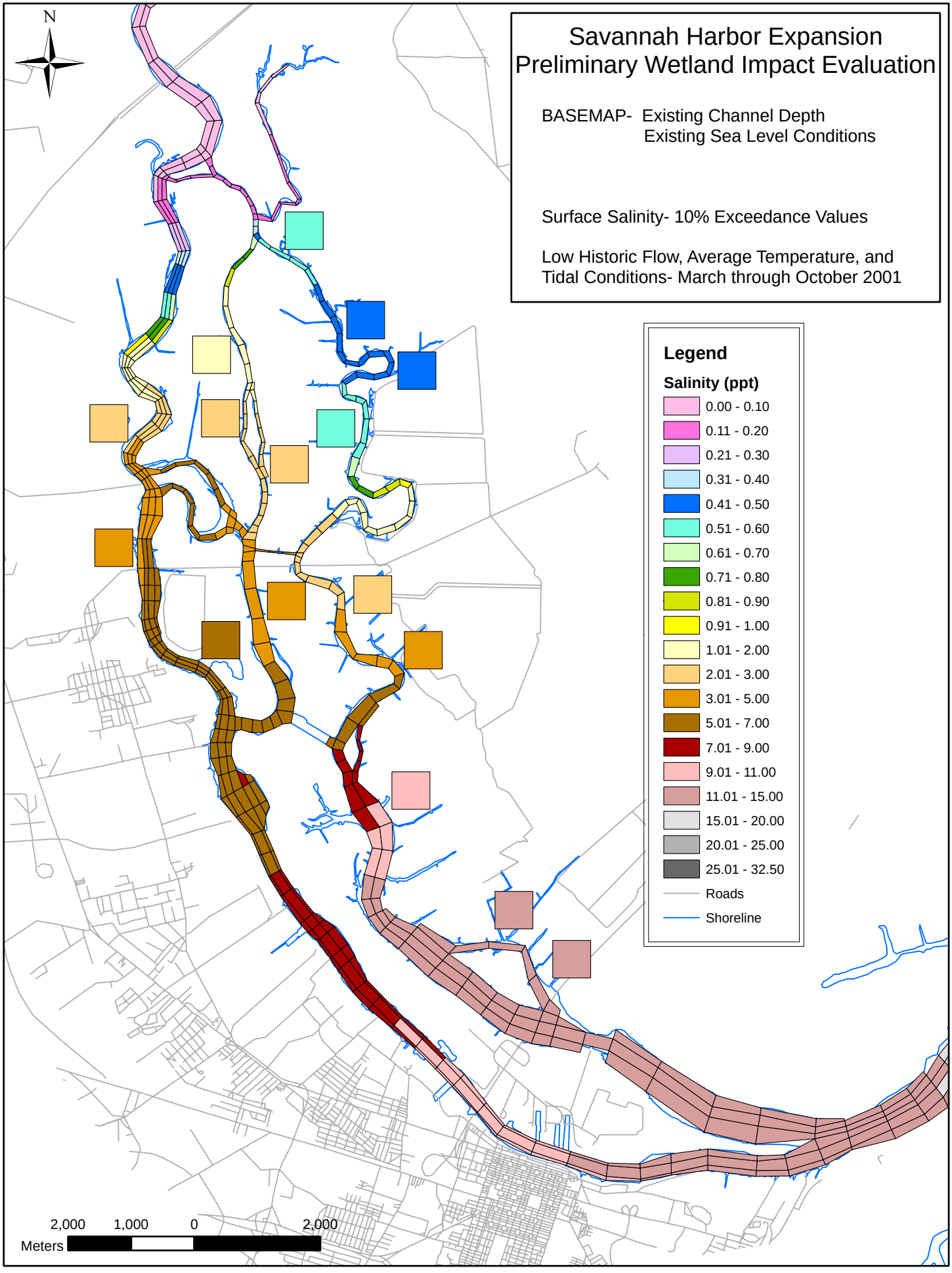
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2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
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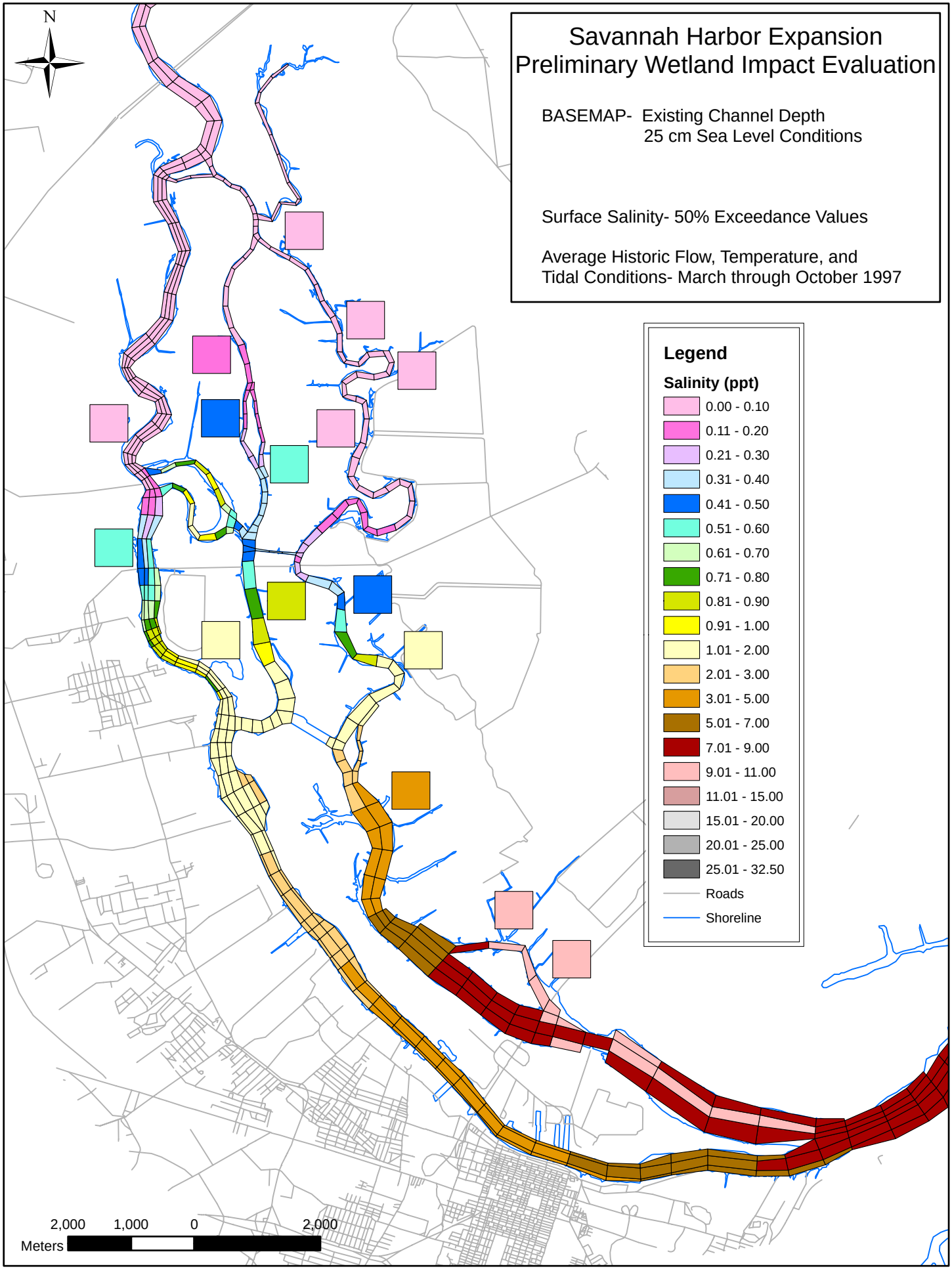
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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0.71 - 0.80
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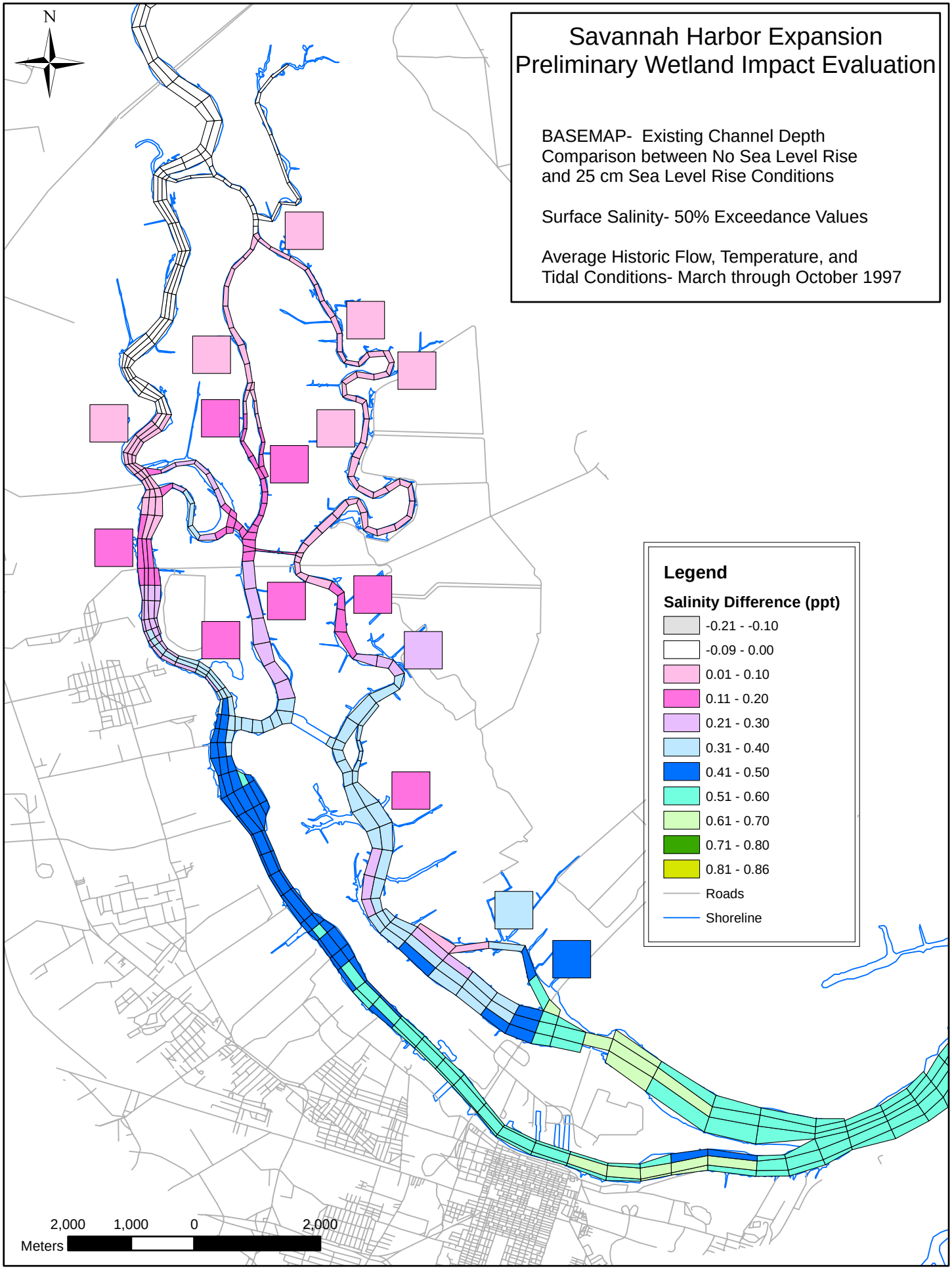
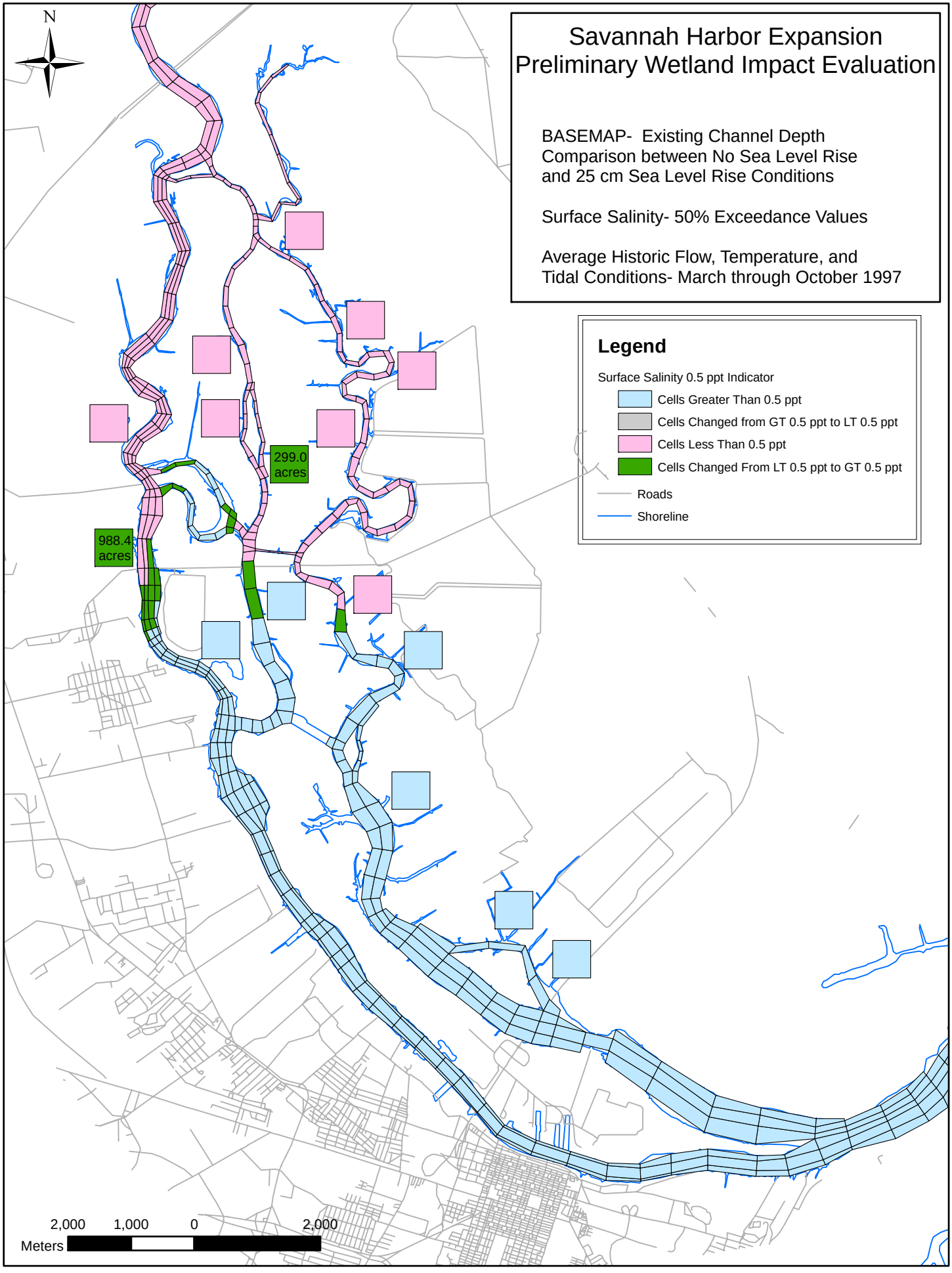
0.91 - 1.00
1.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
11.01 - 15.00
15.01 - 20.00
20.01 - 25.00
25.01 - 32.50
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Comparison between No Sea Level Rise
and 25 cm Sea Level Rise Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.21 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.86
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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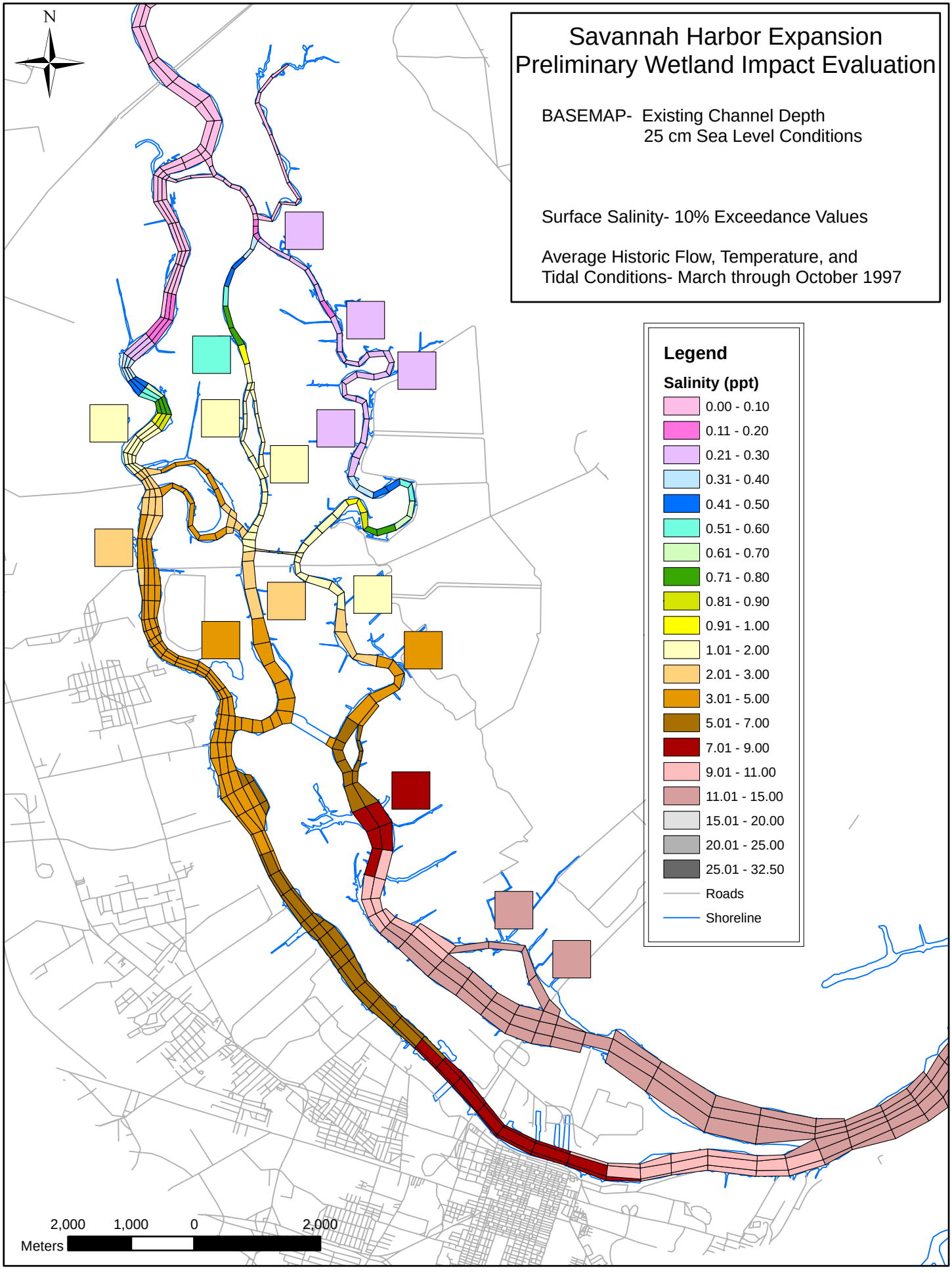
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth Comparison between No Sea Level Rise and 25 cm Sea Level Rise Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
988.4 acres
2,000 1,000 0 2,000
Meters
February 2007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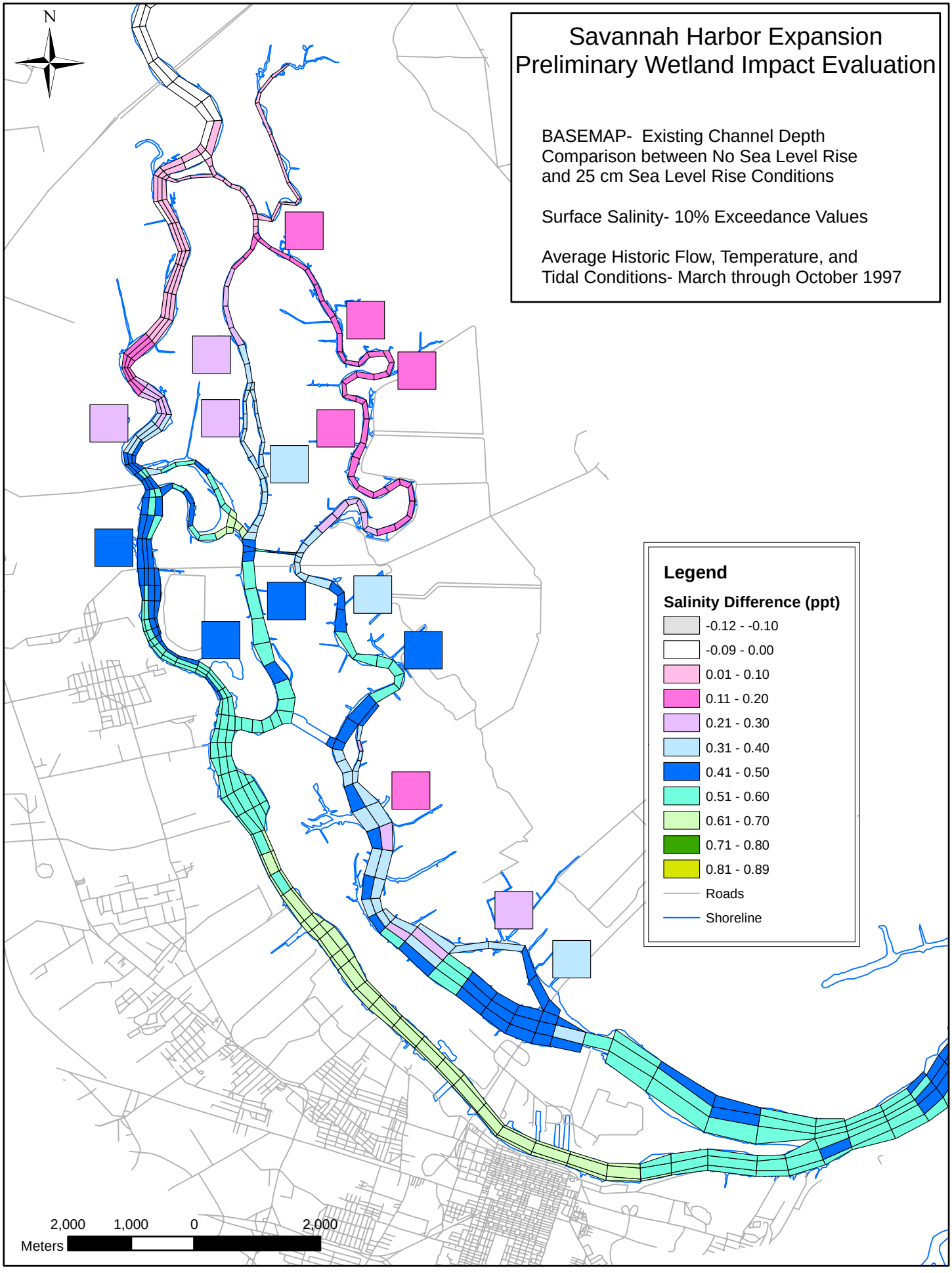
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
25 cm Sea Level Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity (ppt)
0.00 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
11.01 - 15.00
15.01 - 20.00
20.01 - 25.00
25.01 - 32.50
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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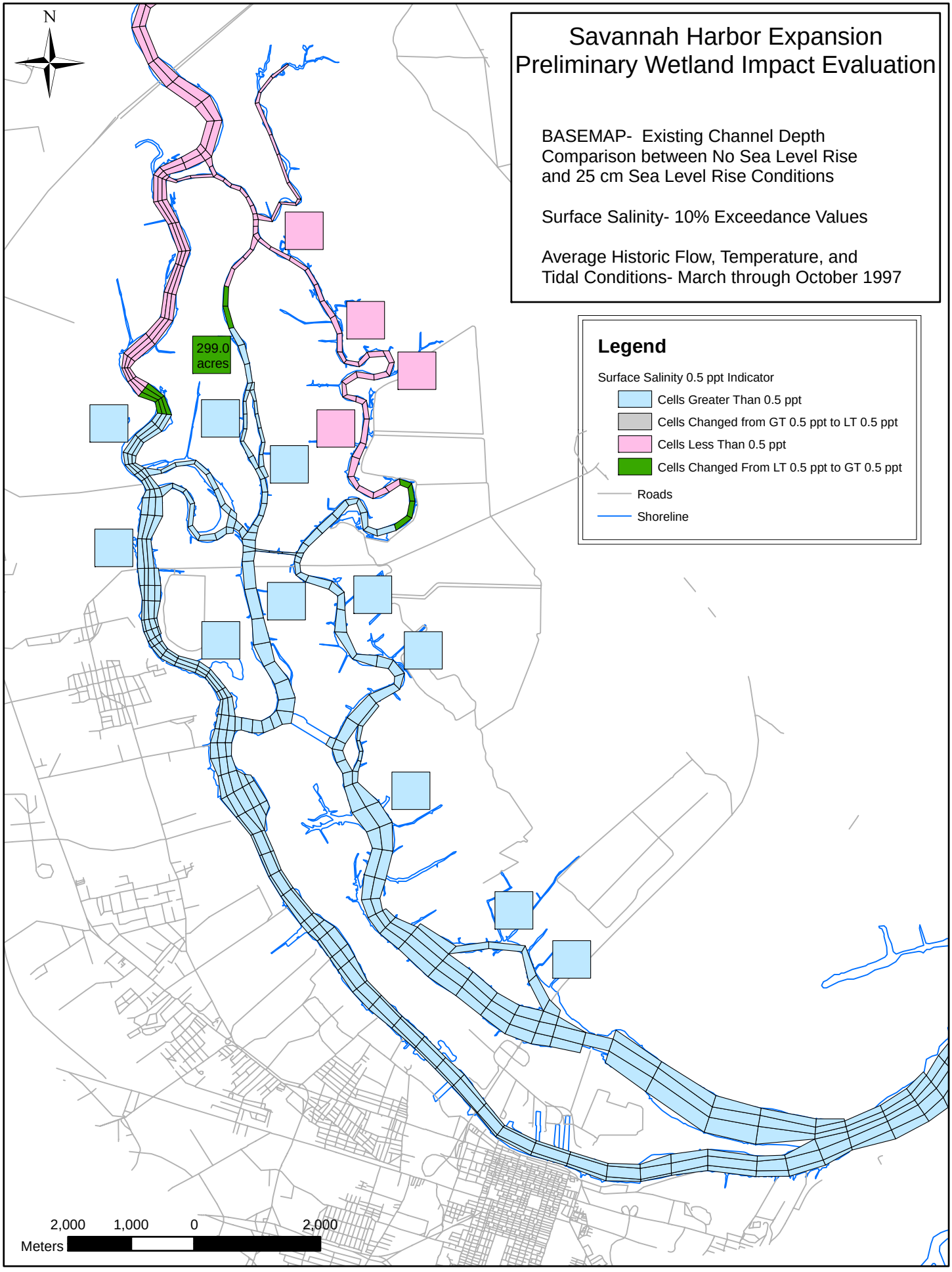
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Comparison between No Sea Level Rise
and 25 cm Sea Level Rise Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.12 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.89
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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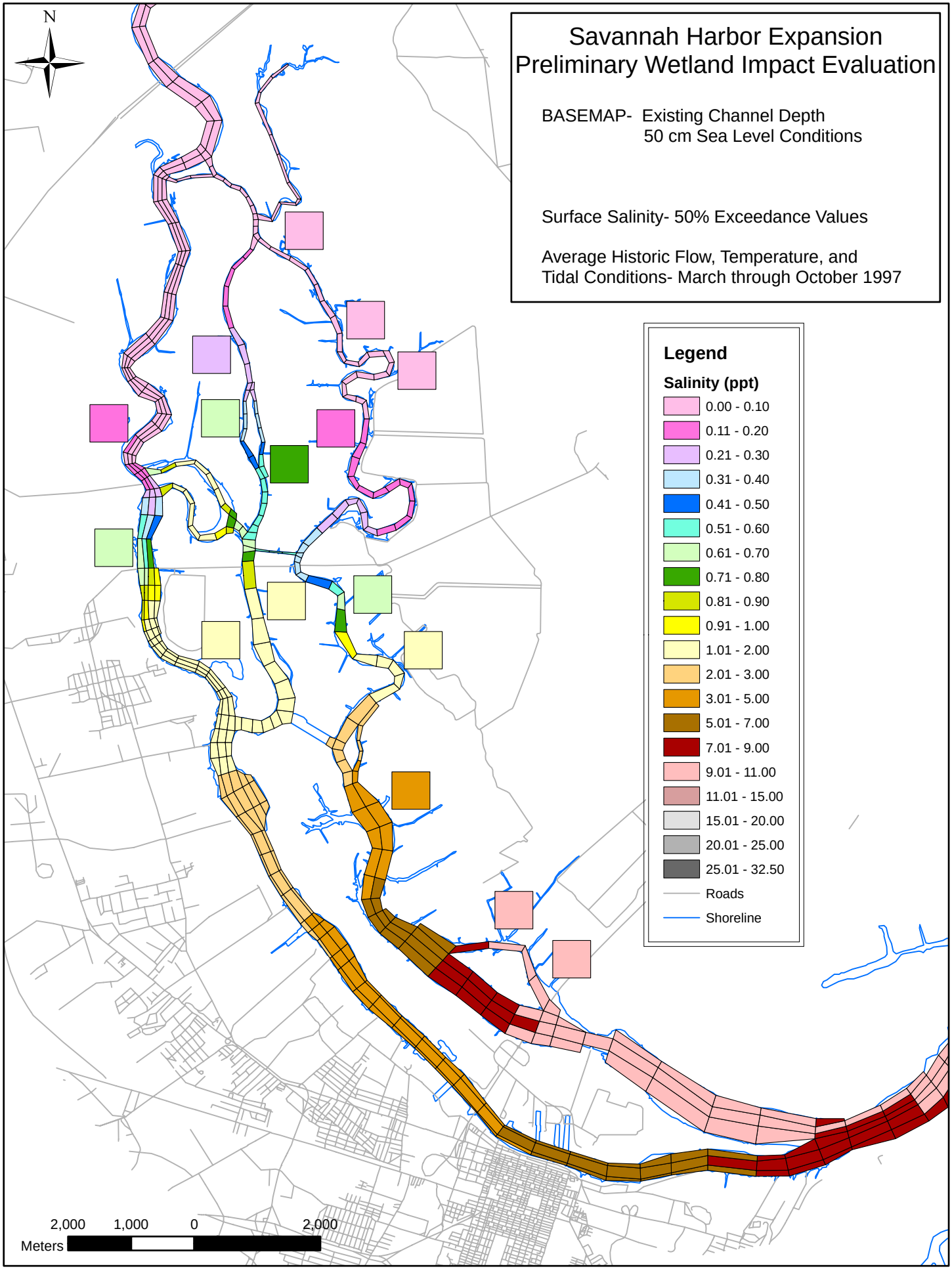
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth Comparison between No Sea Level Rise and 25 cm Sea Level Rise Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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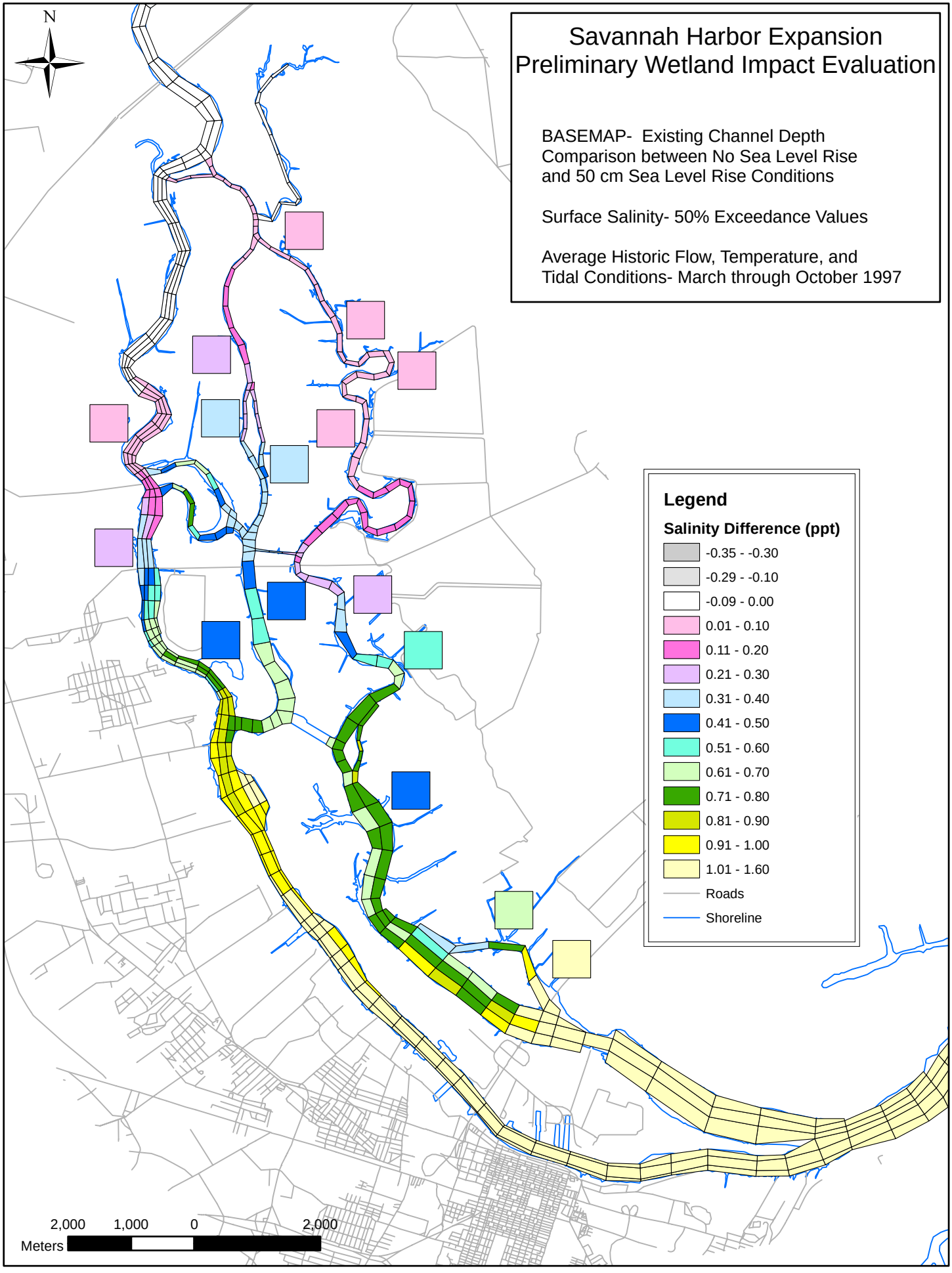
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
50 cm Sea Level Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity (ppt)
0.00 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
11.01 - 15.00
15.01 - 20.00
20.01 - 25.00
25.01 - 32.50
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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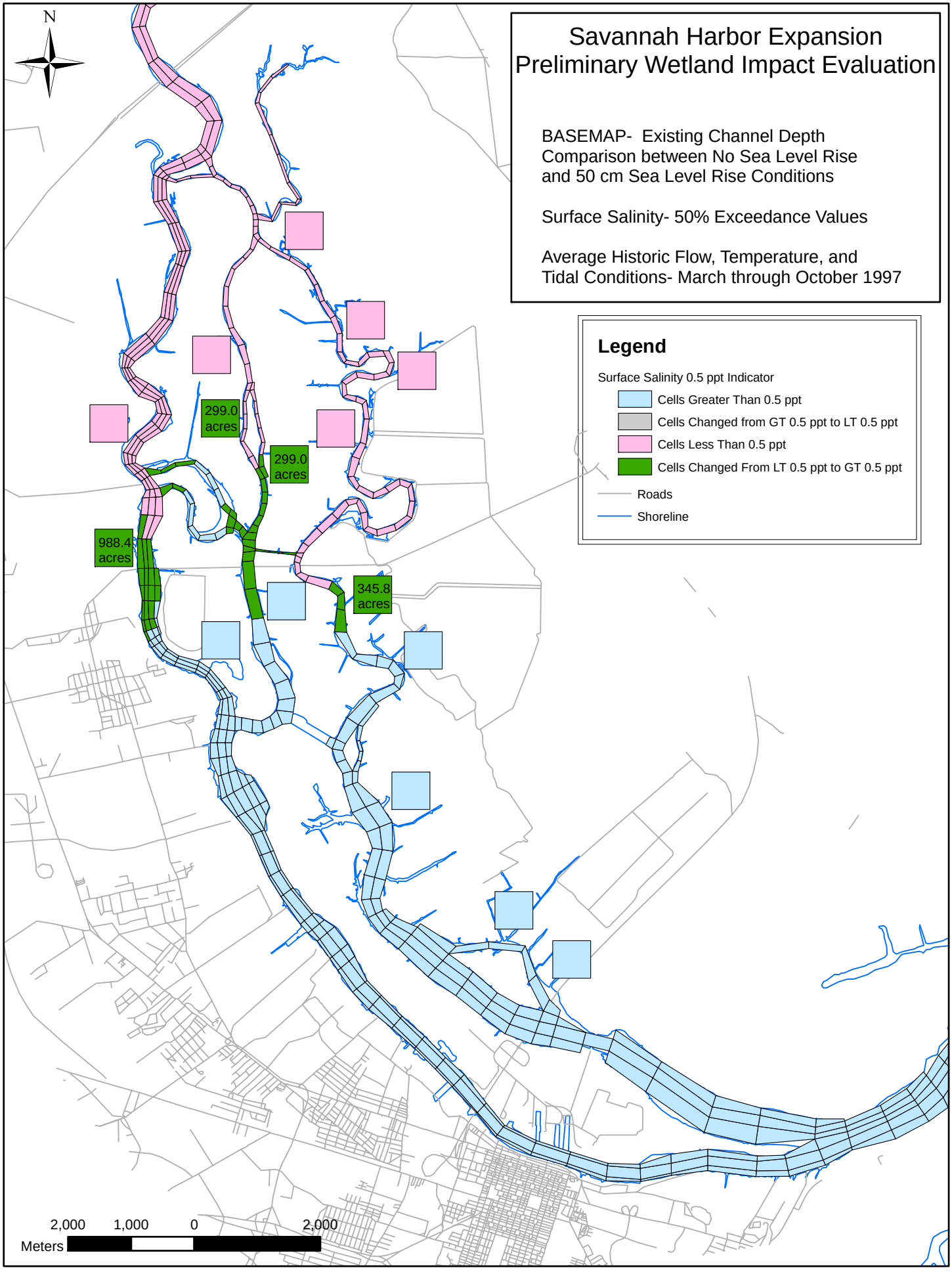
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Comparison between No Sea Level Rise
and 50 cm Sea Level Rise Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.35 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.60
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007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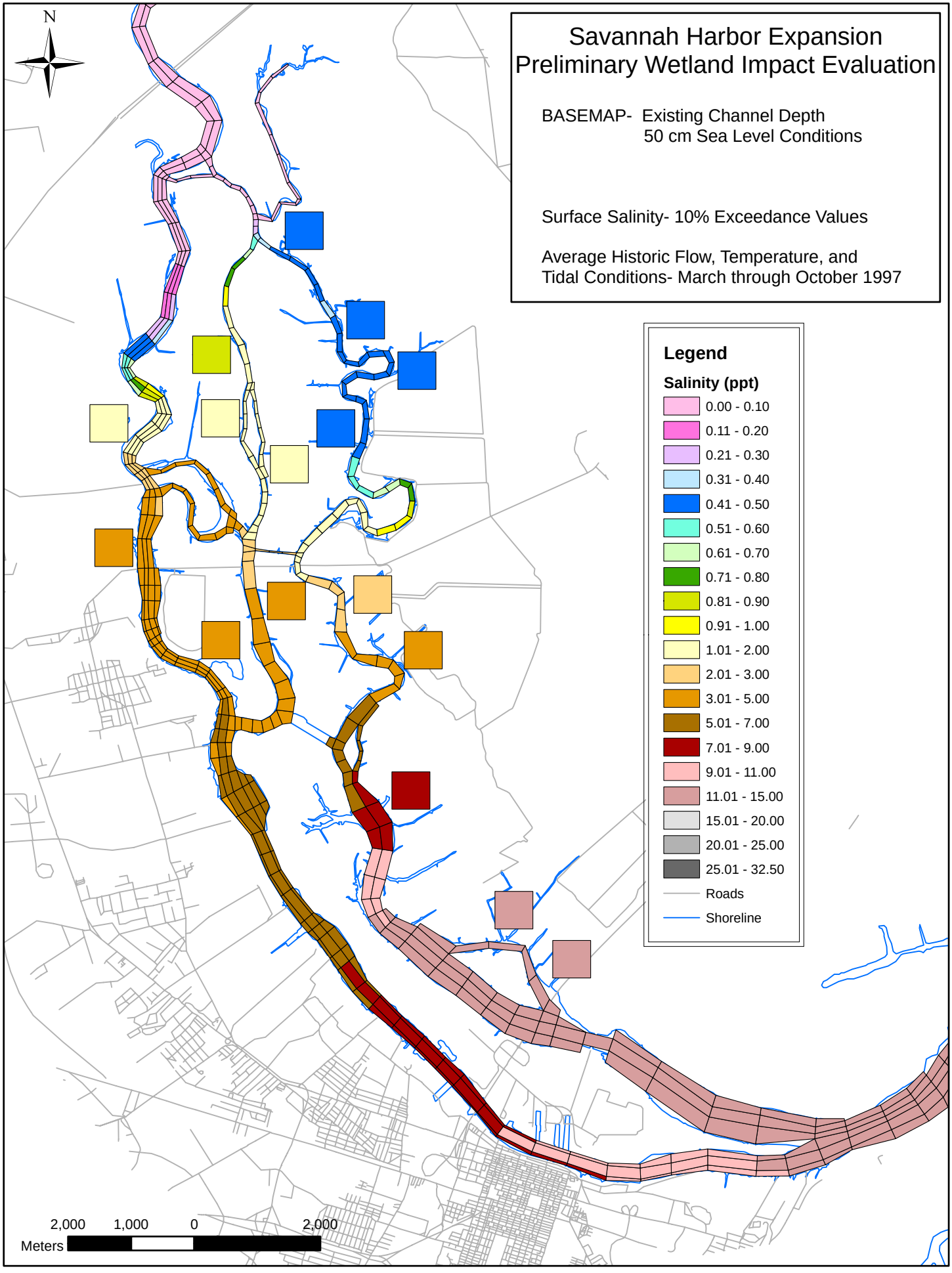
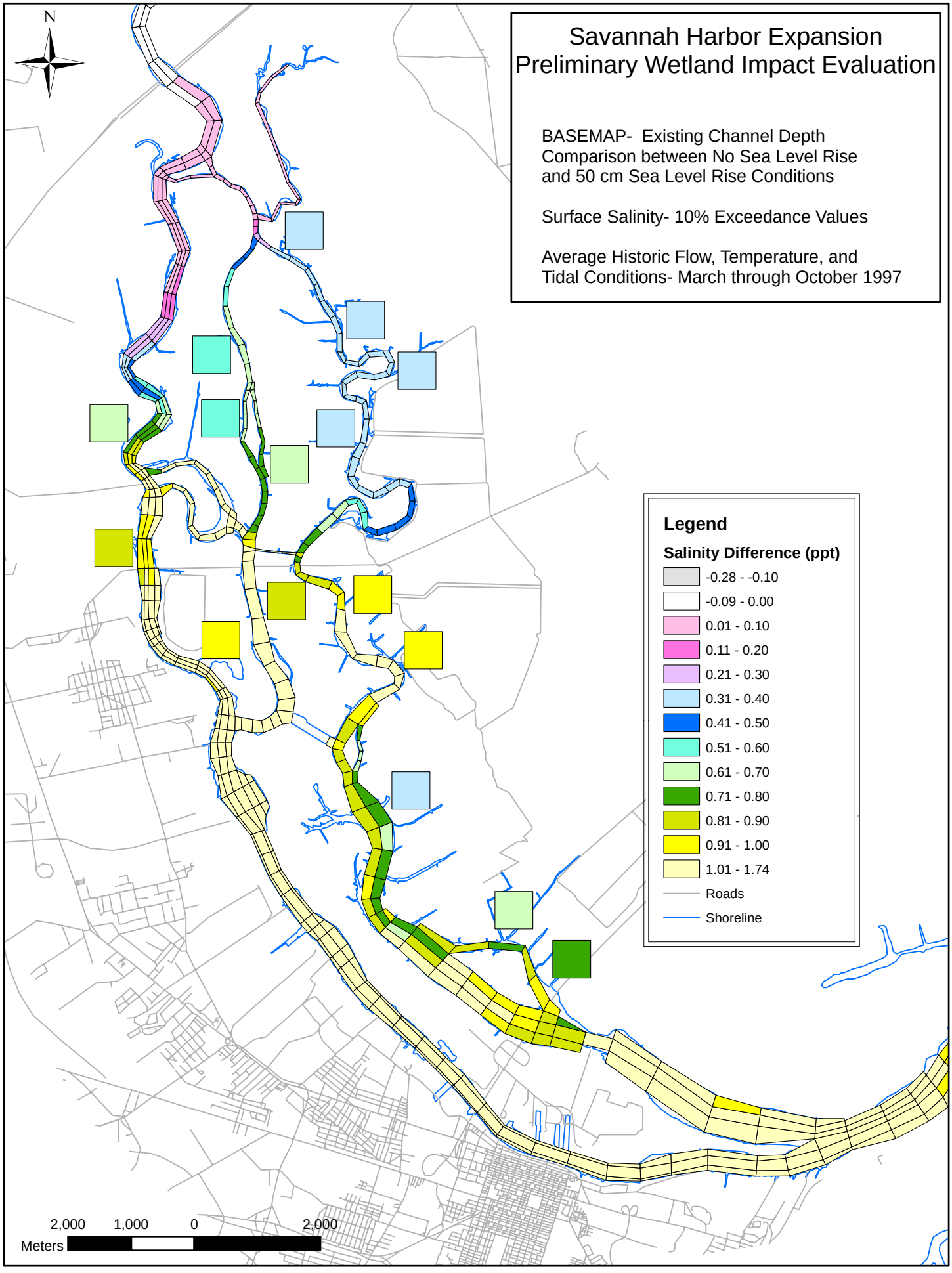
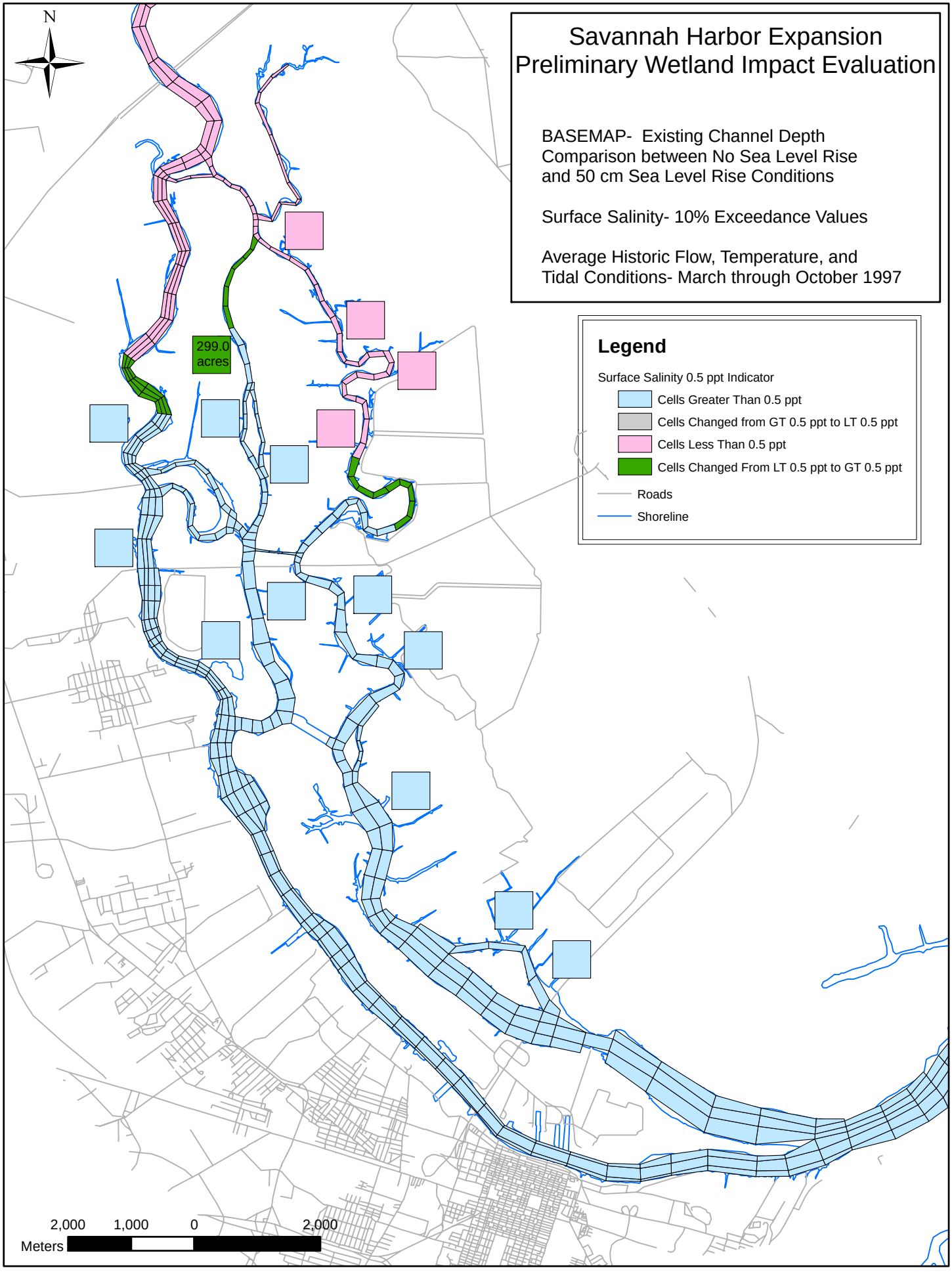
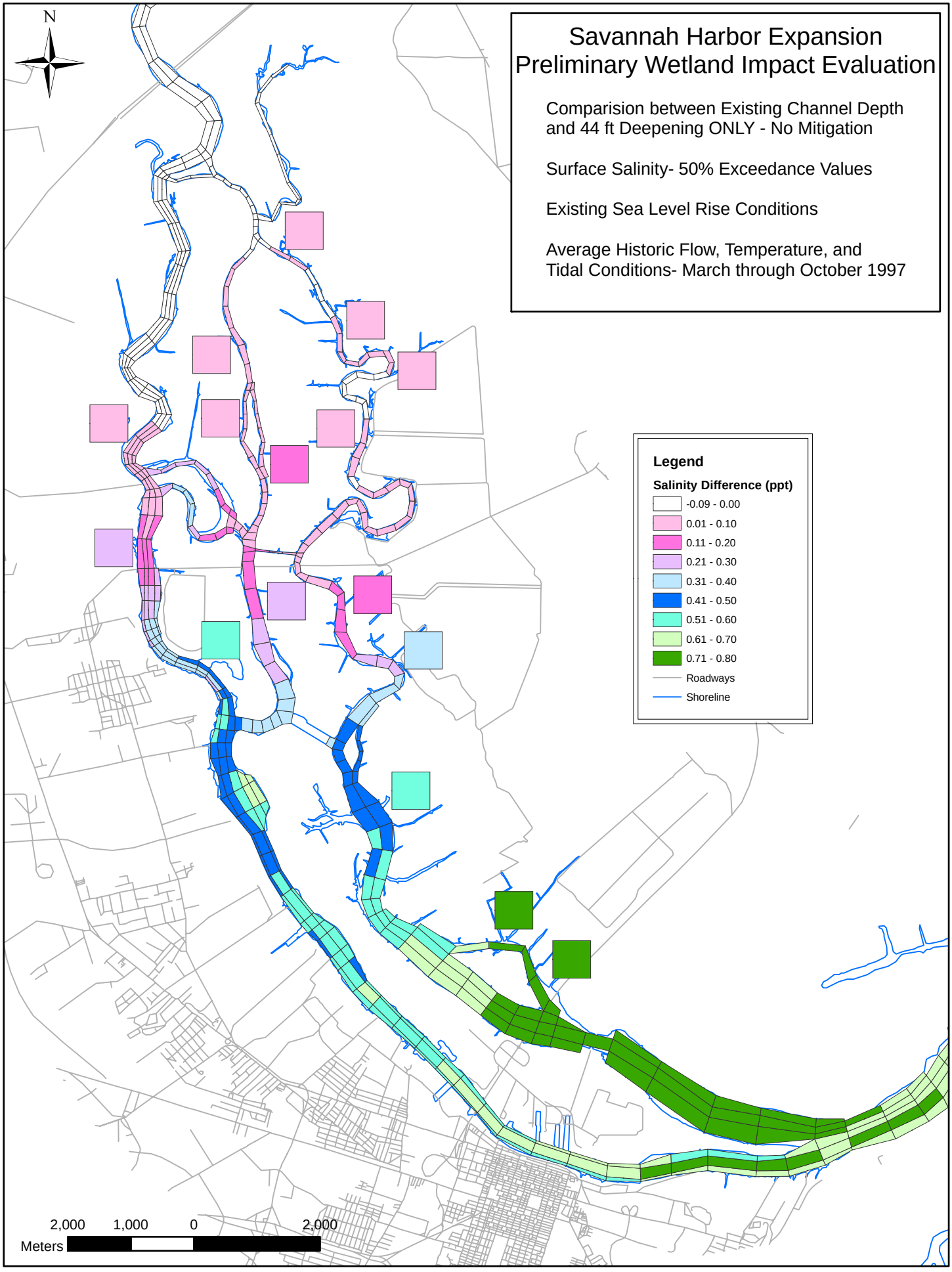
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth Comparison between No Sea Level Rise and 50 cm Sea Level Rise Conditions
Surface Salinity- 50% Exceedance Values
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
February 2007

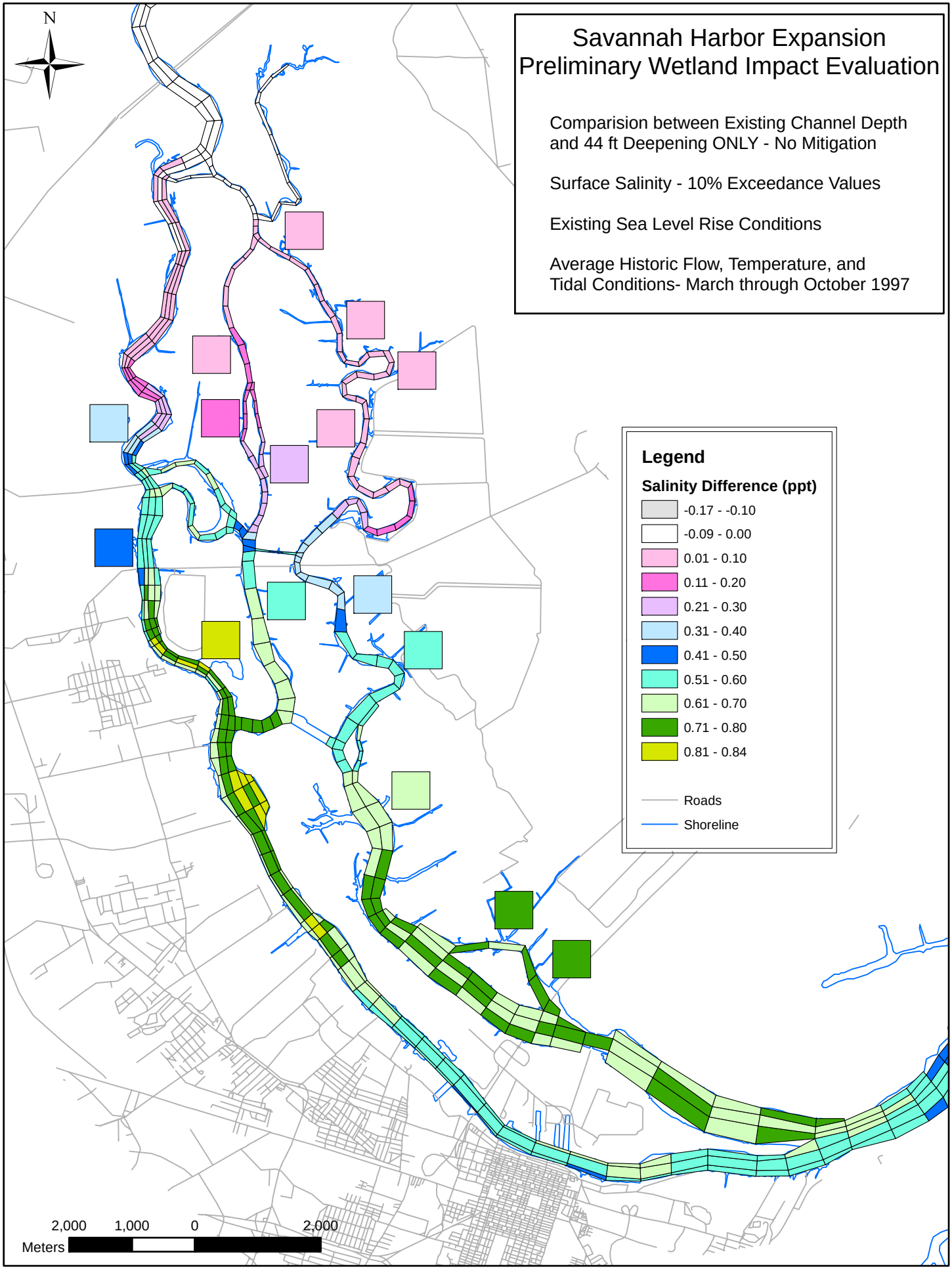

N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
50 cm Sea Level Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity (ppt)
0.00 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00
7.01 - 9.00
9.01 - 11.00
11.01 - 15.00
15.01 - 20.00
20.01 - 25.00
25.01 - 32.50
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth
Comparison between No Sea Level Rise
and 50 cm Sea Level Rise Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and
Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.28 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.74
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
BASEMAP- Existing Channel Depth Comparison between No Sea Level Rise and 50 cm Sea Level Rise Conditions
Surface Salinity- 10% Exceedance Values
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
February 2007

Basic Evaluation


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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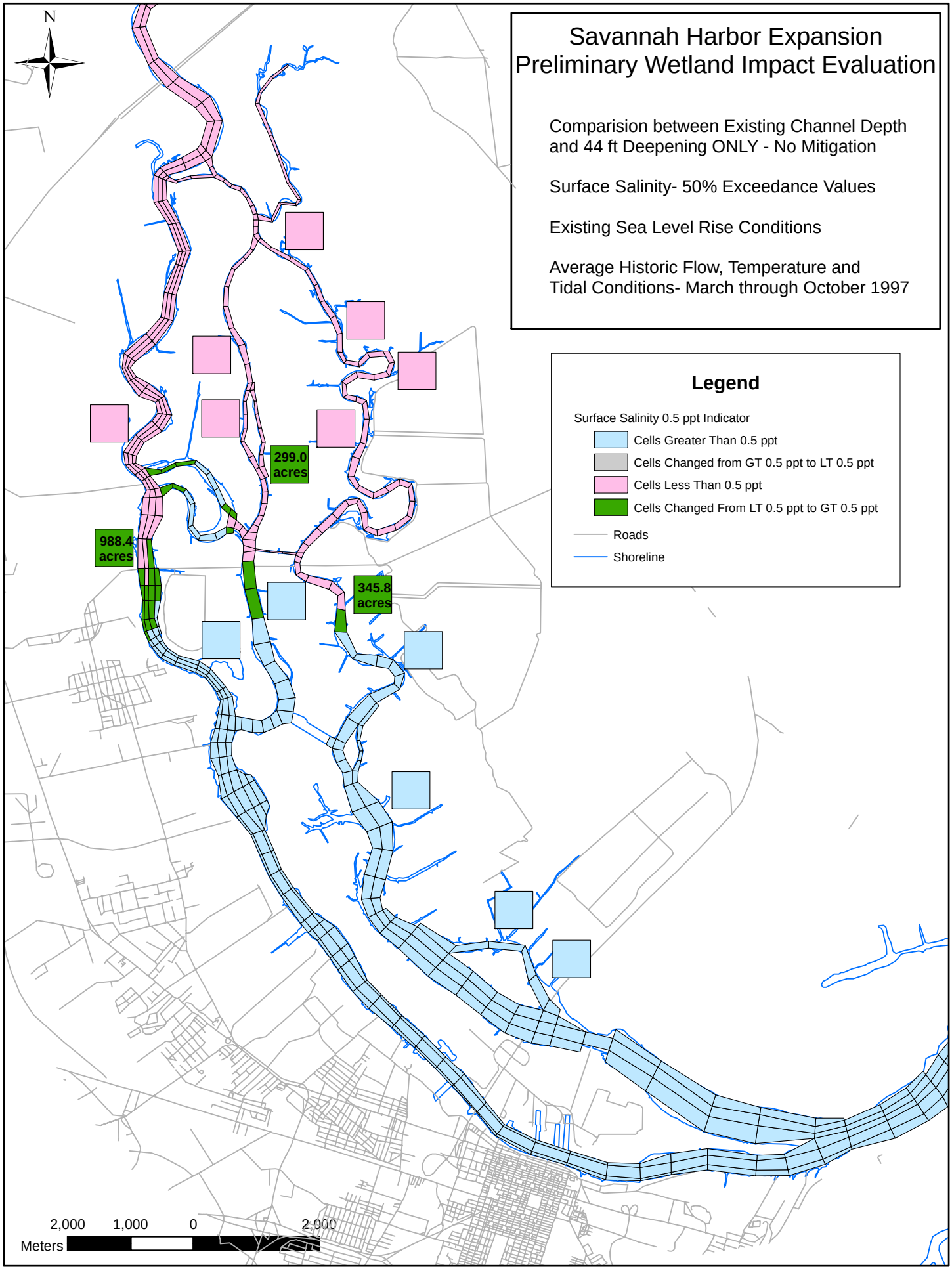
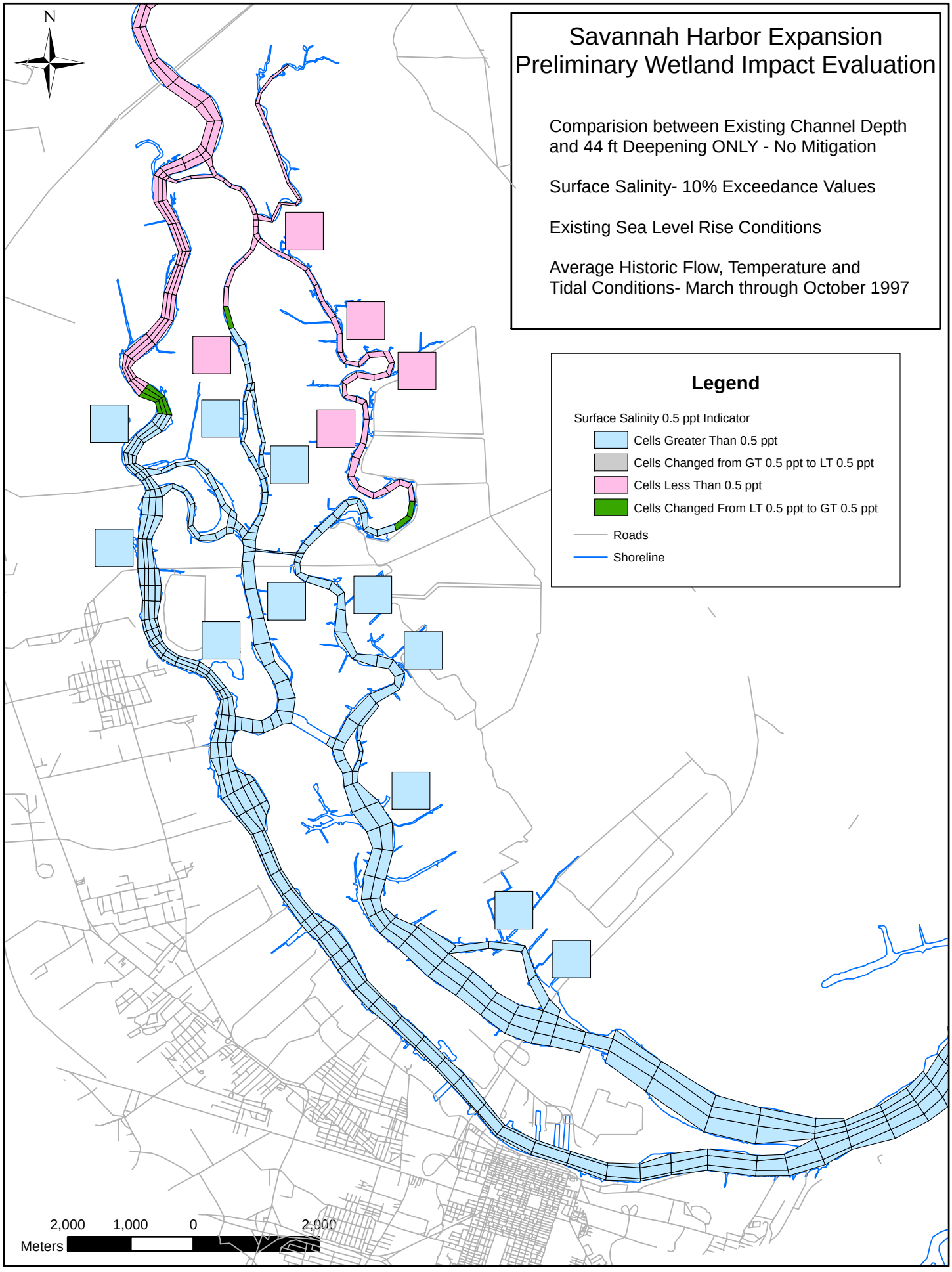
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity - 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.17 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.84
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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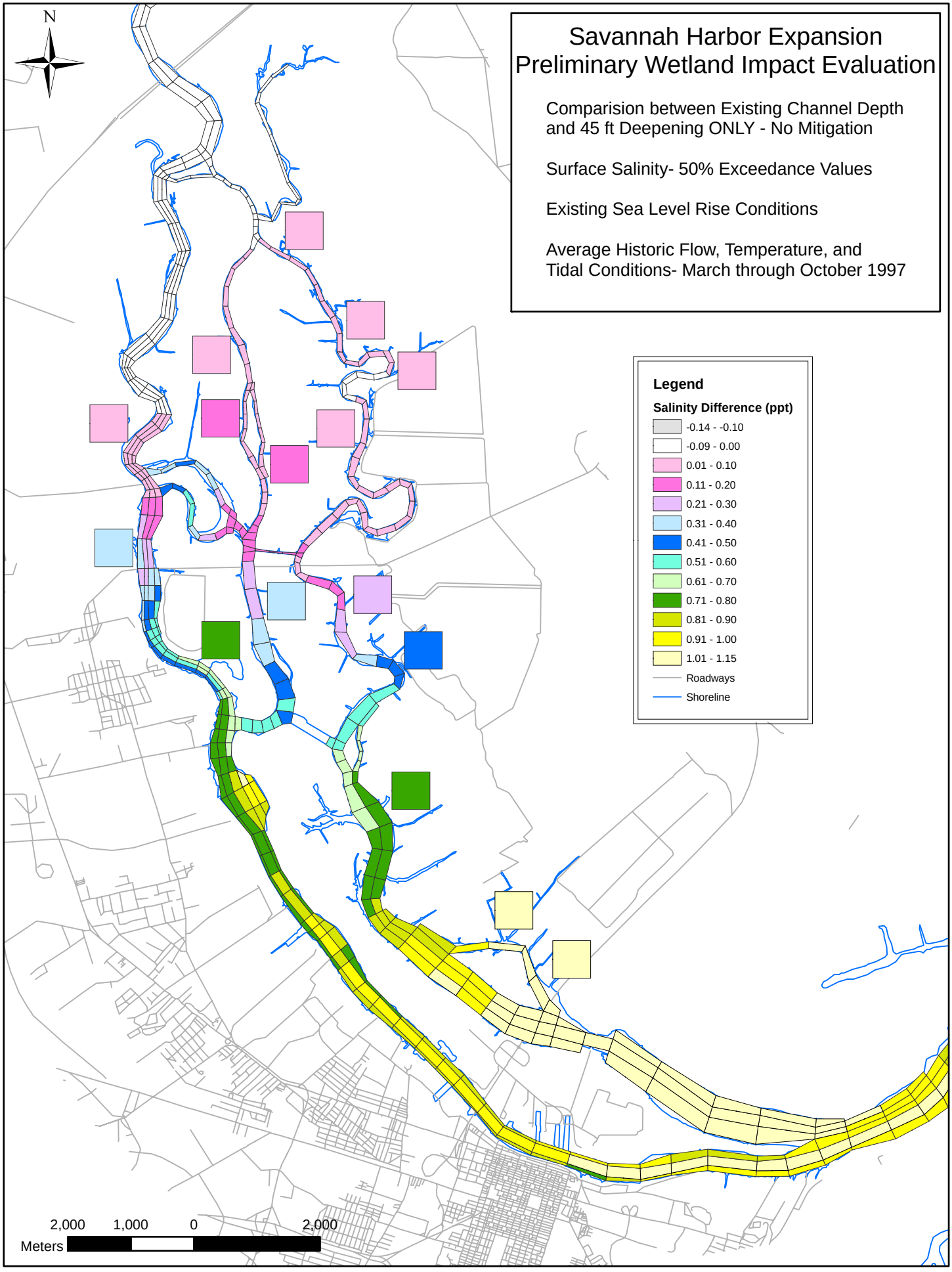
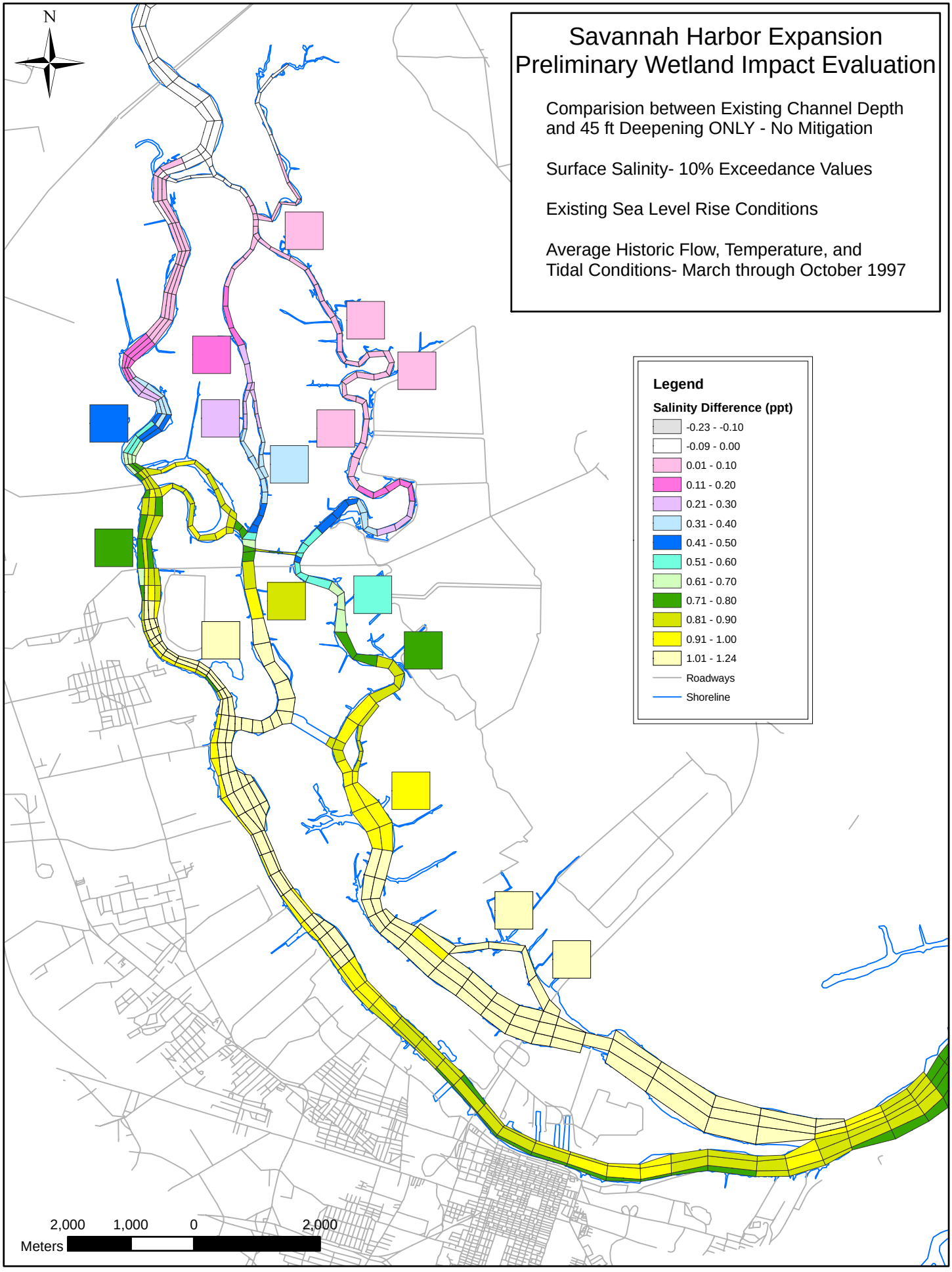
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.14 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.15
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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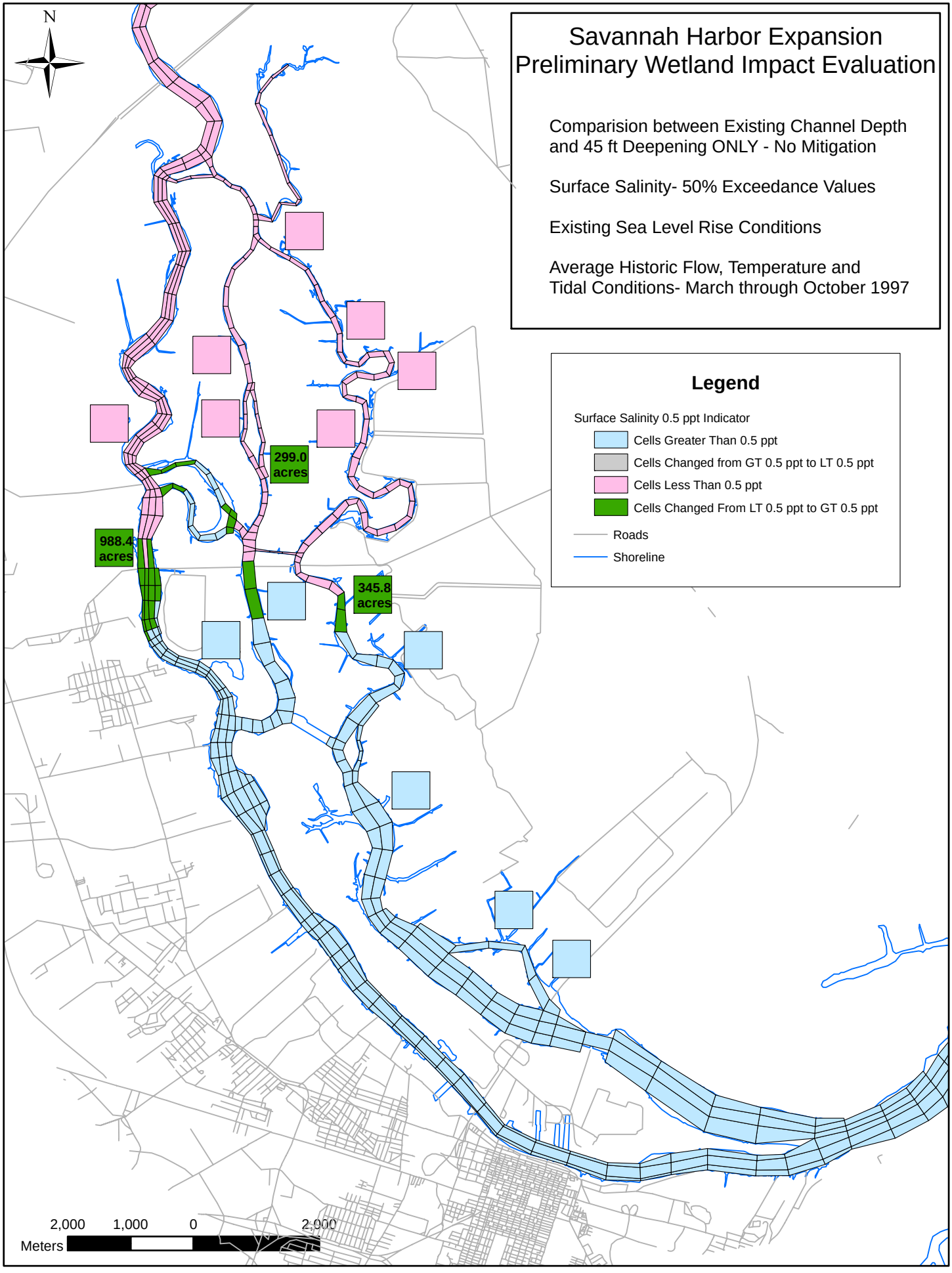
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.23 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.24
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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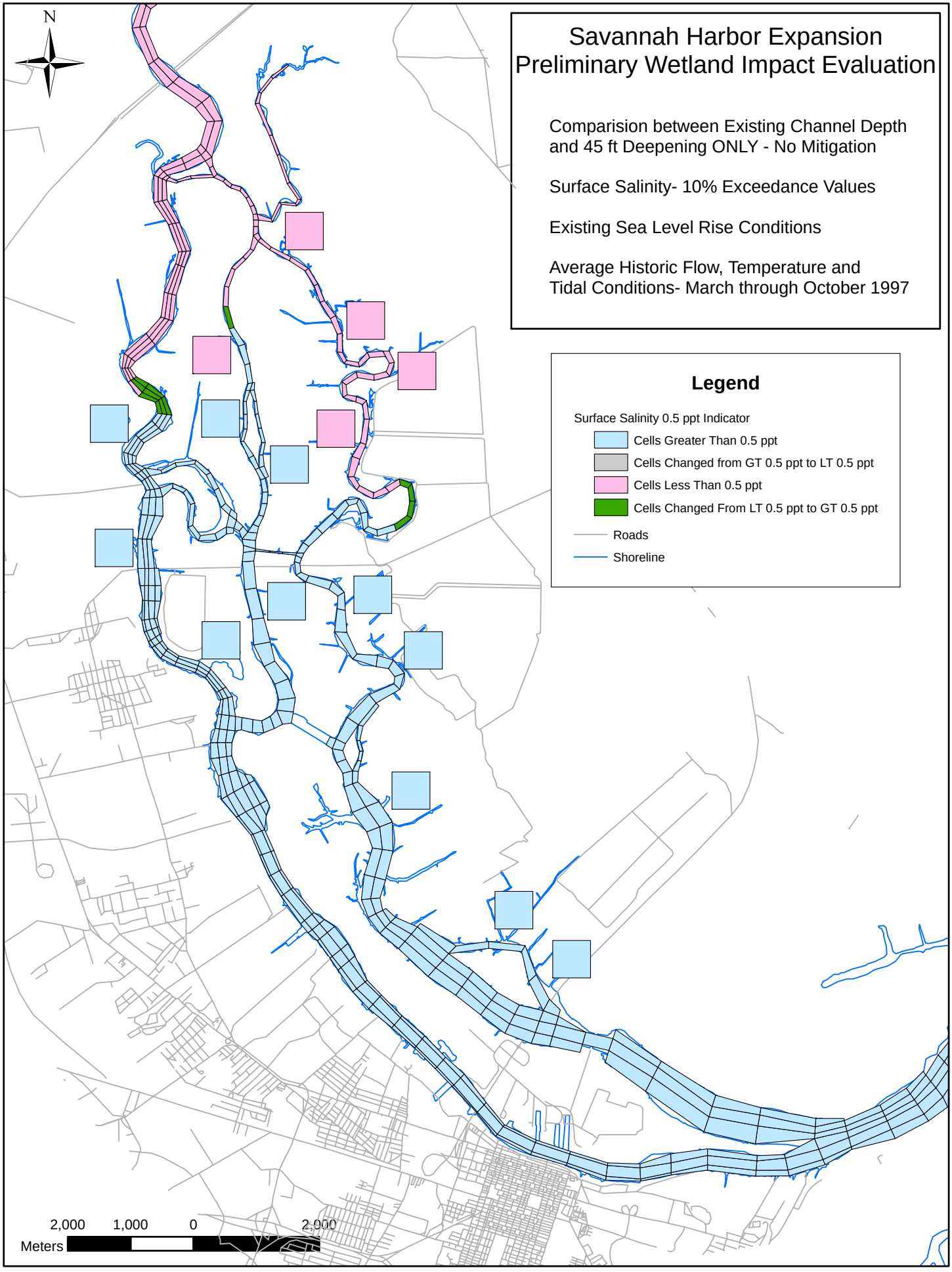
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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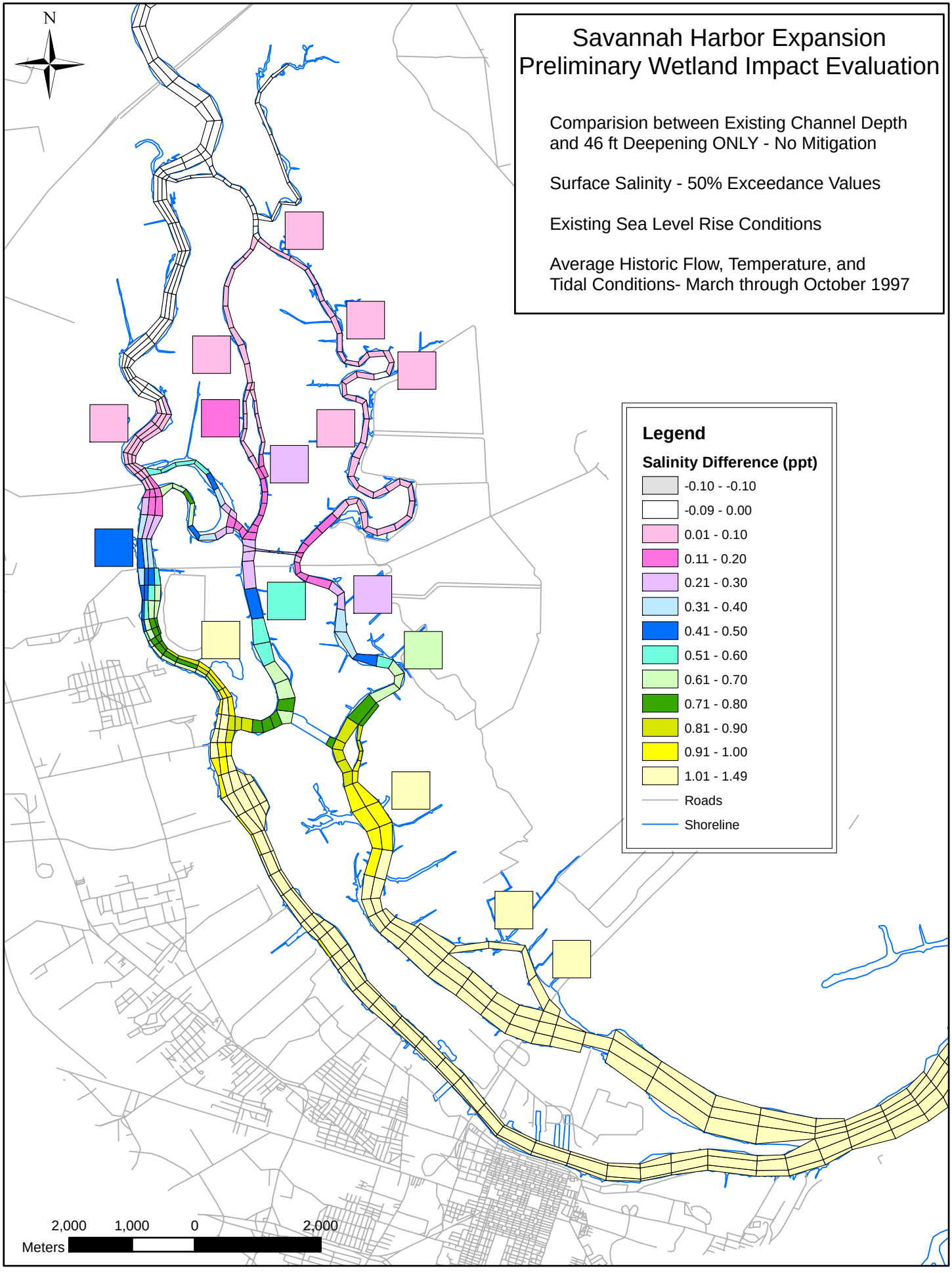
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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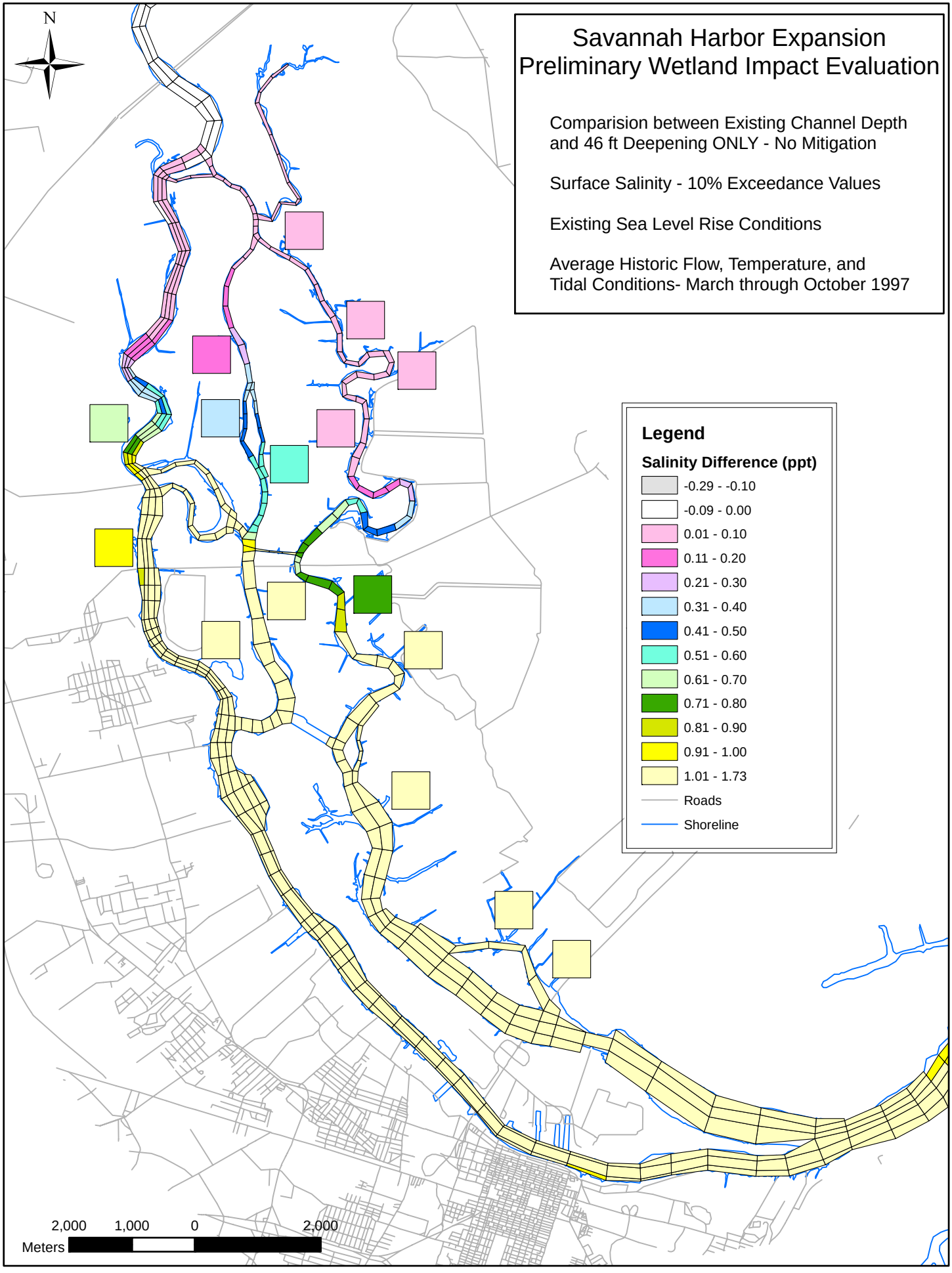
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity - 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.10 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.49
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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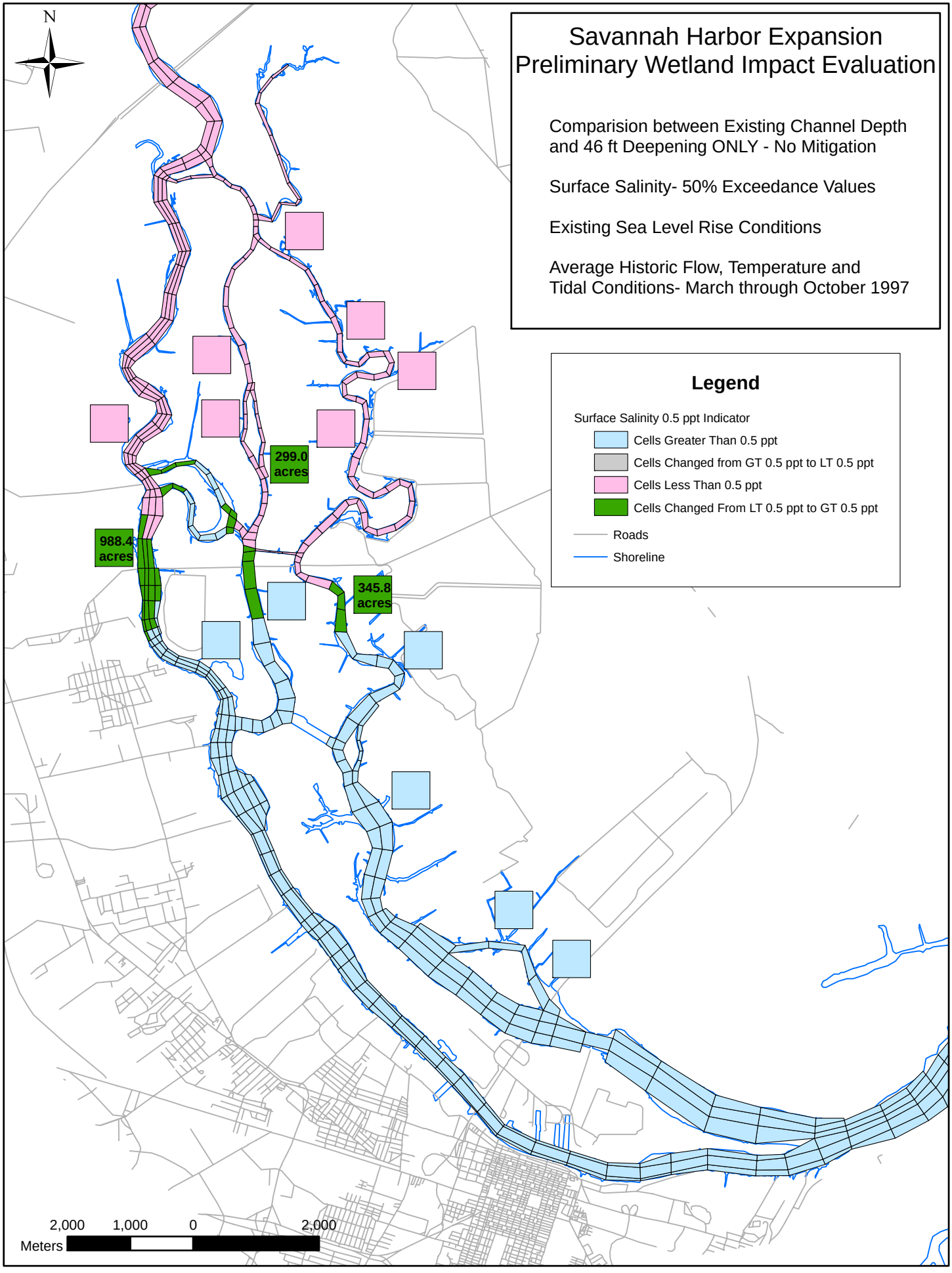
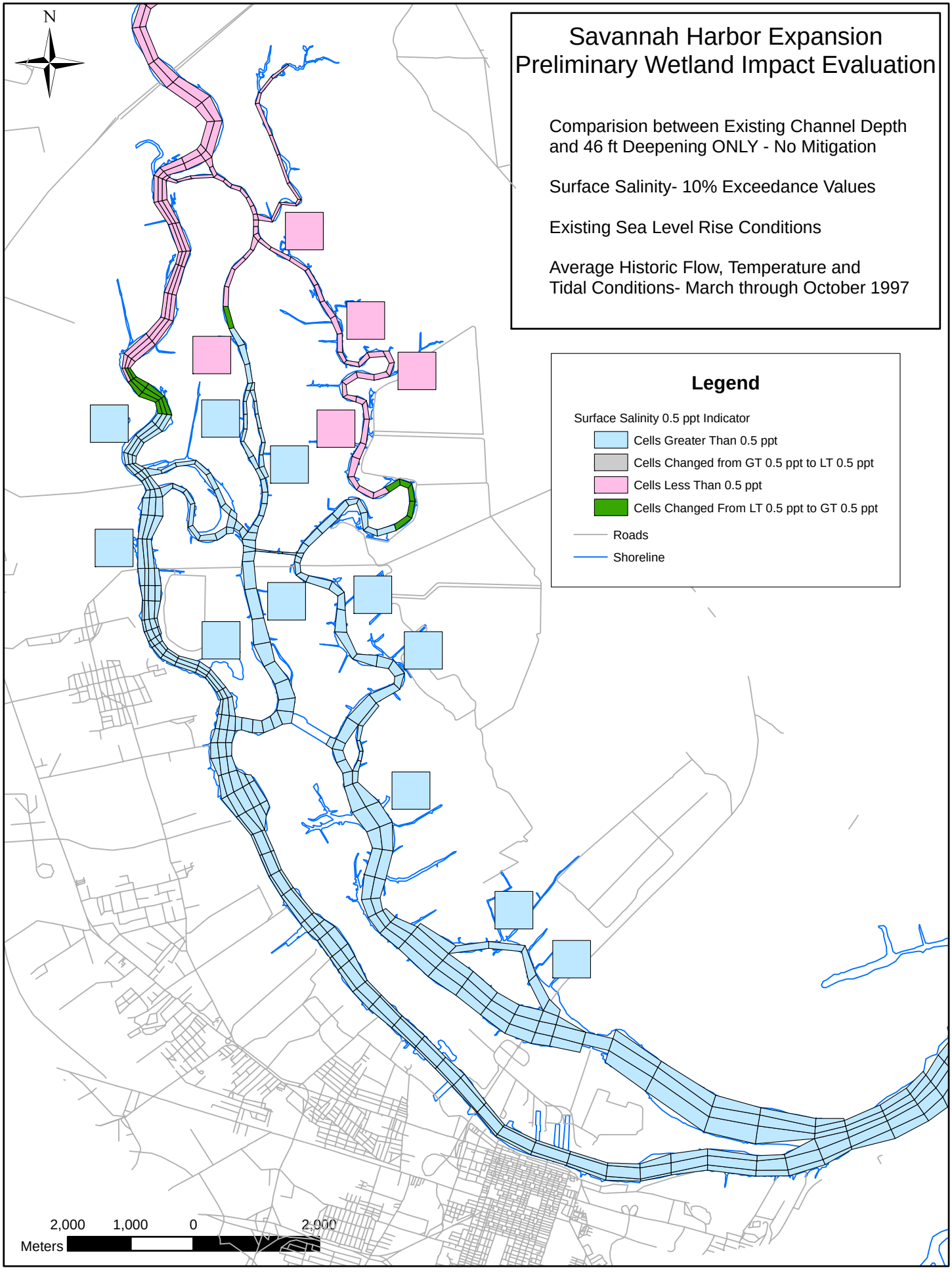
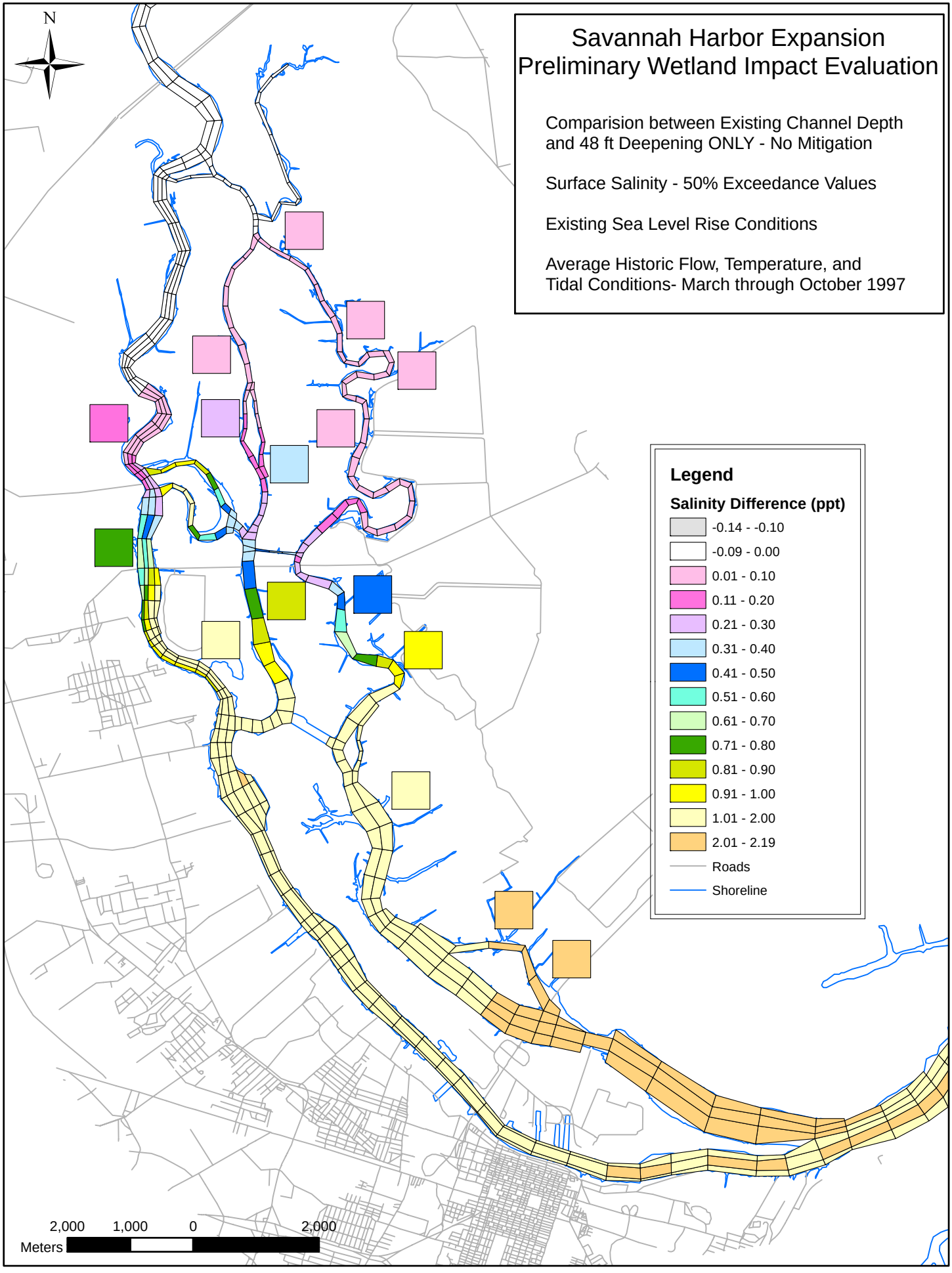
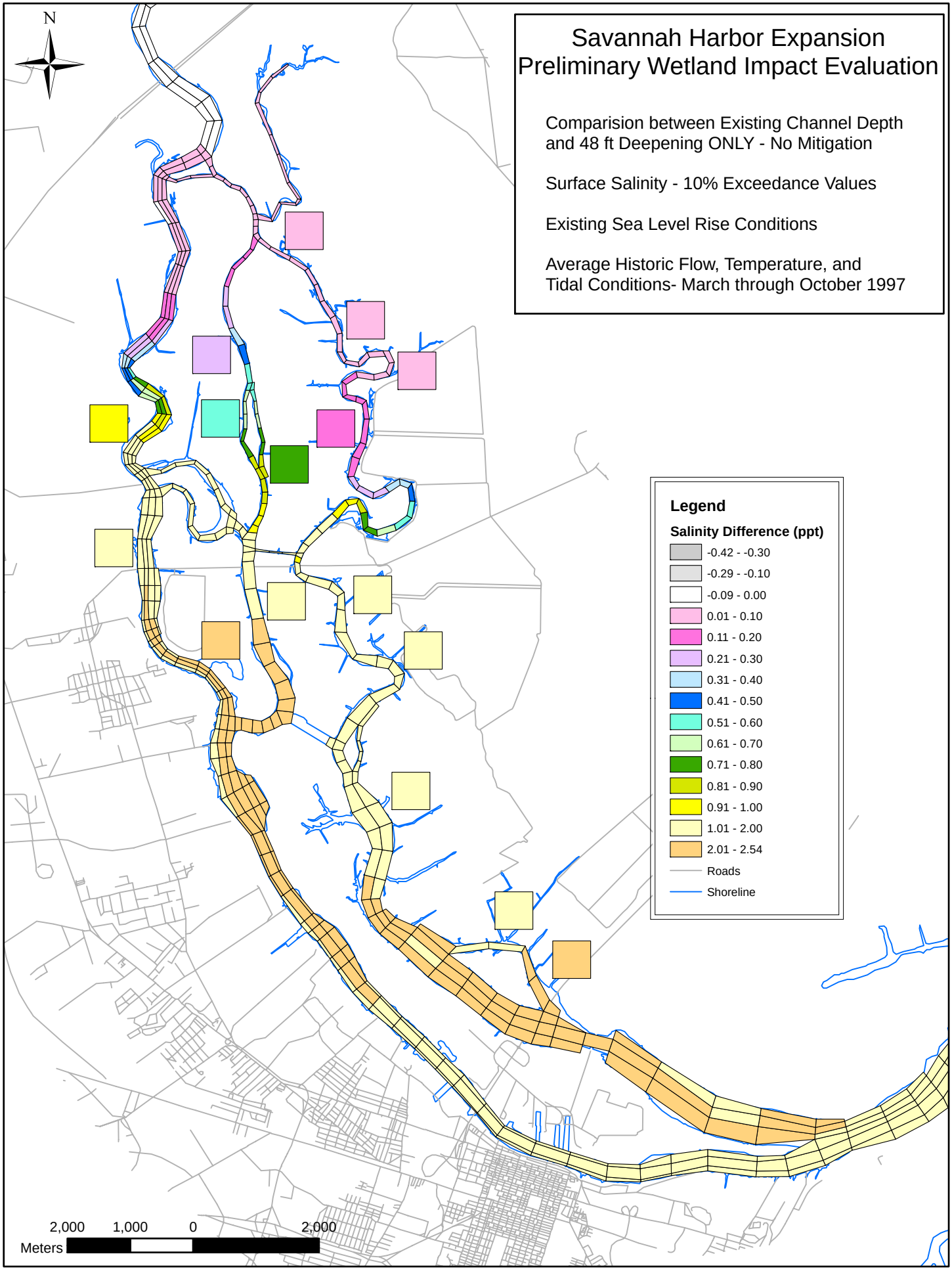
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity - 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.73
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007

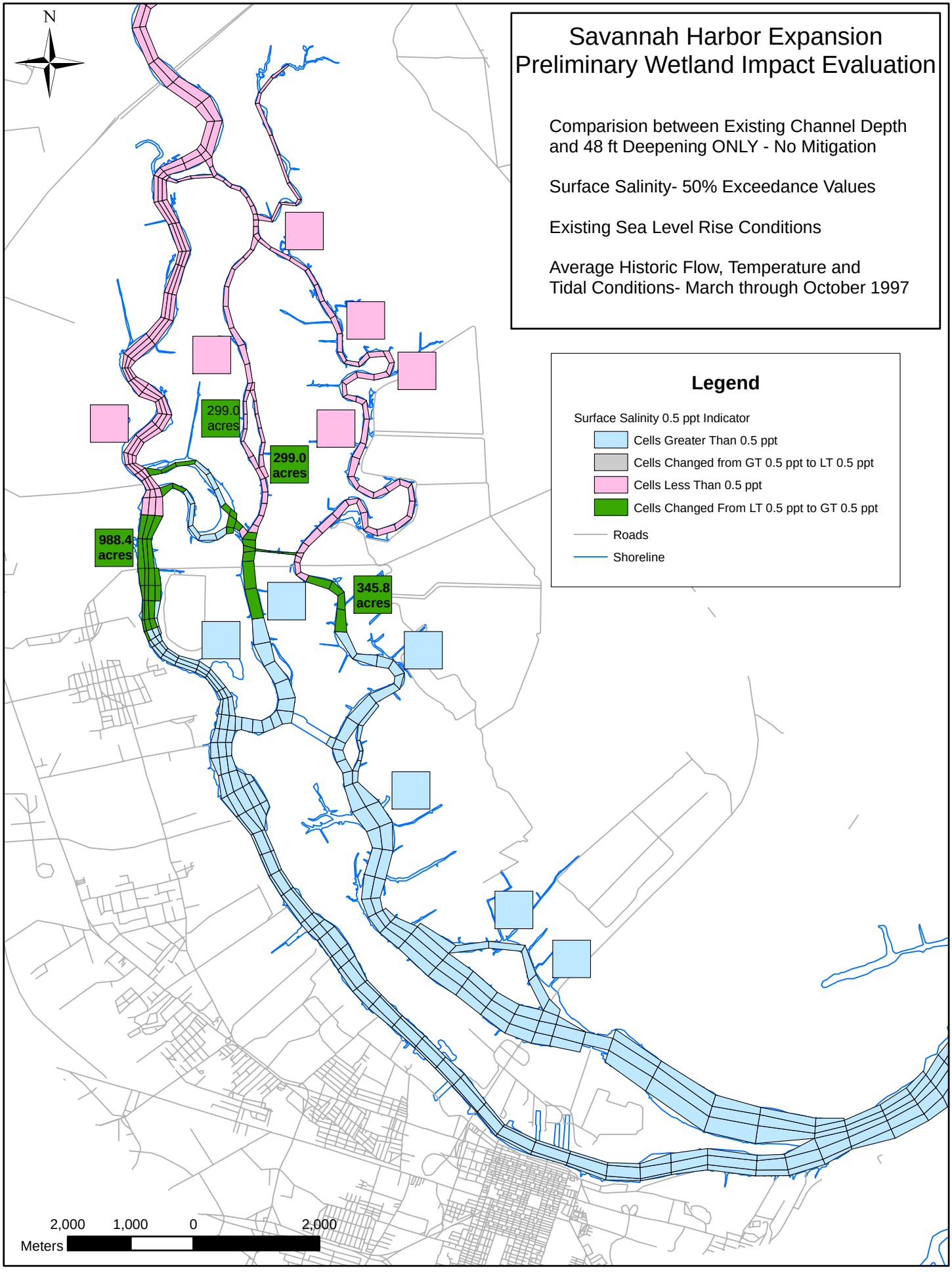

N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007

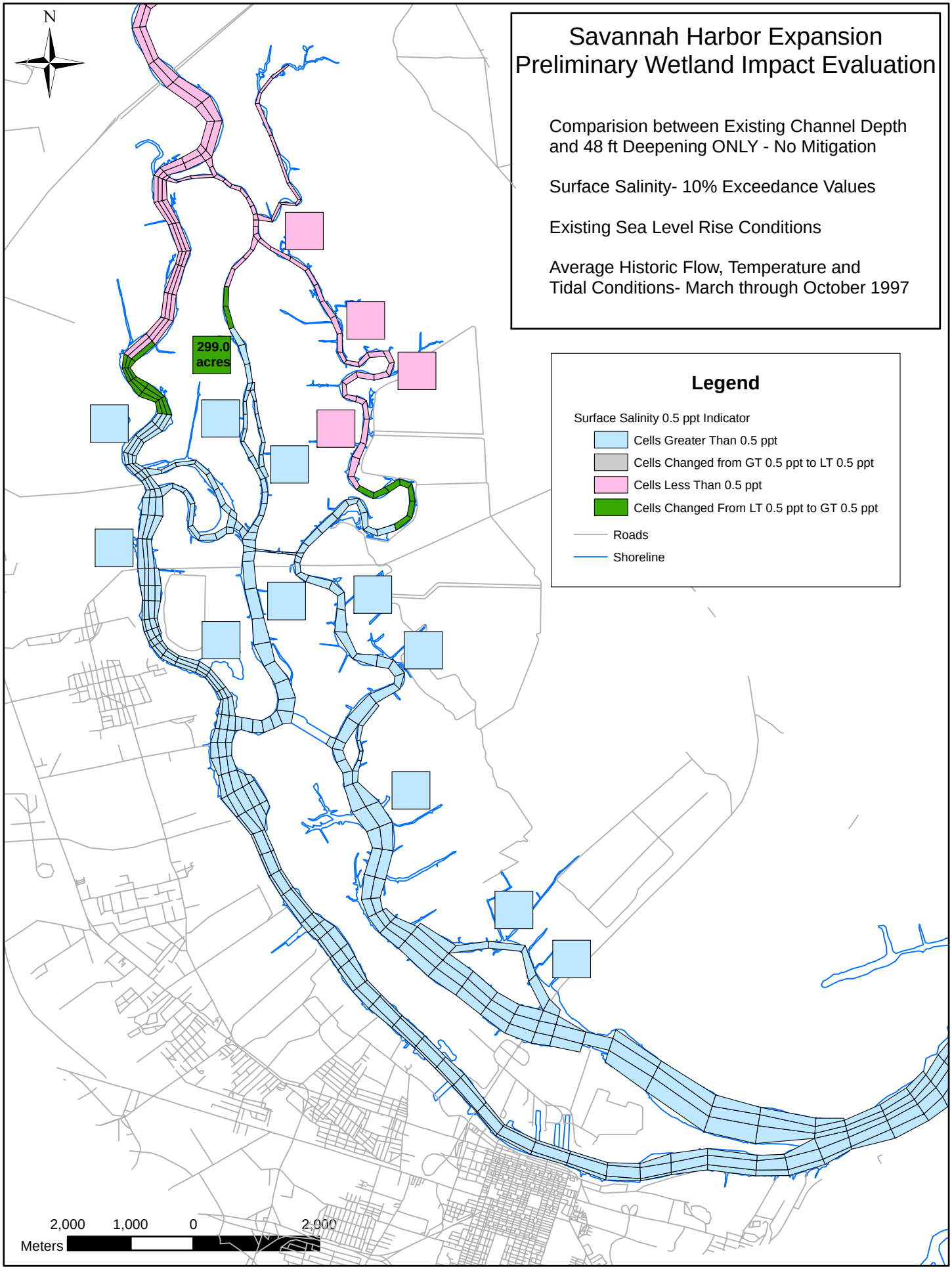


January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity - 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.14 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.19
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity - 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.42 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.54
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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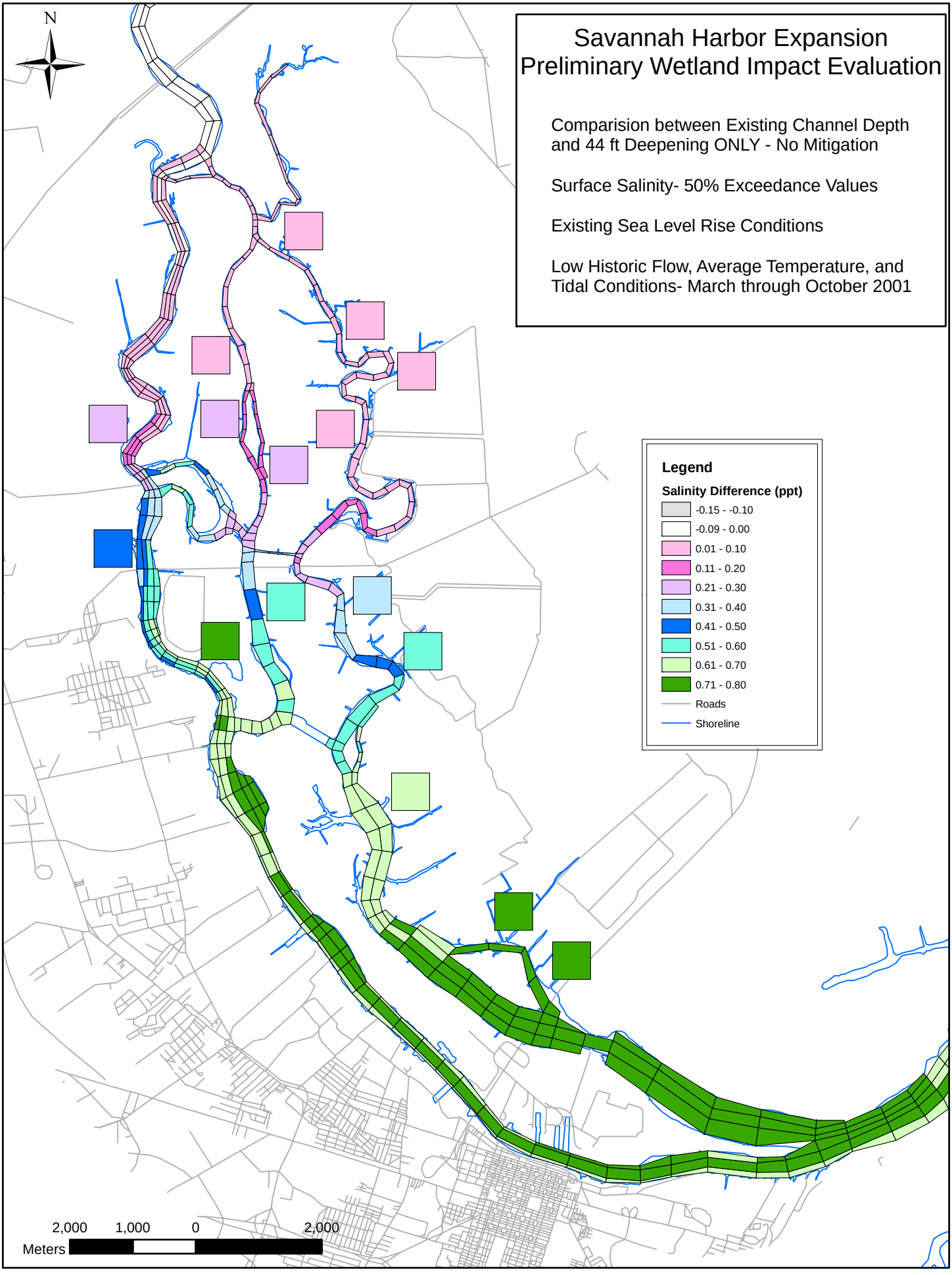
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007

Sensitivity Analysis #1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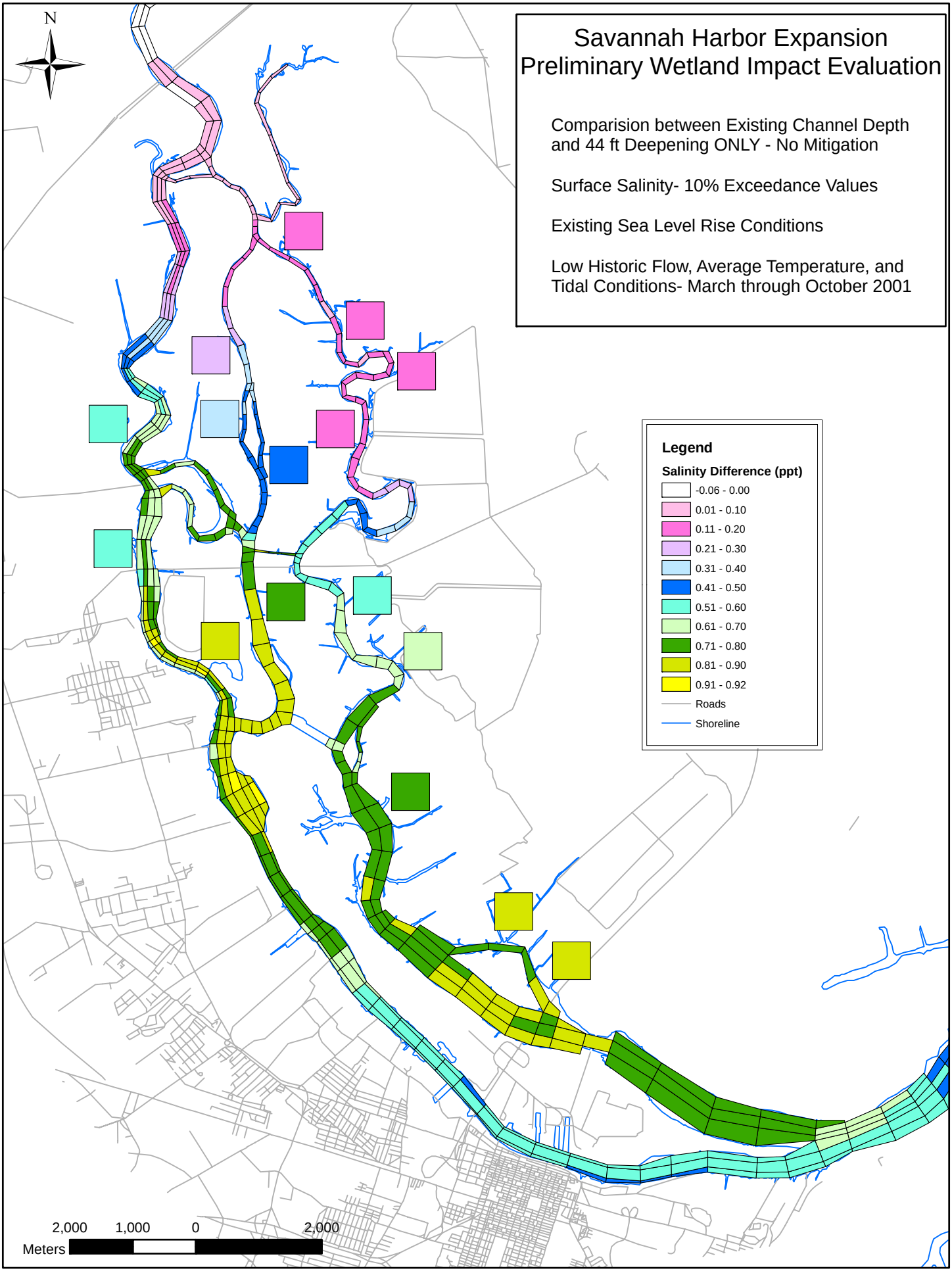
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.15 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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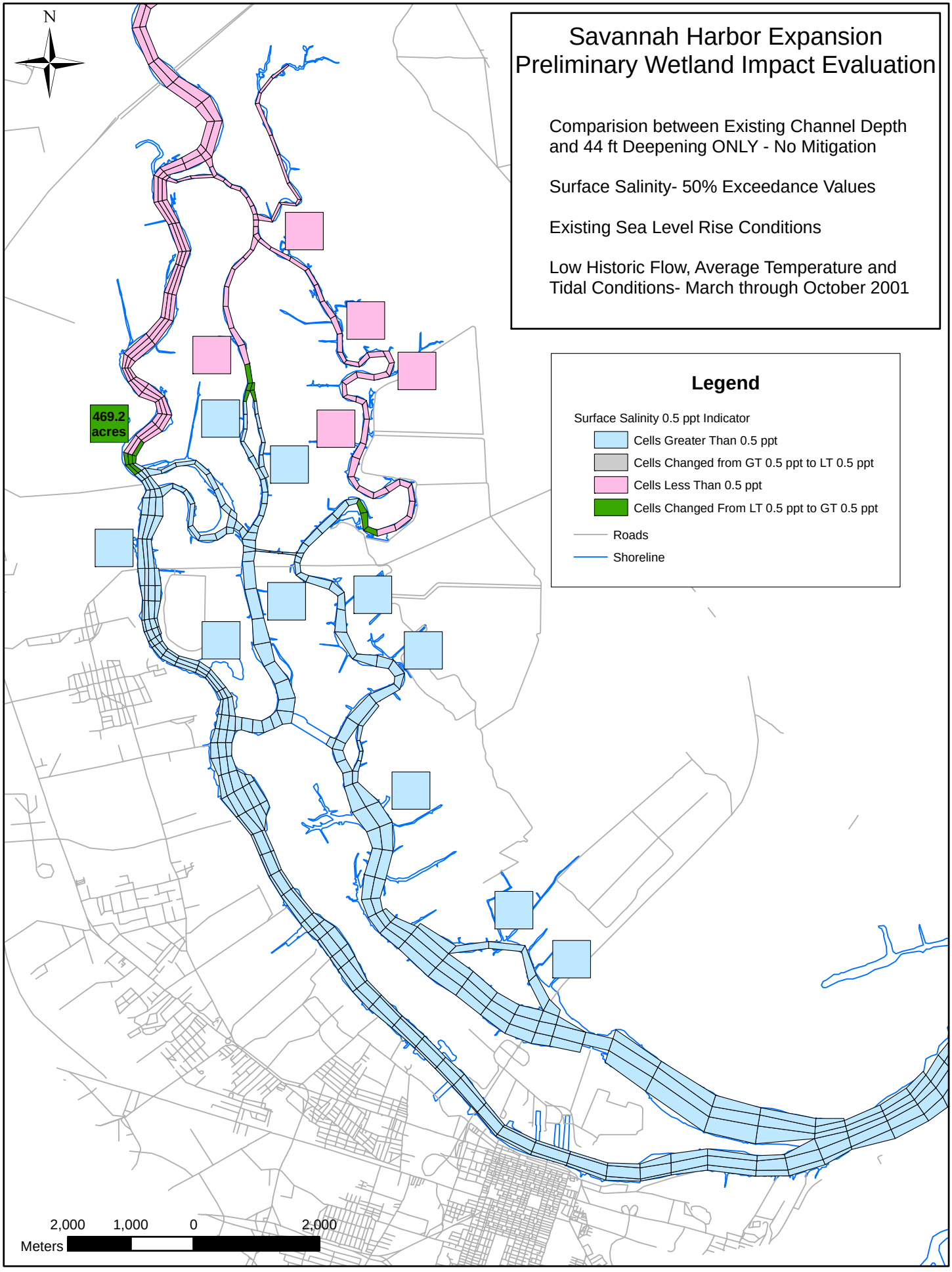
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.06 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 0.92
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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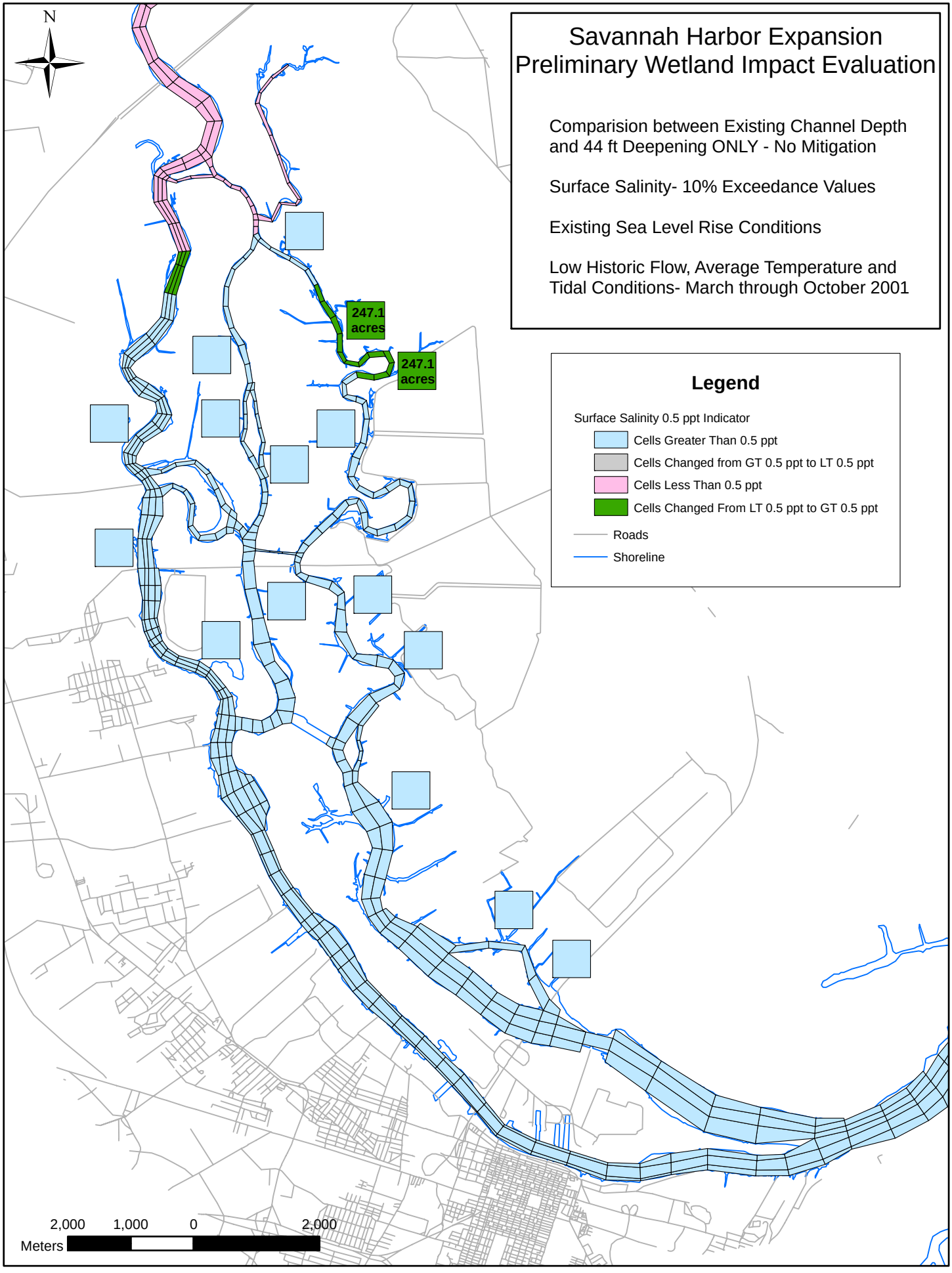
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
469.2 acres
2,000 1,000 0 2,000
Meters
January 2007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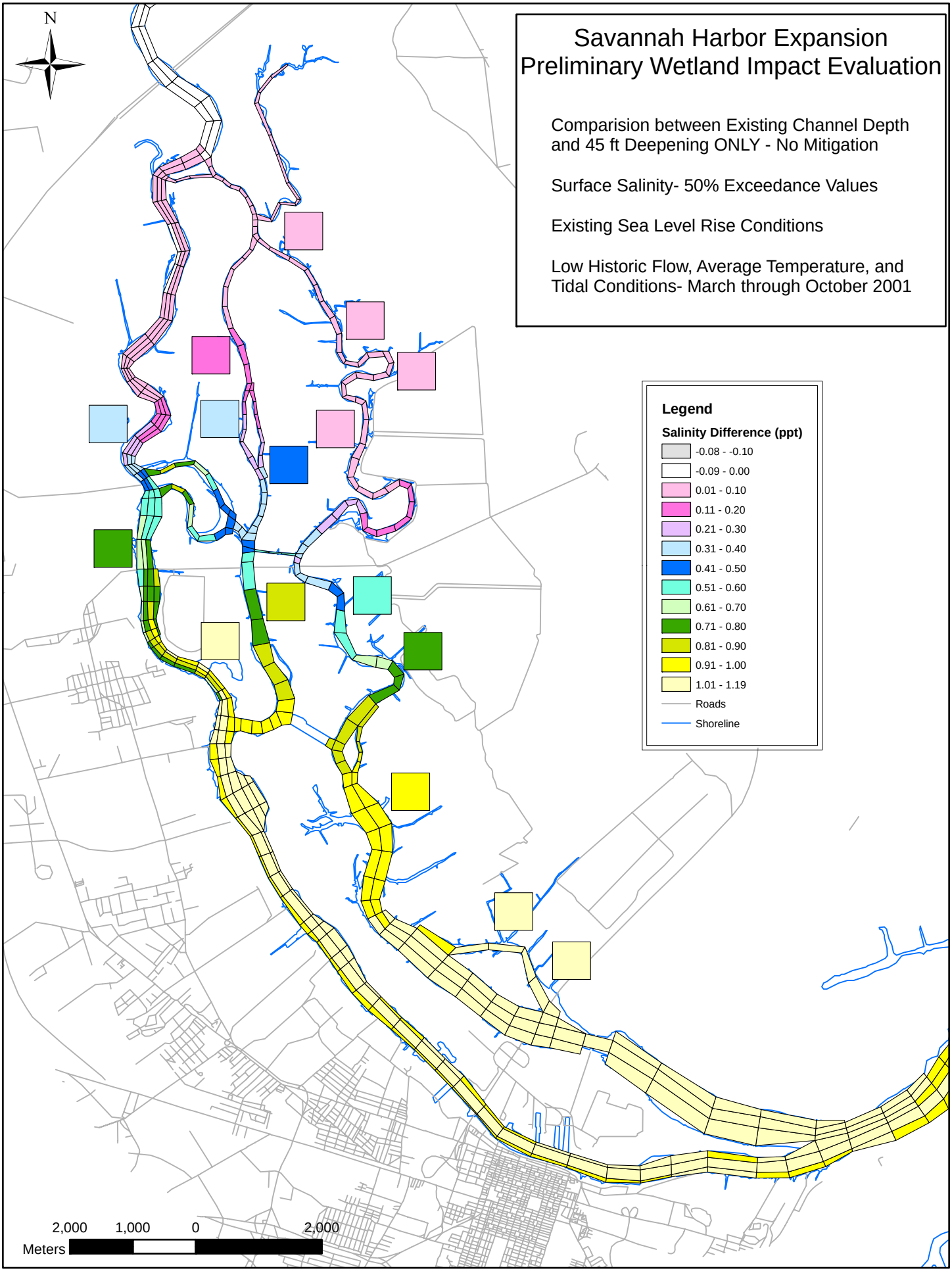
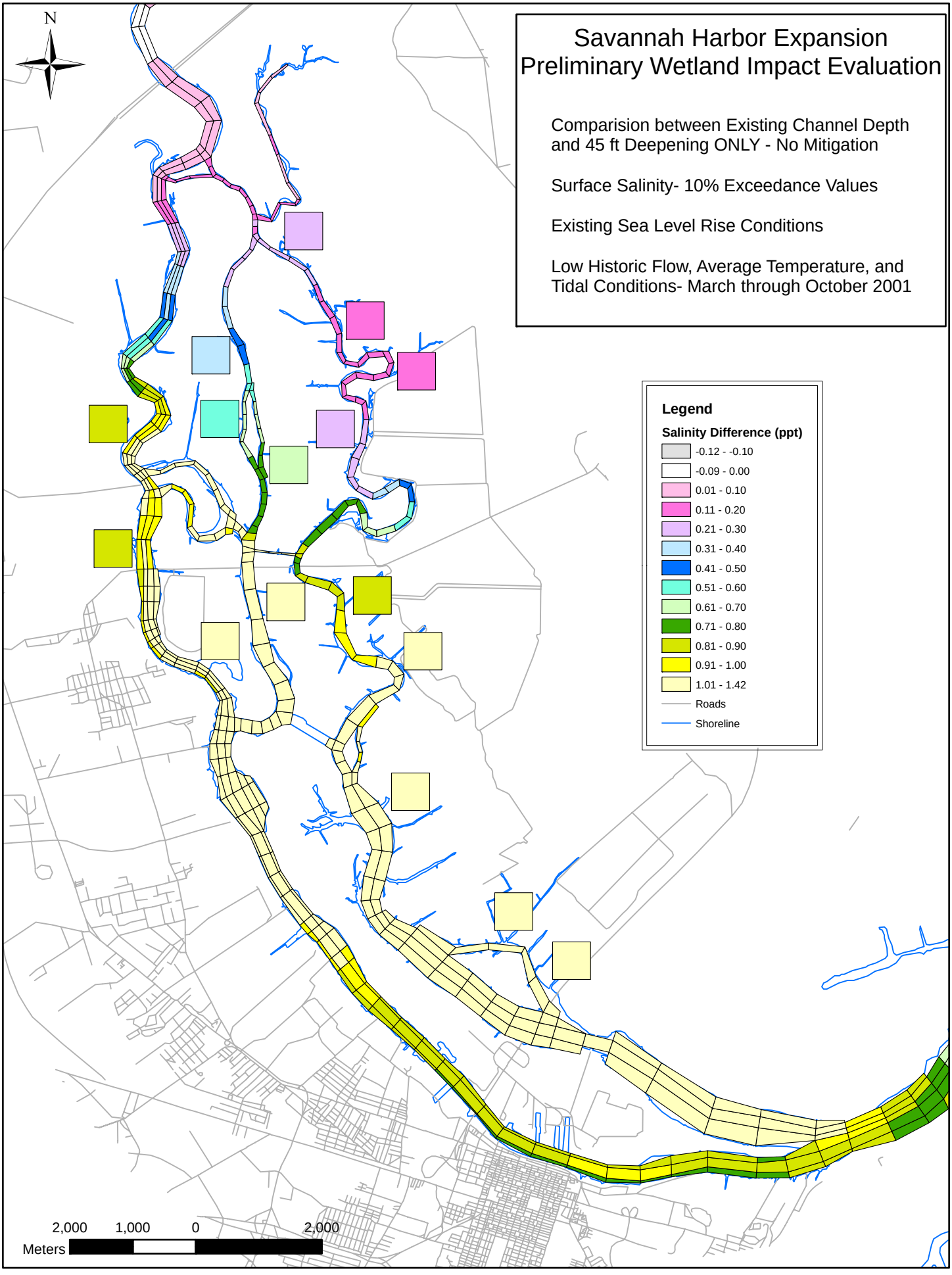
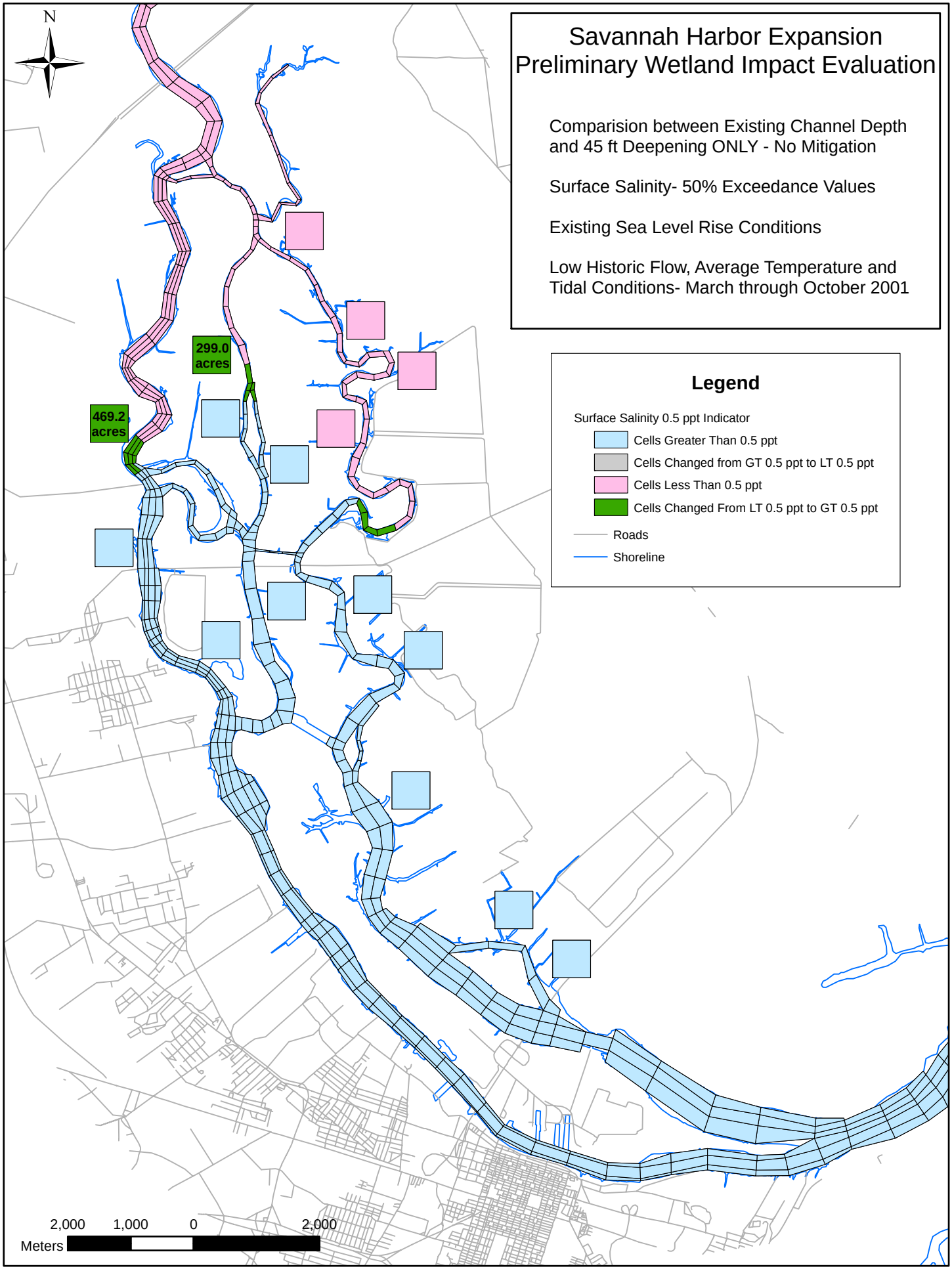
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
247.1 acres
247.1 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.08 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.19
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.12 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.42
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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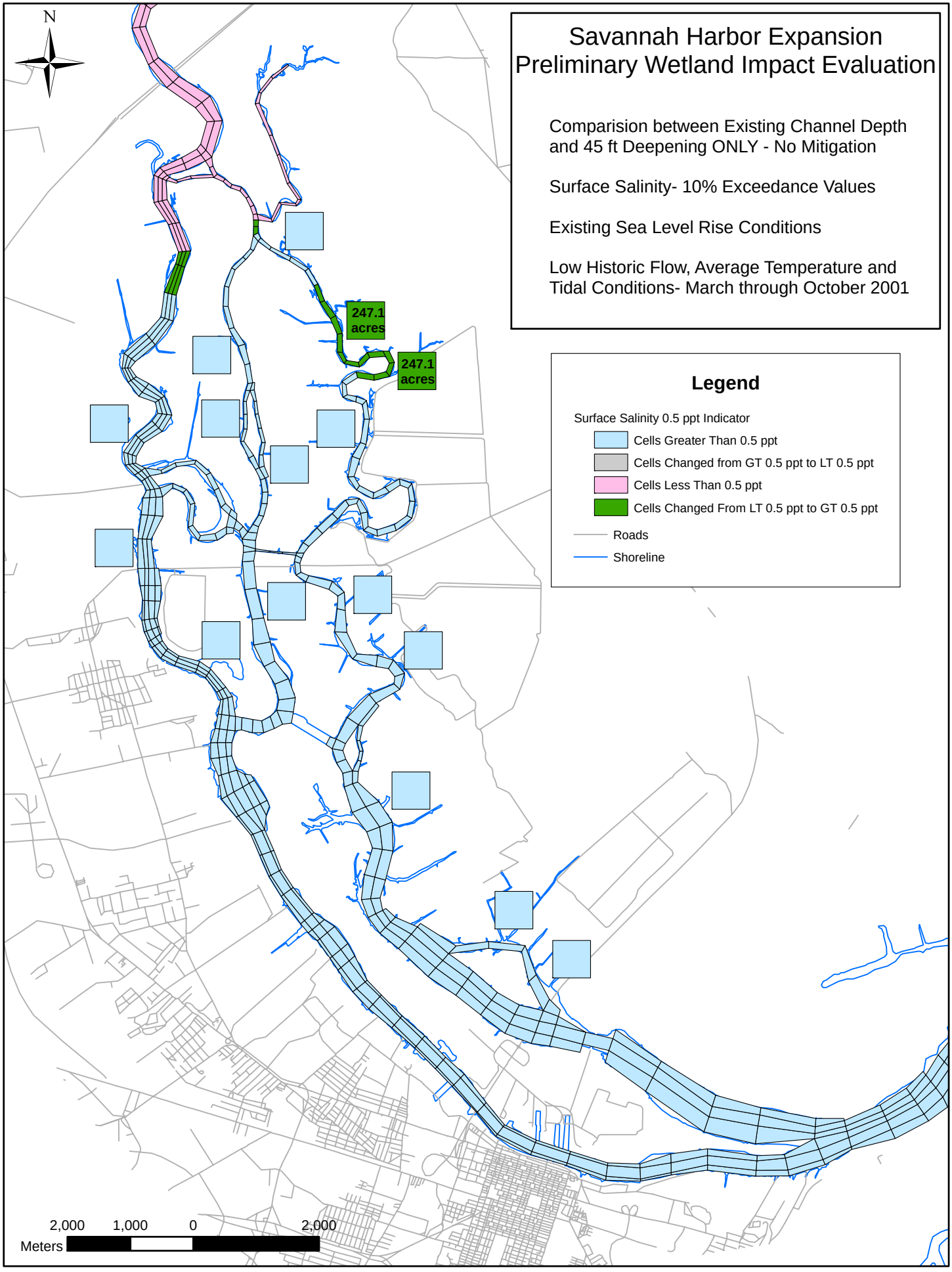
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
299.0 acres
469.2 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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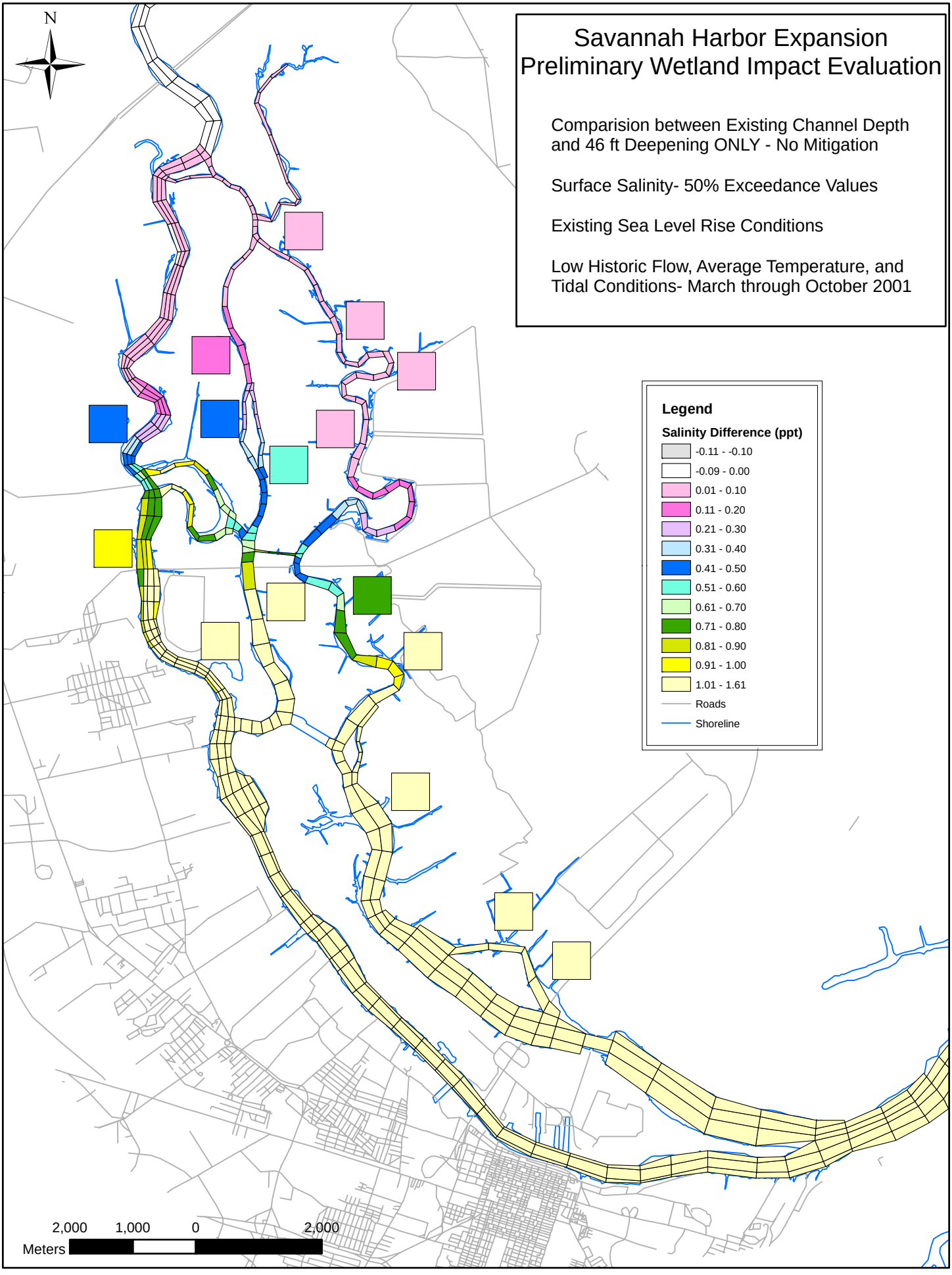
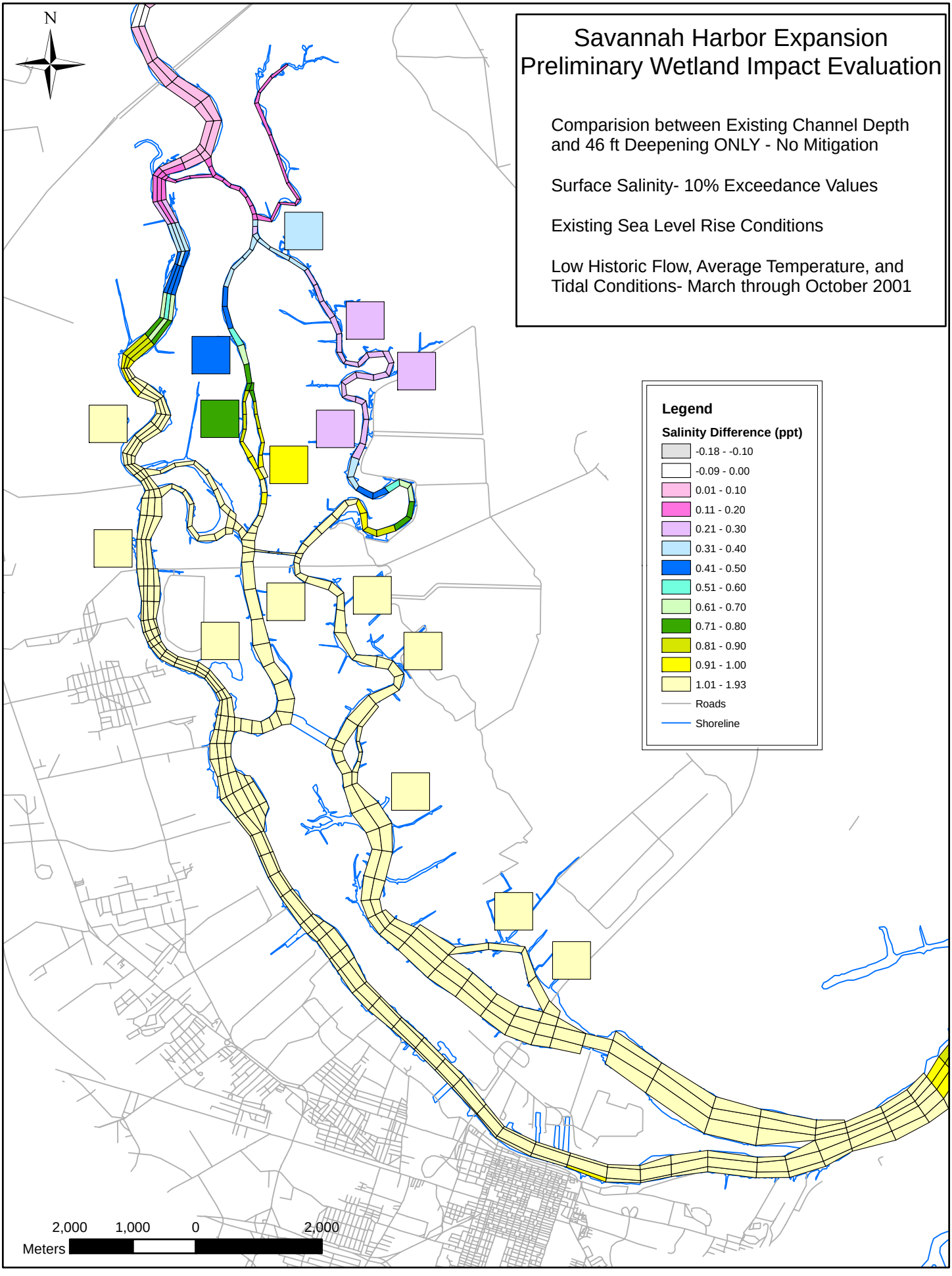
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
247.1 acres
247.1 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.11 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.61
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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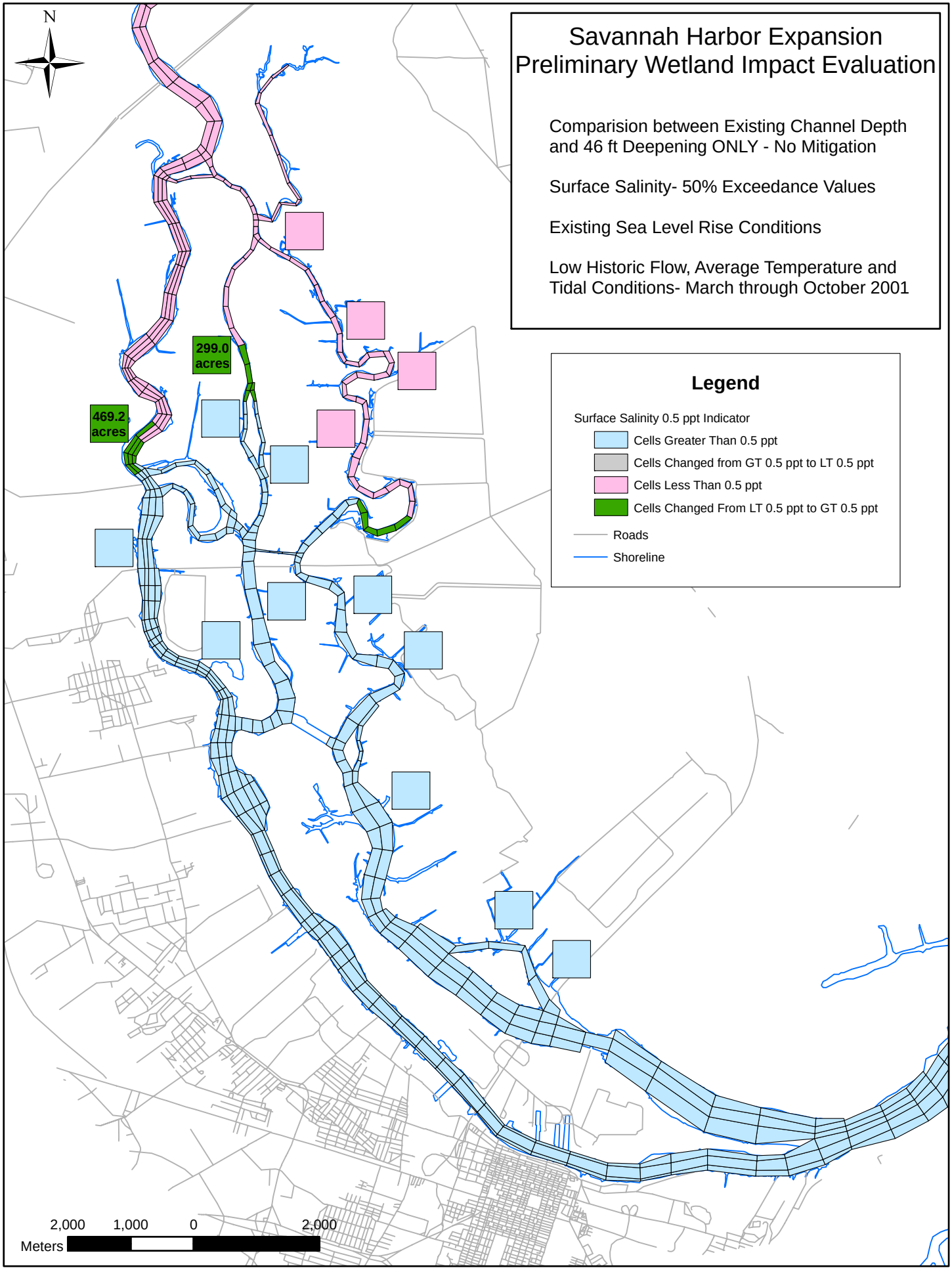
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.18 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.93
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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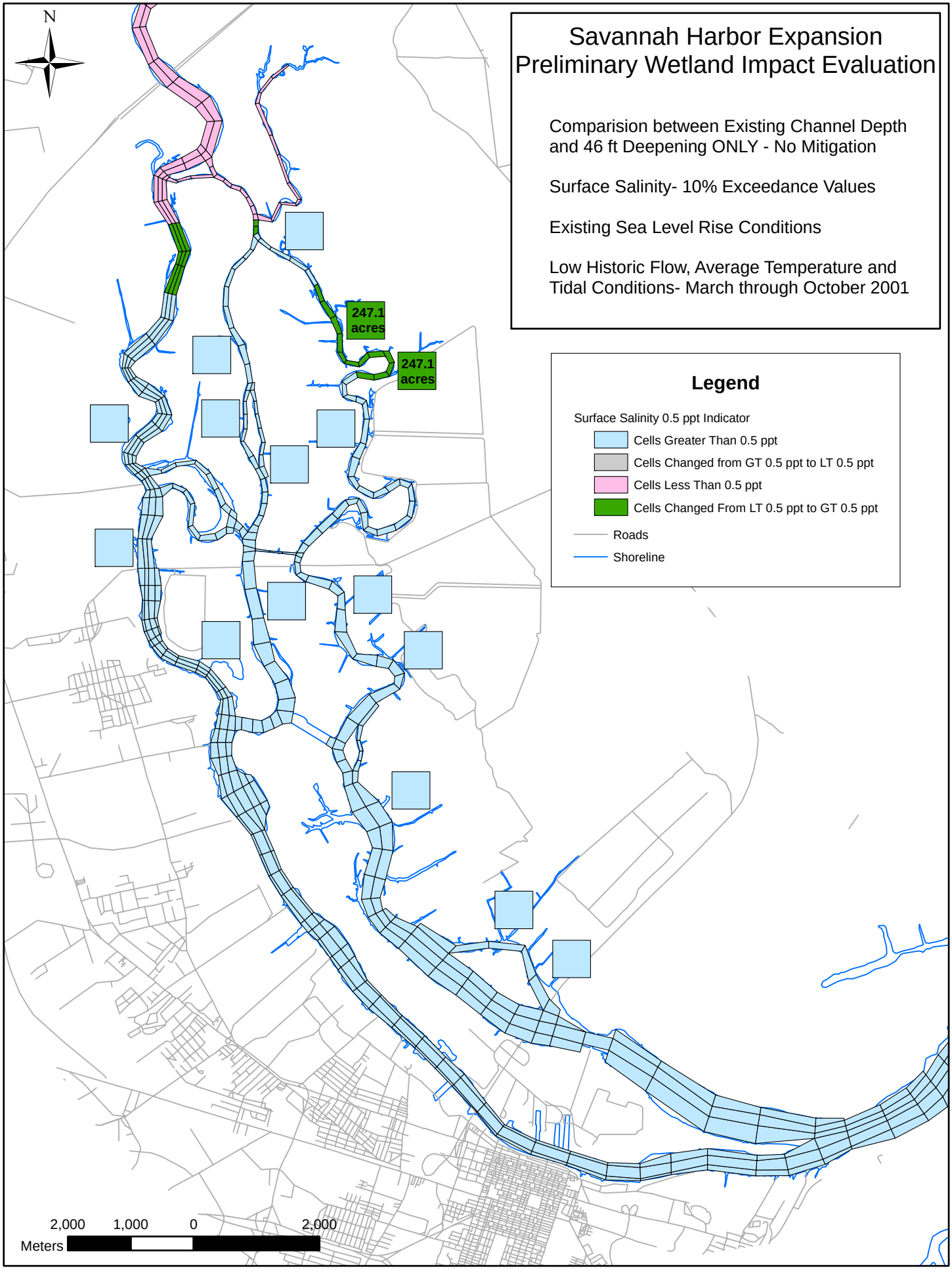
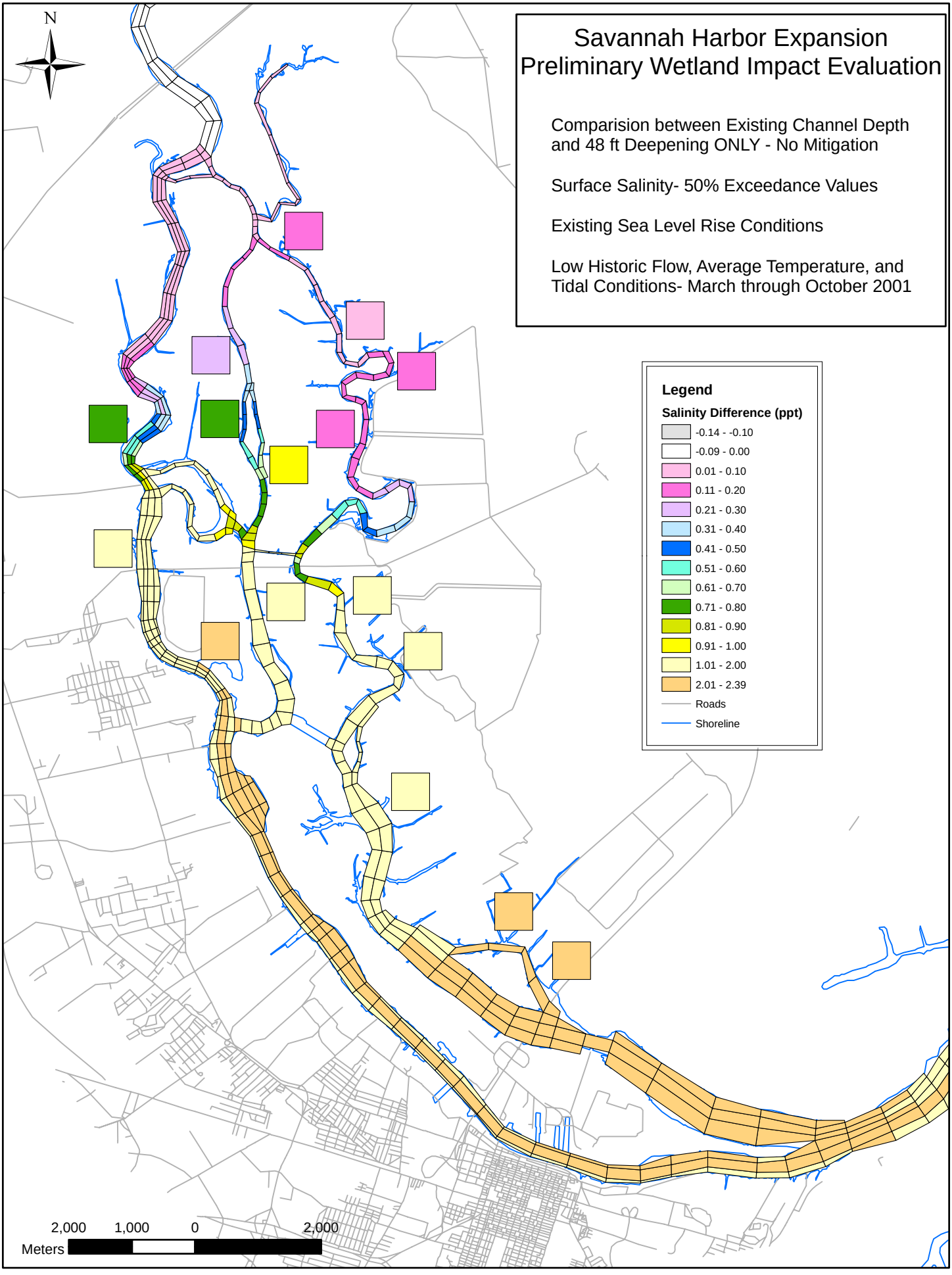
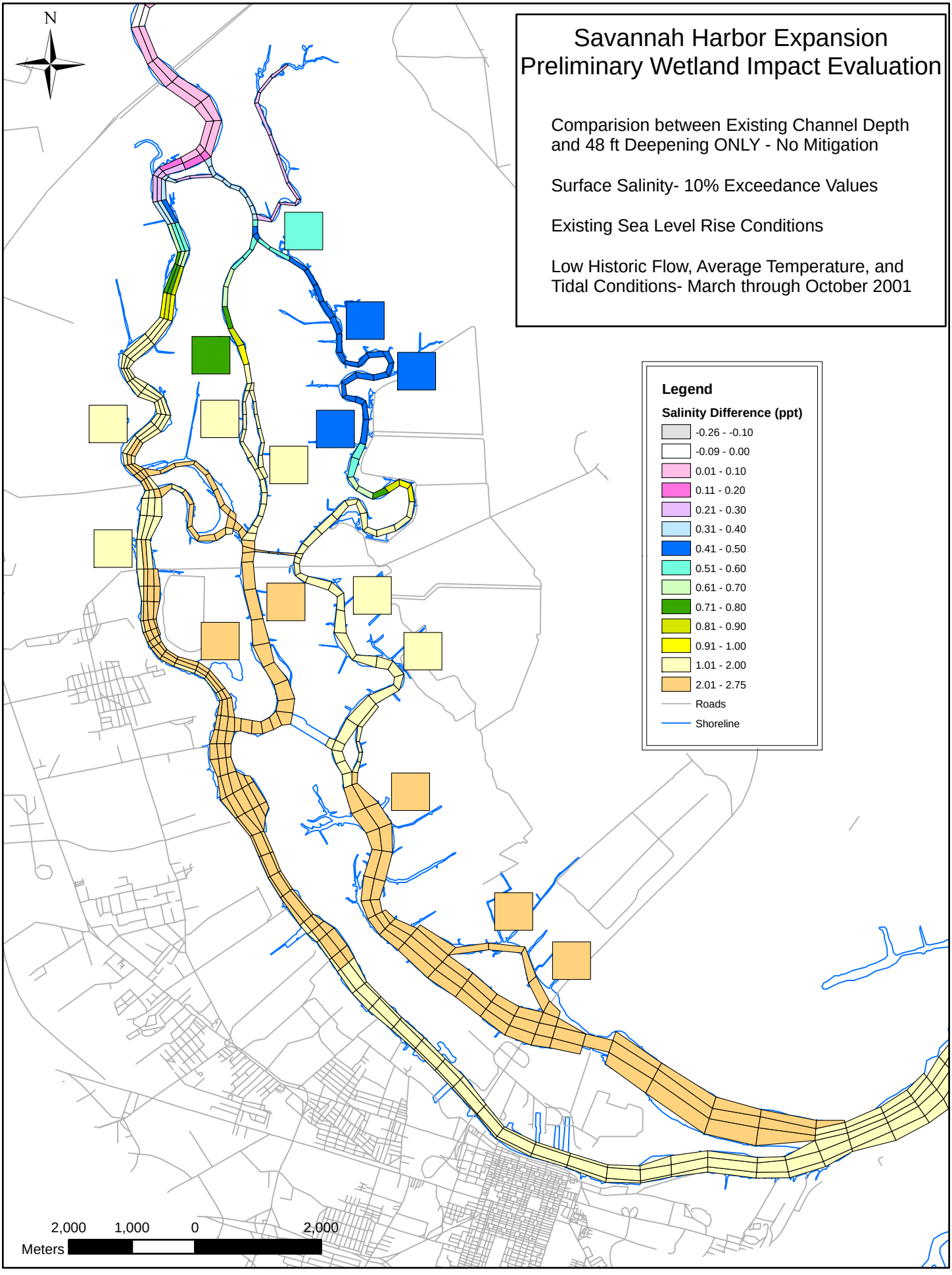
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
299.0 acres
469.2 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
247.1 acres
247.1 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.14 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.39
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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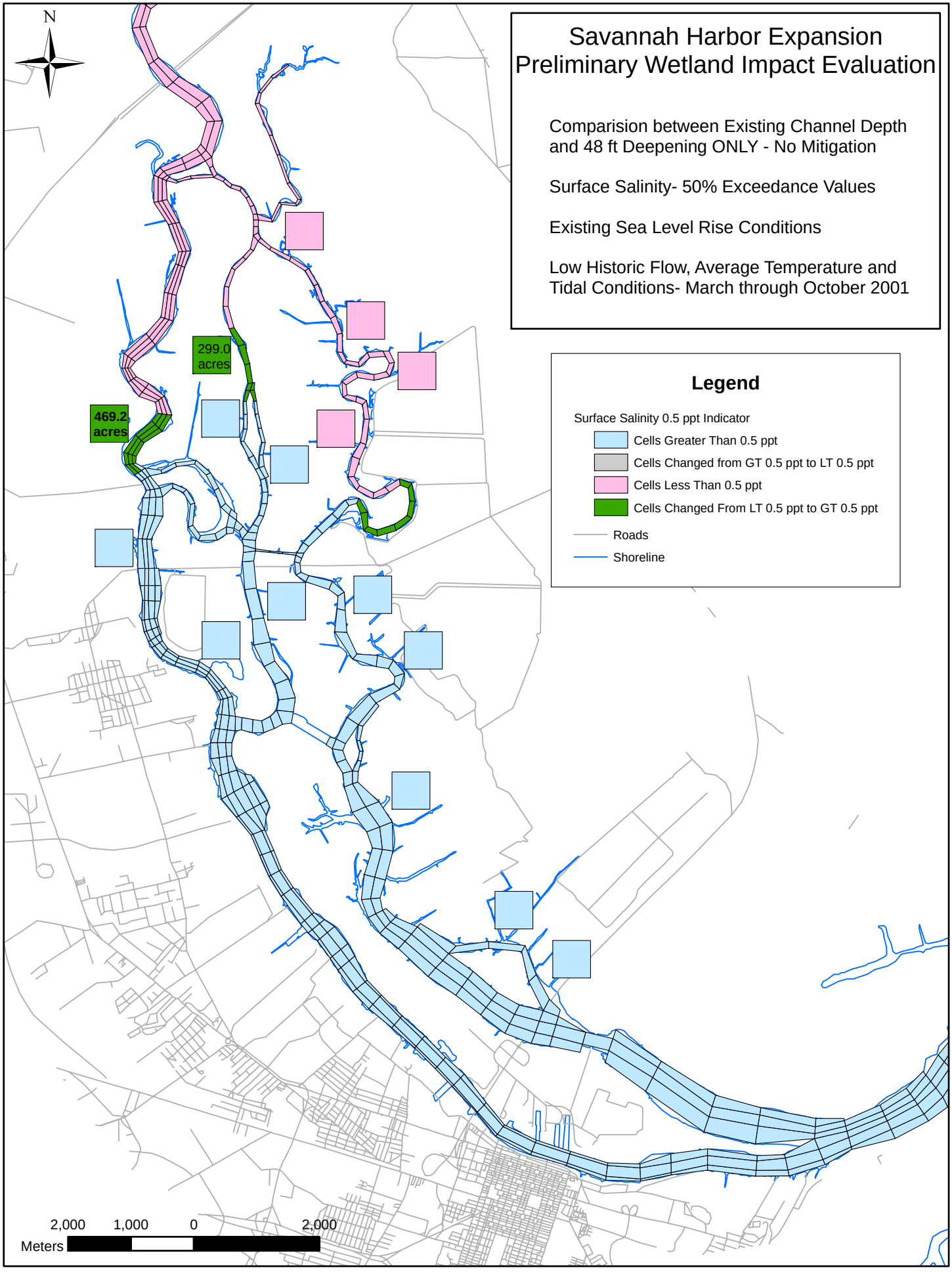
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature, and Tidal Conditions- March through October 2001
Legend
Salinity Difference (ppt)
-0.26 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.75
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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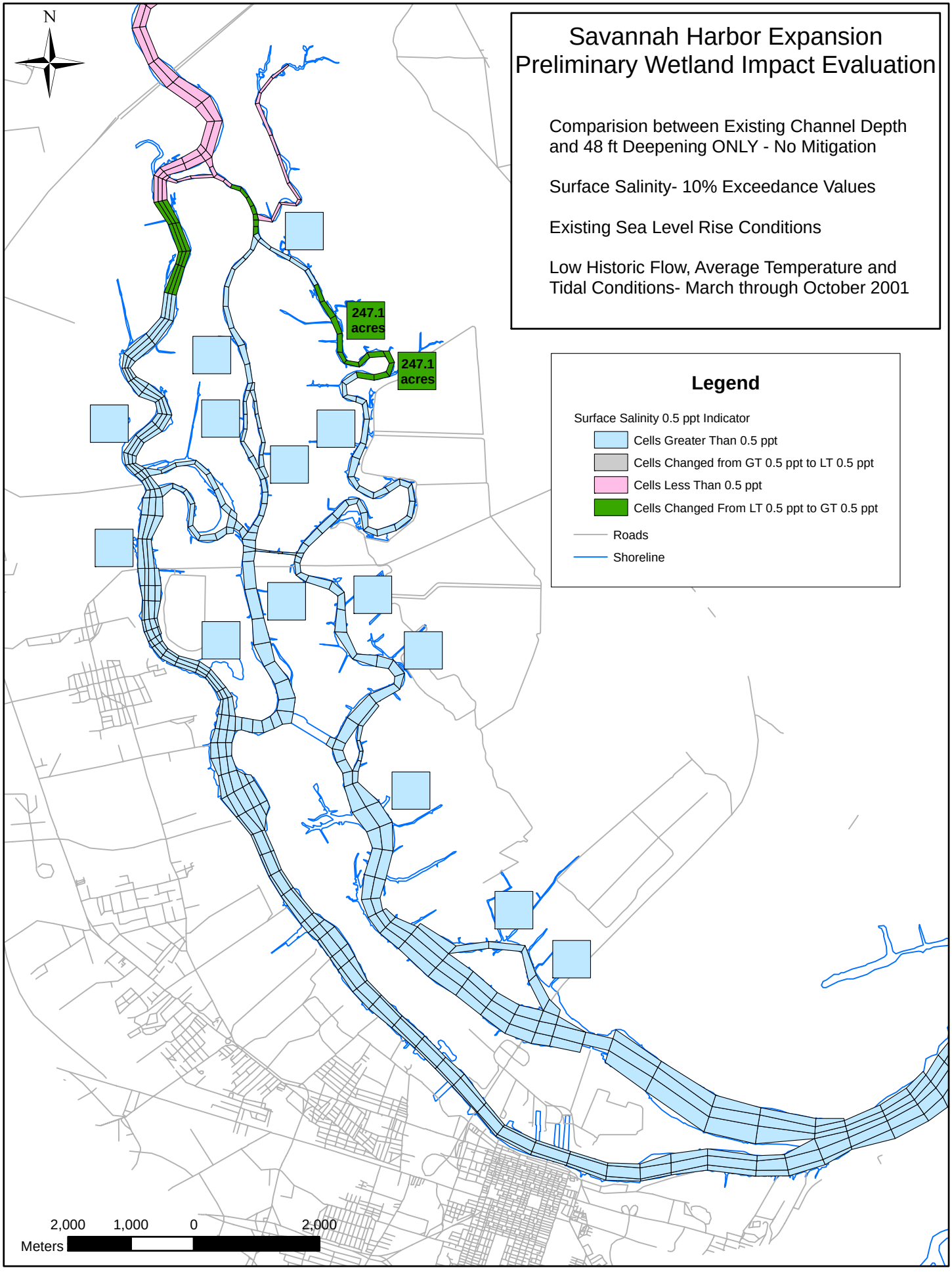
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
299.0 acres
469.2 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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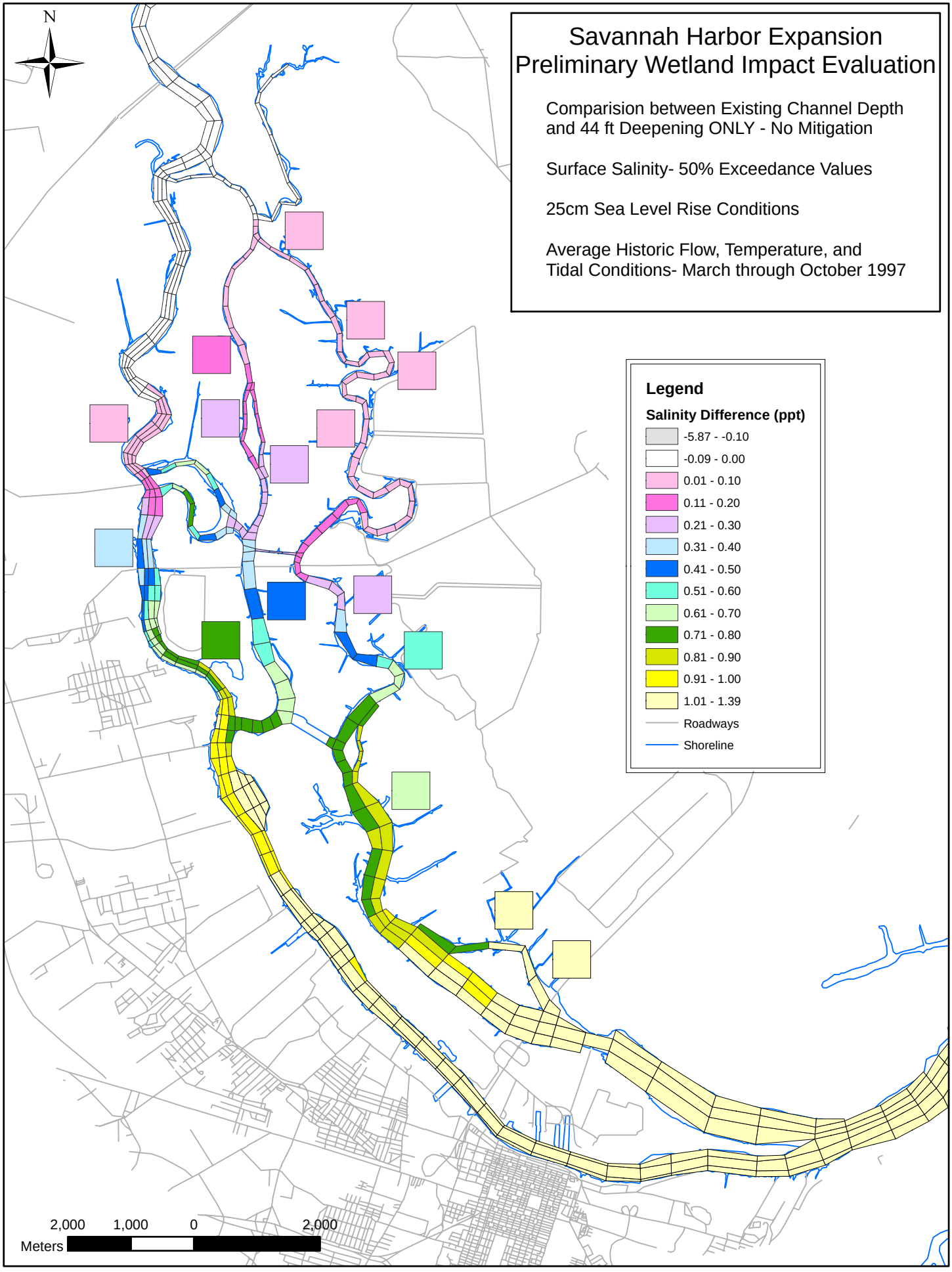
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
Existing Sea Level Rise Conditions
Low Historic Flow, Average Temperature and Tidal Conditions- March through October 2001
247.1 acres
247.1 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007

Sensitivity Analysis #2A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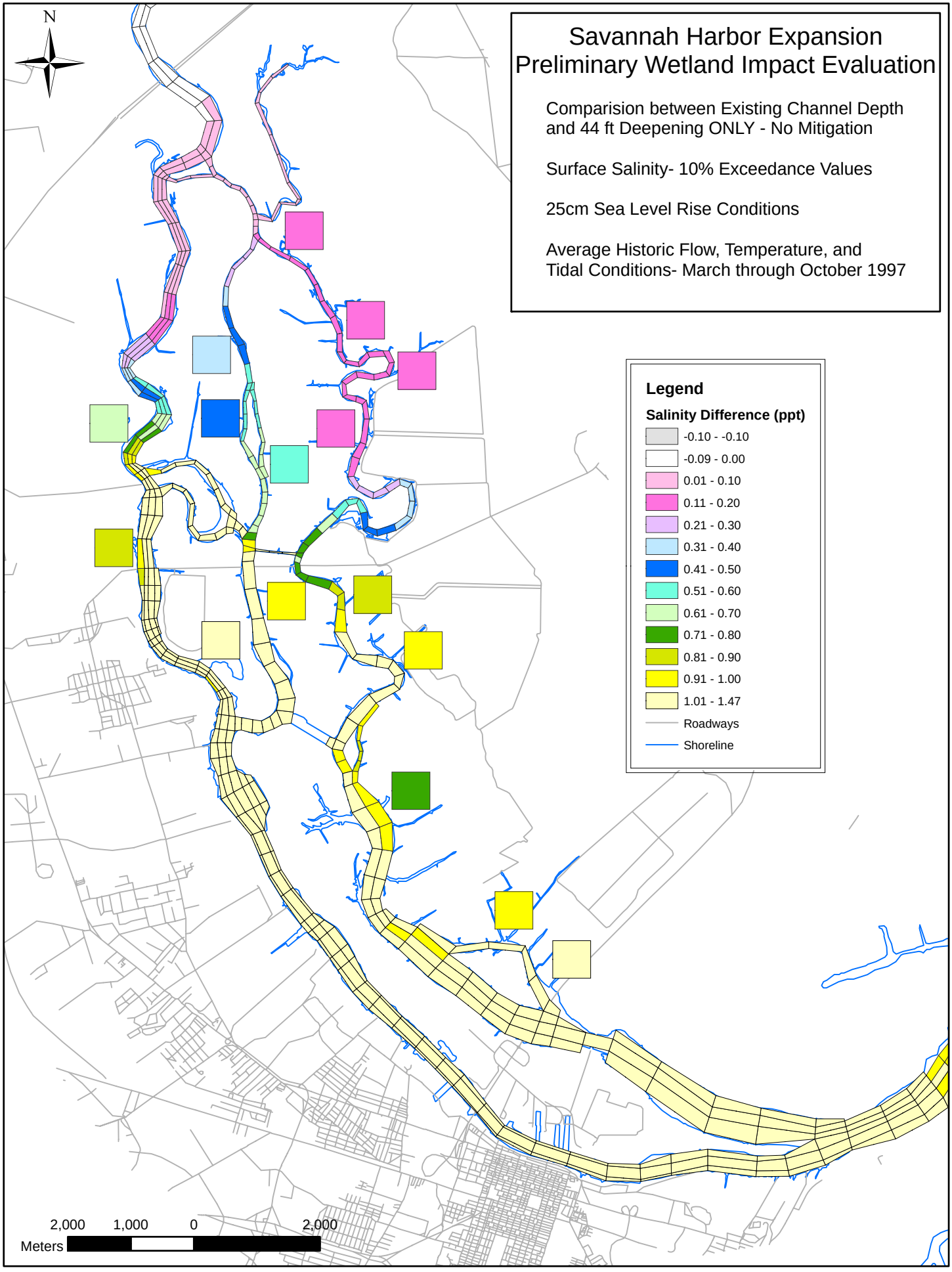
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-5.87 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.39
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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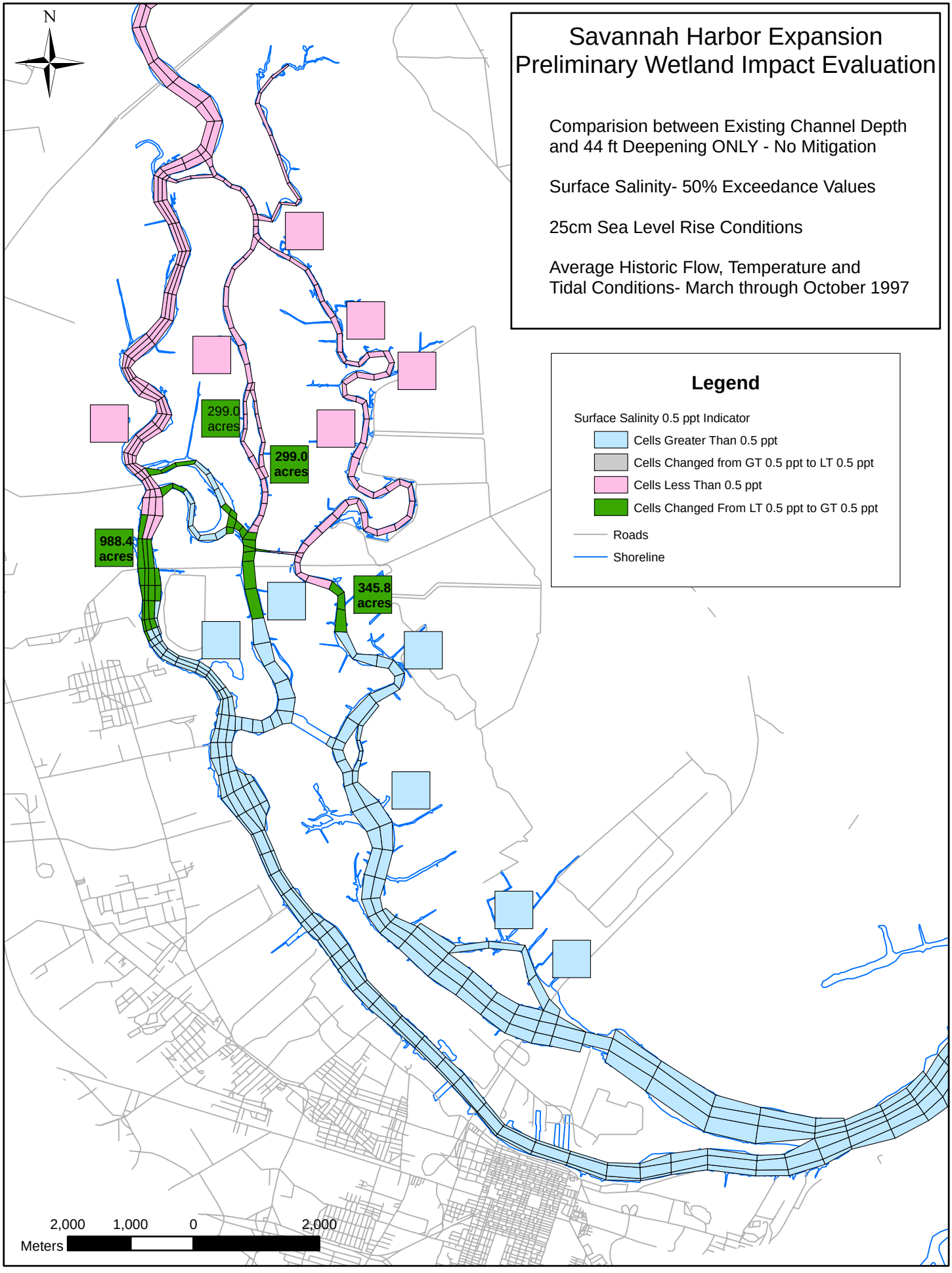
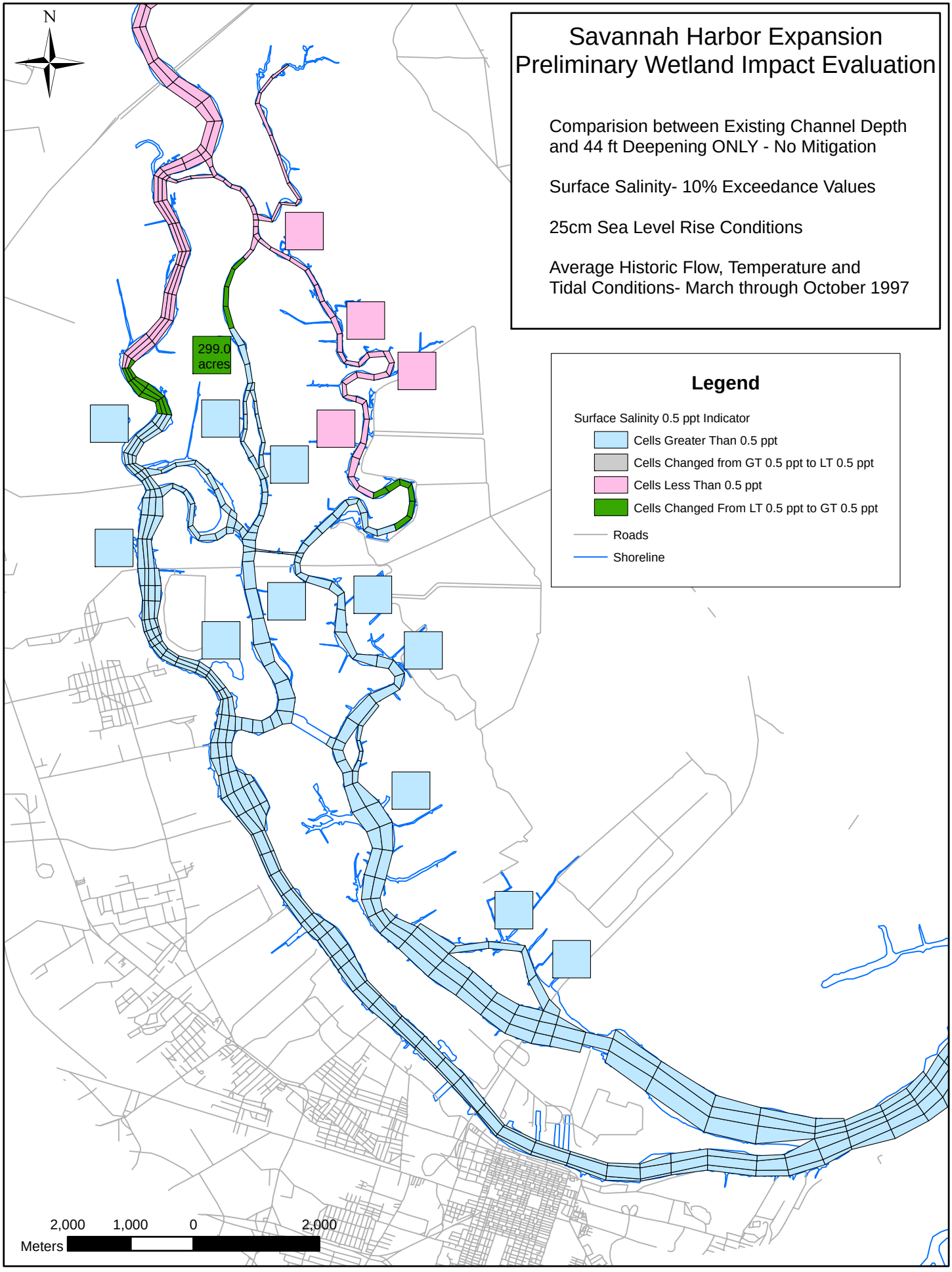
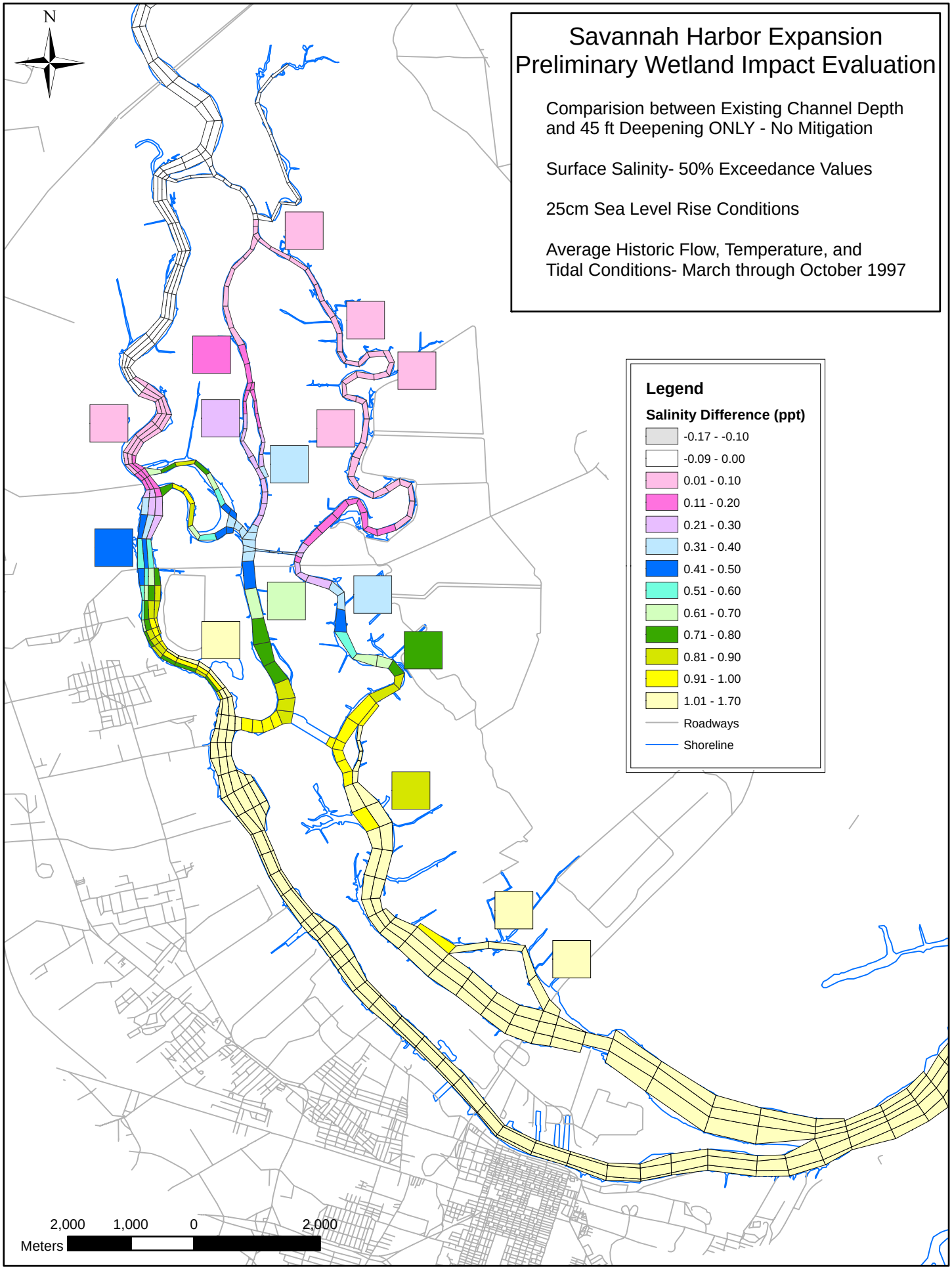
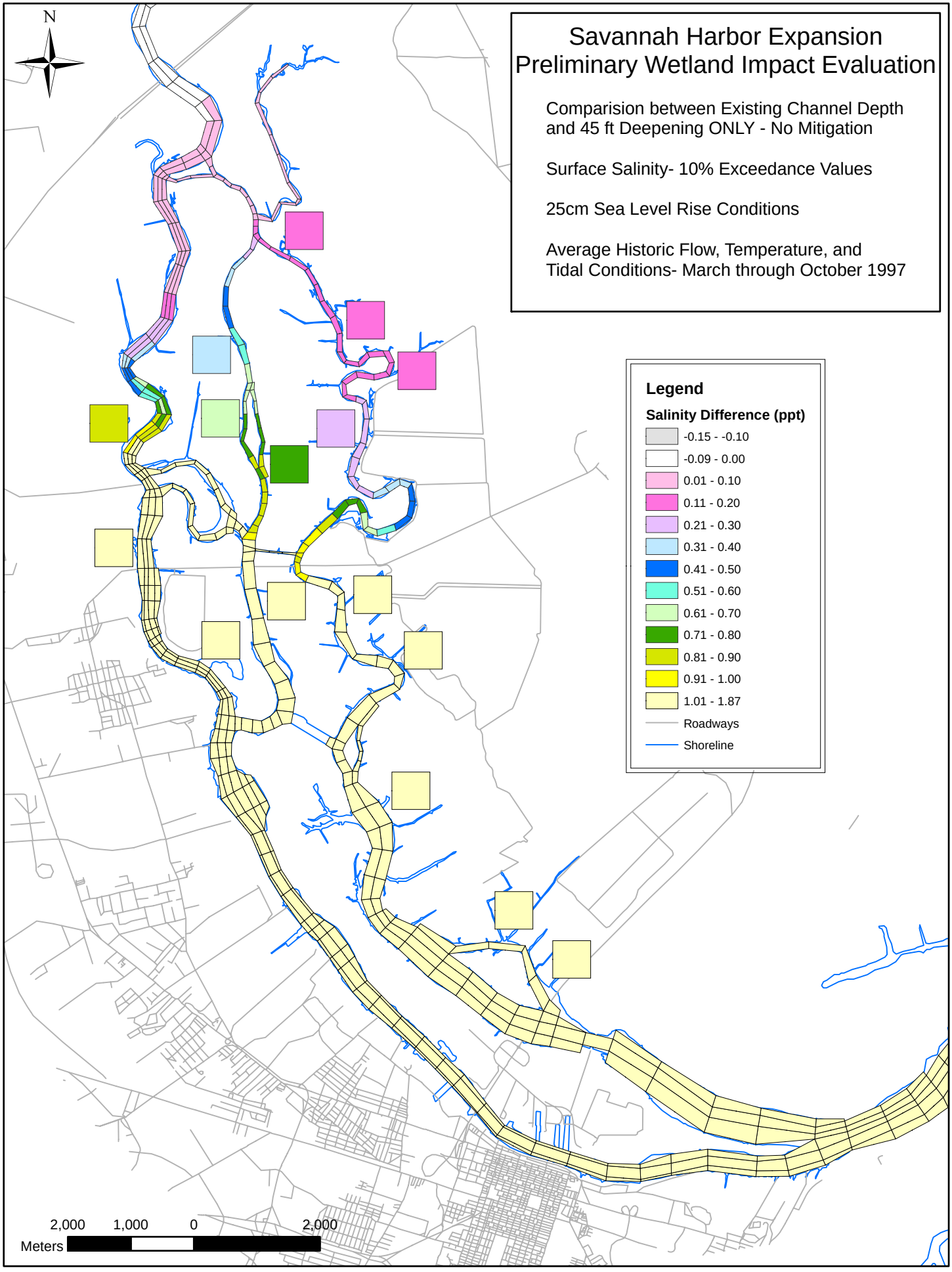
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.10 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.47
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.17 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.70
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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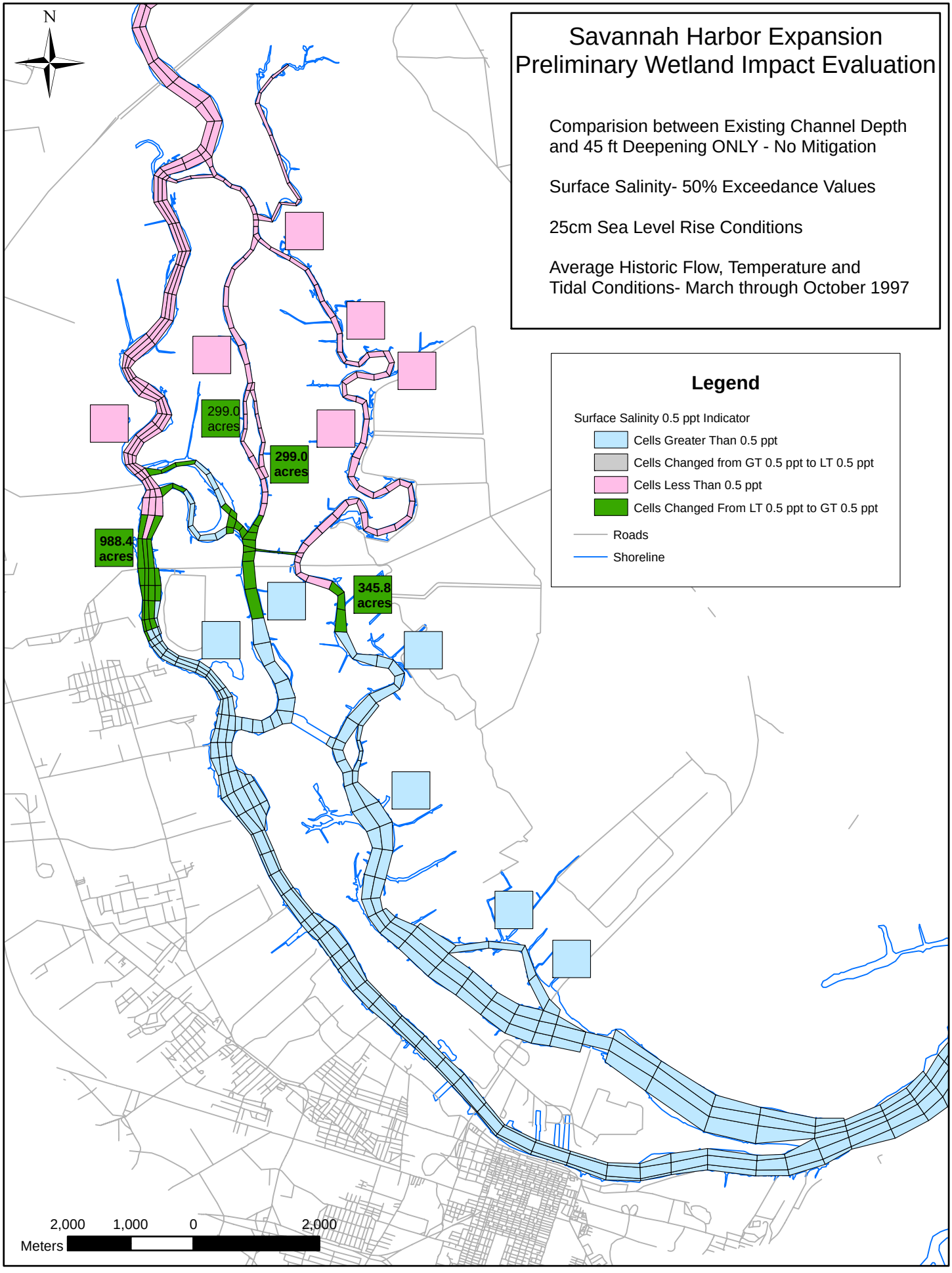
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.15 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 1.87
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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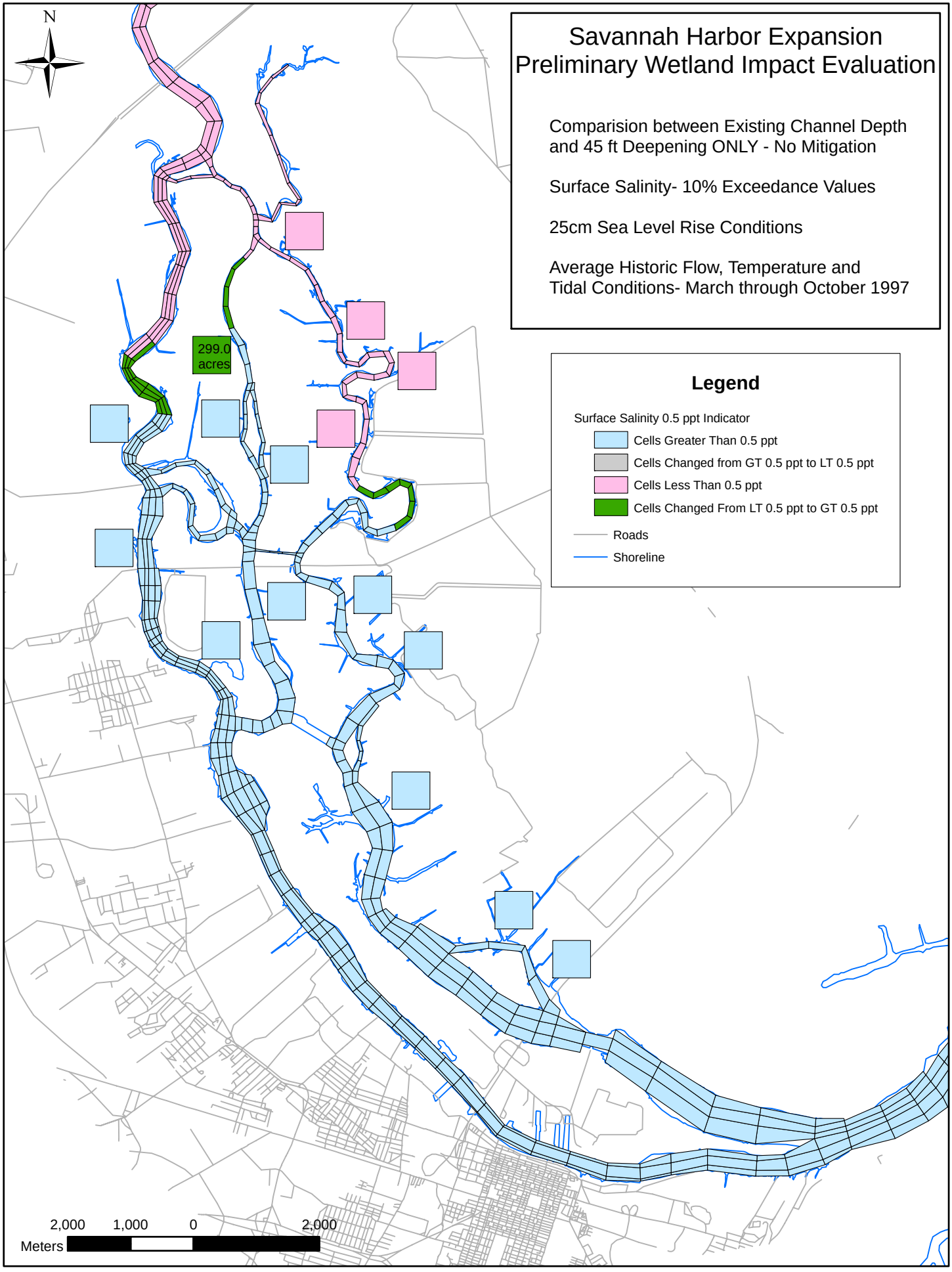
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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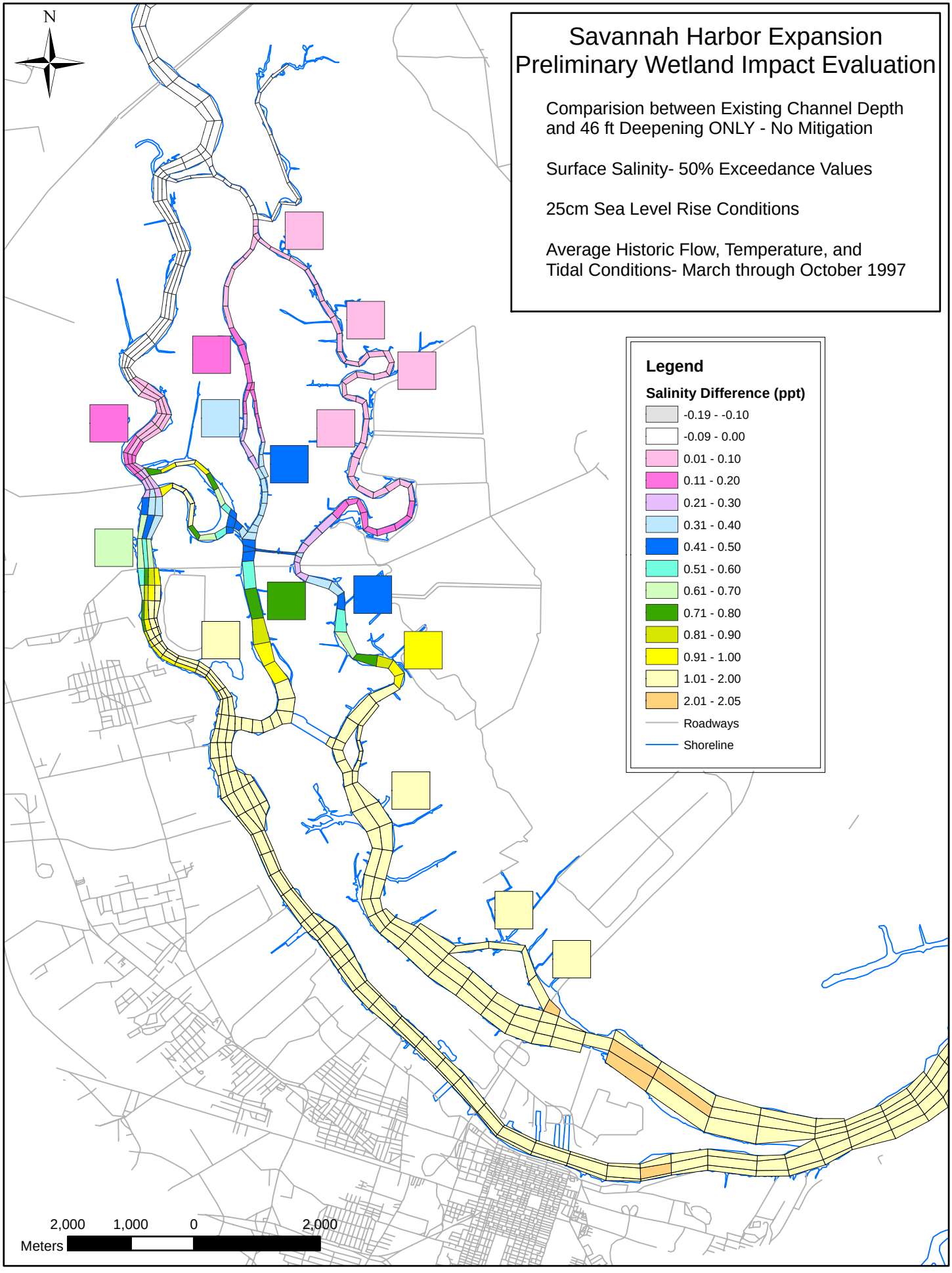
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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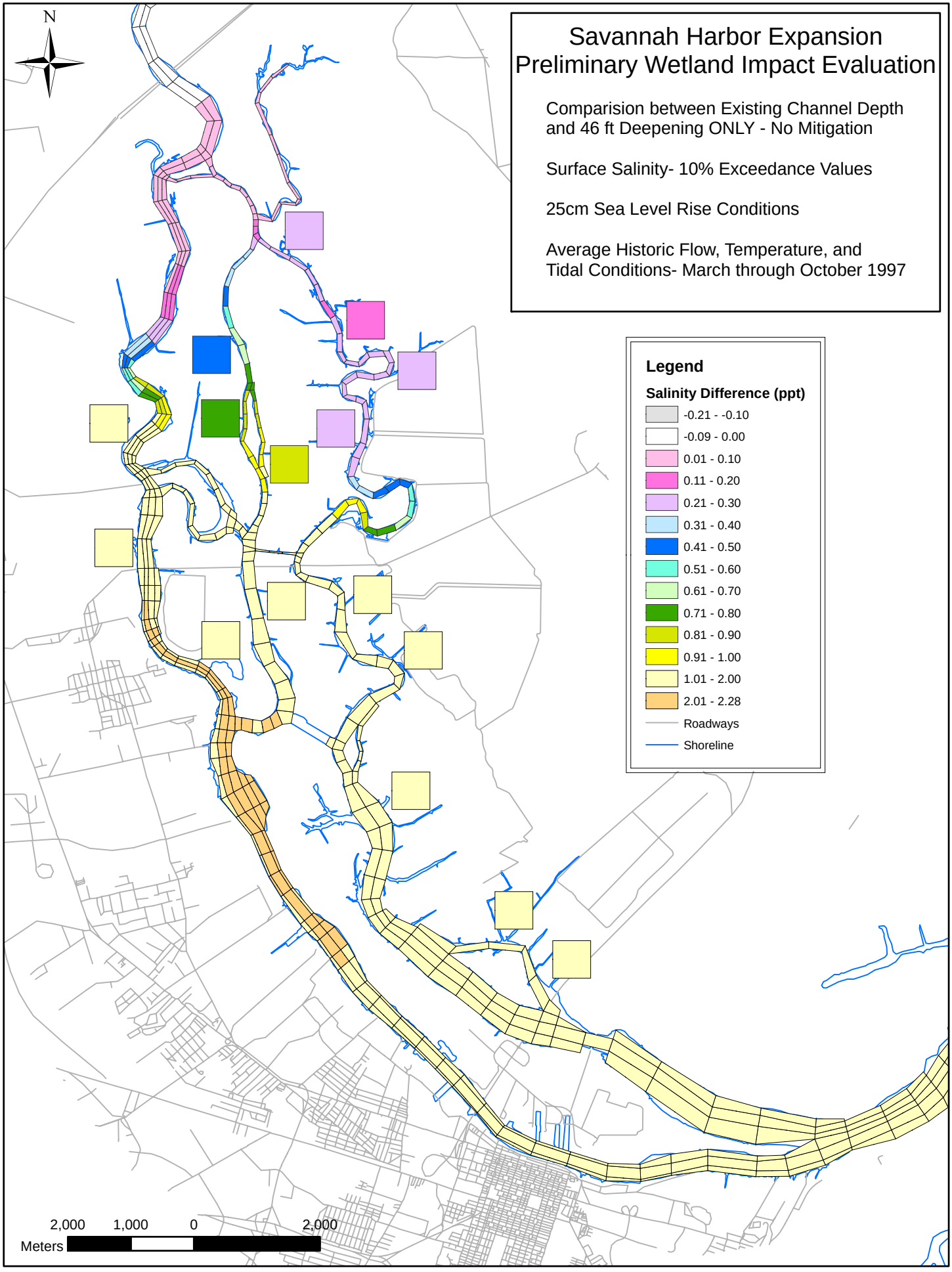
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.19 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.05
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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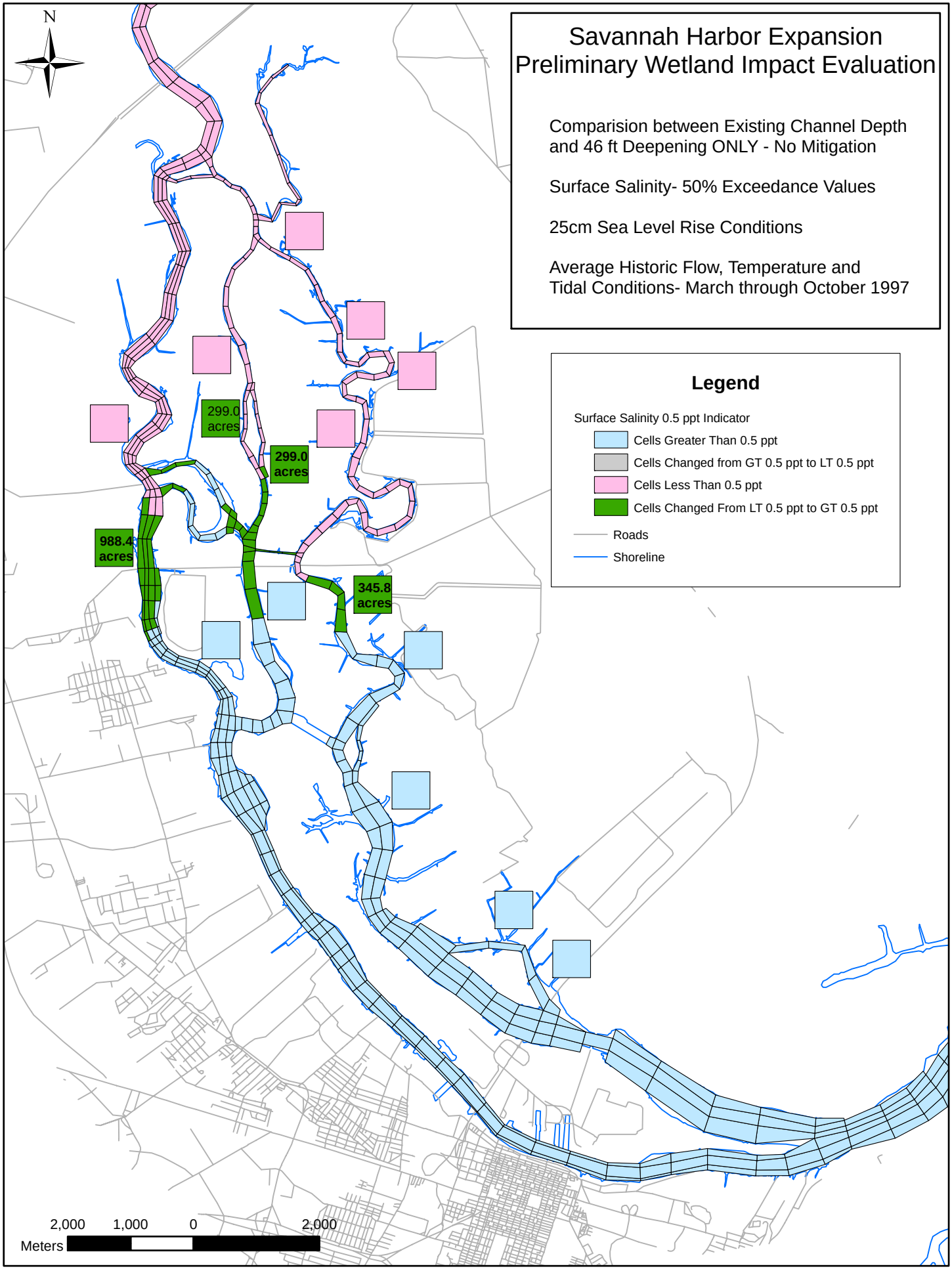
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.21 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.28
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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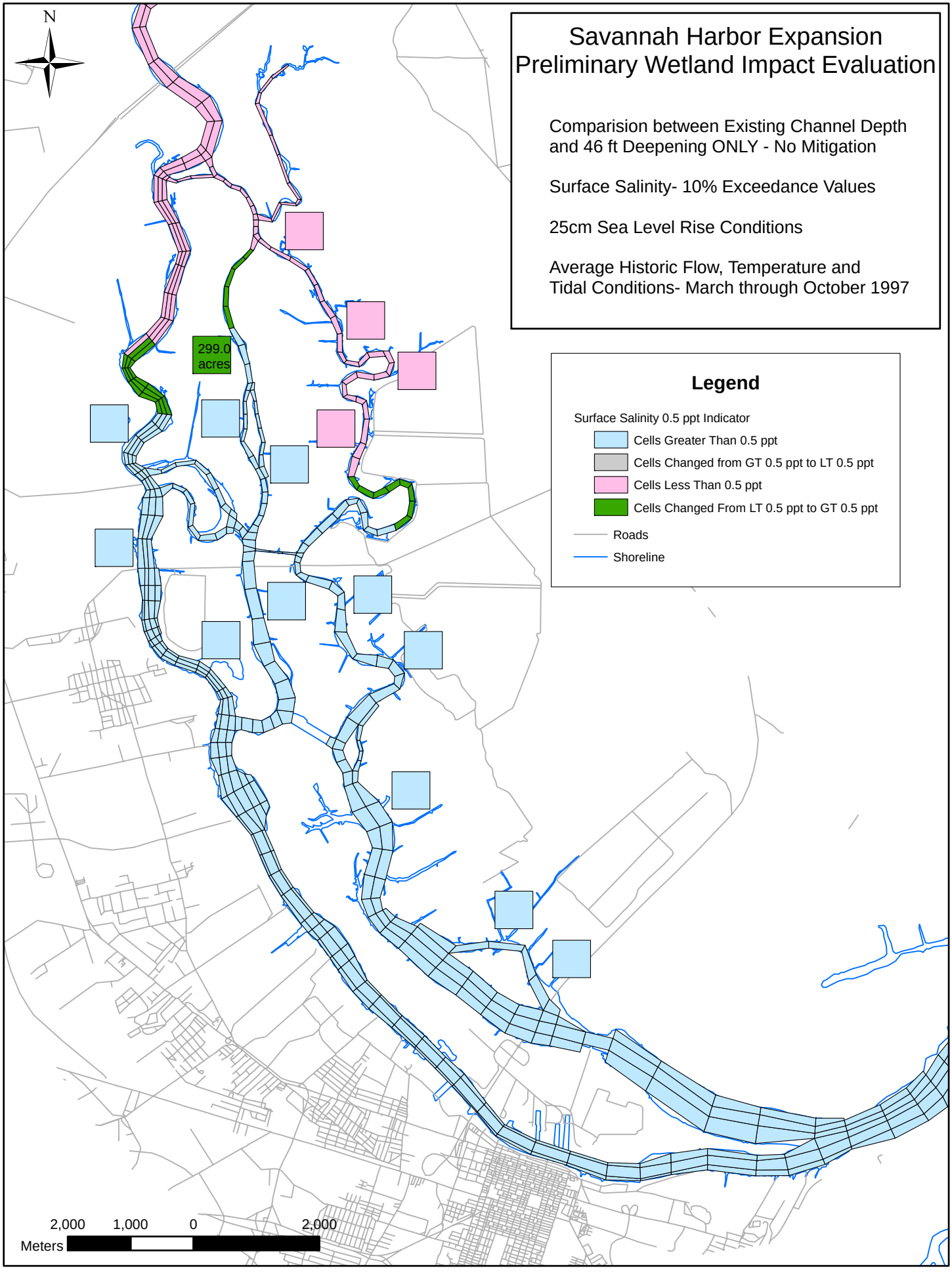
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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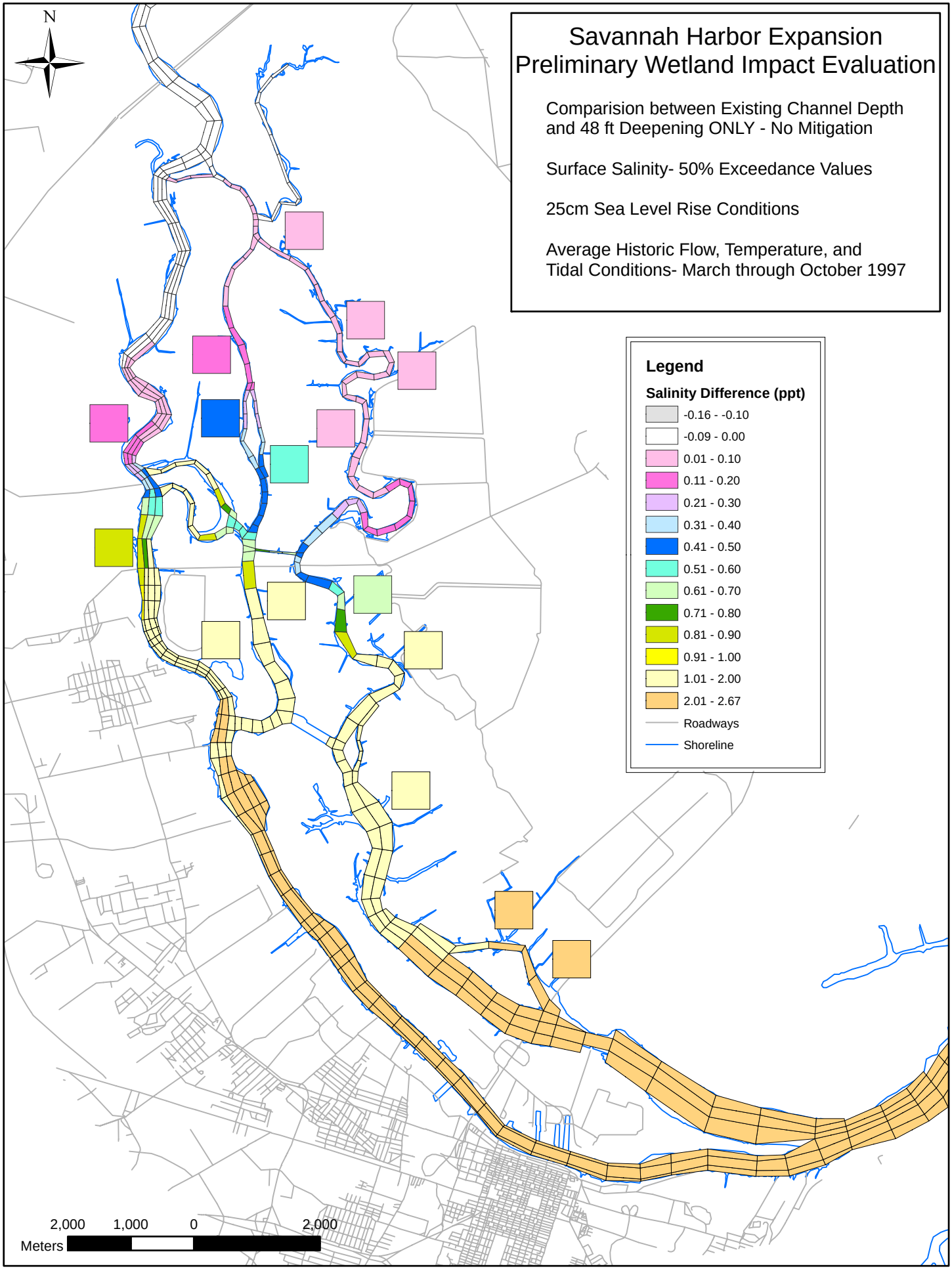
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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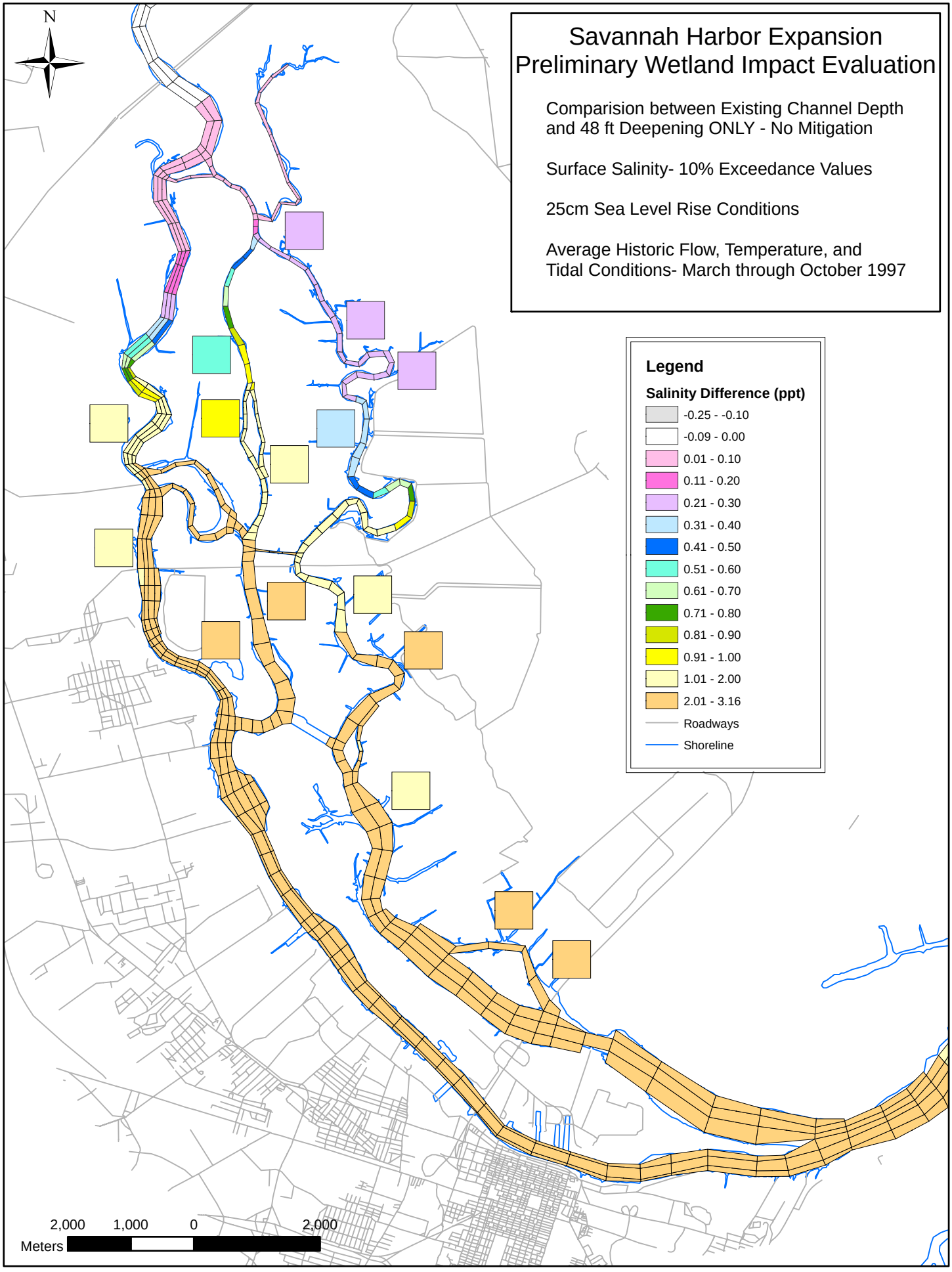
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.16 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.67
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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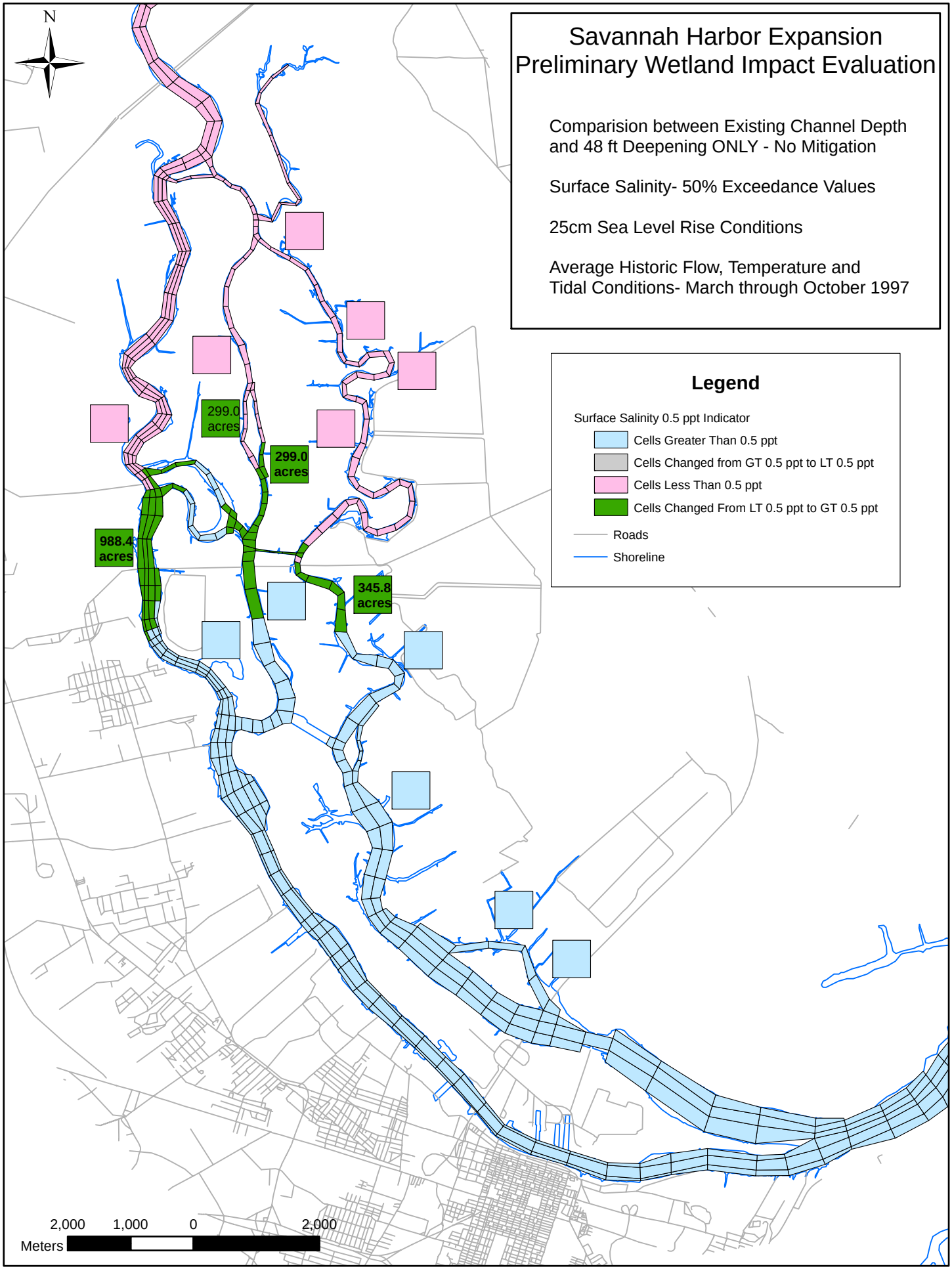
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.25 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.16
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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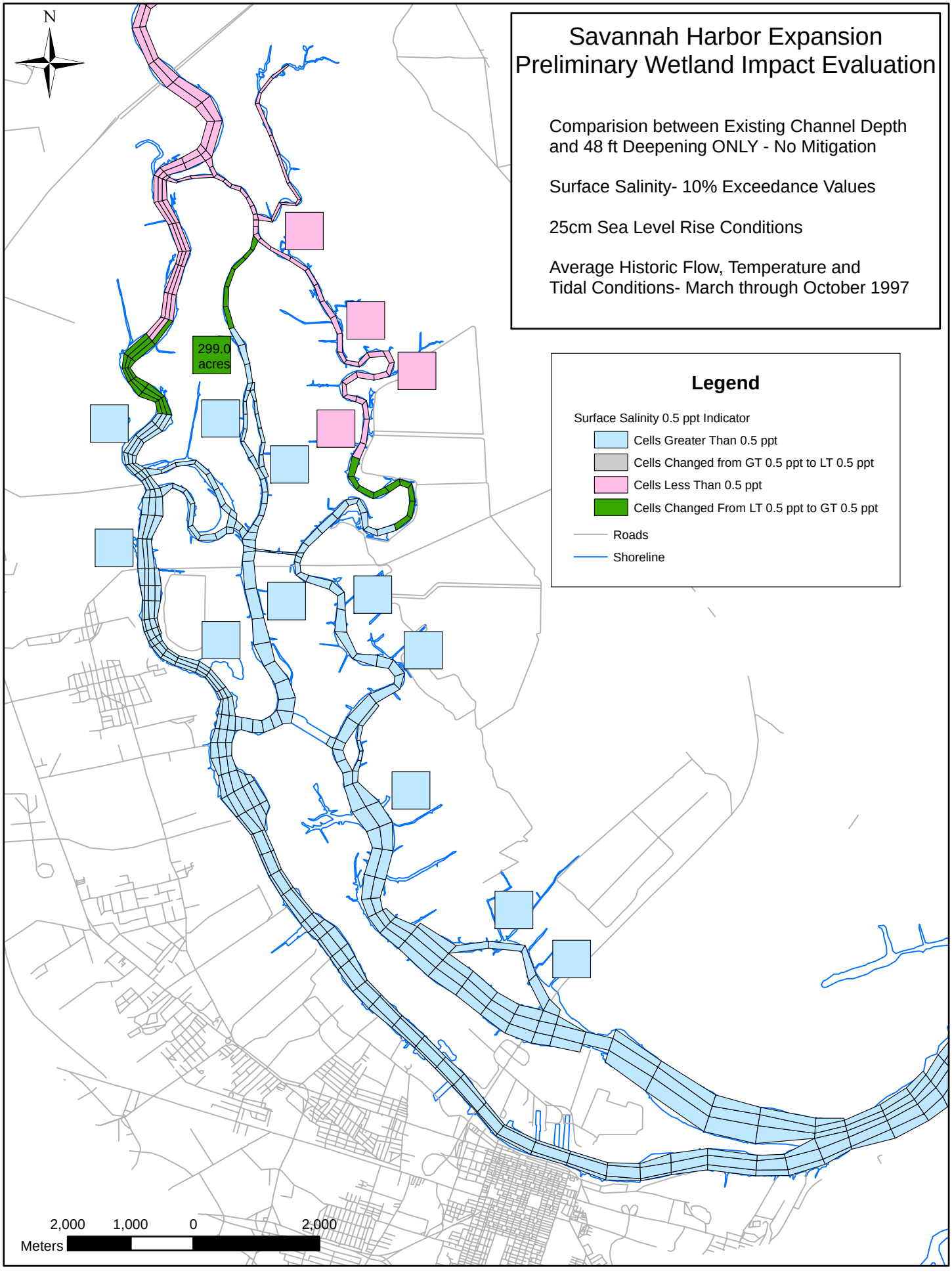
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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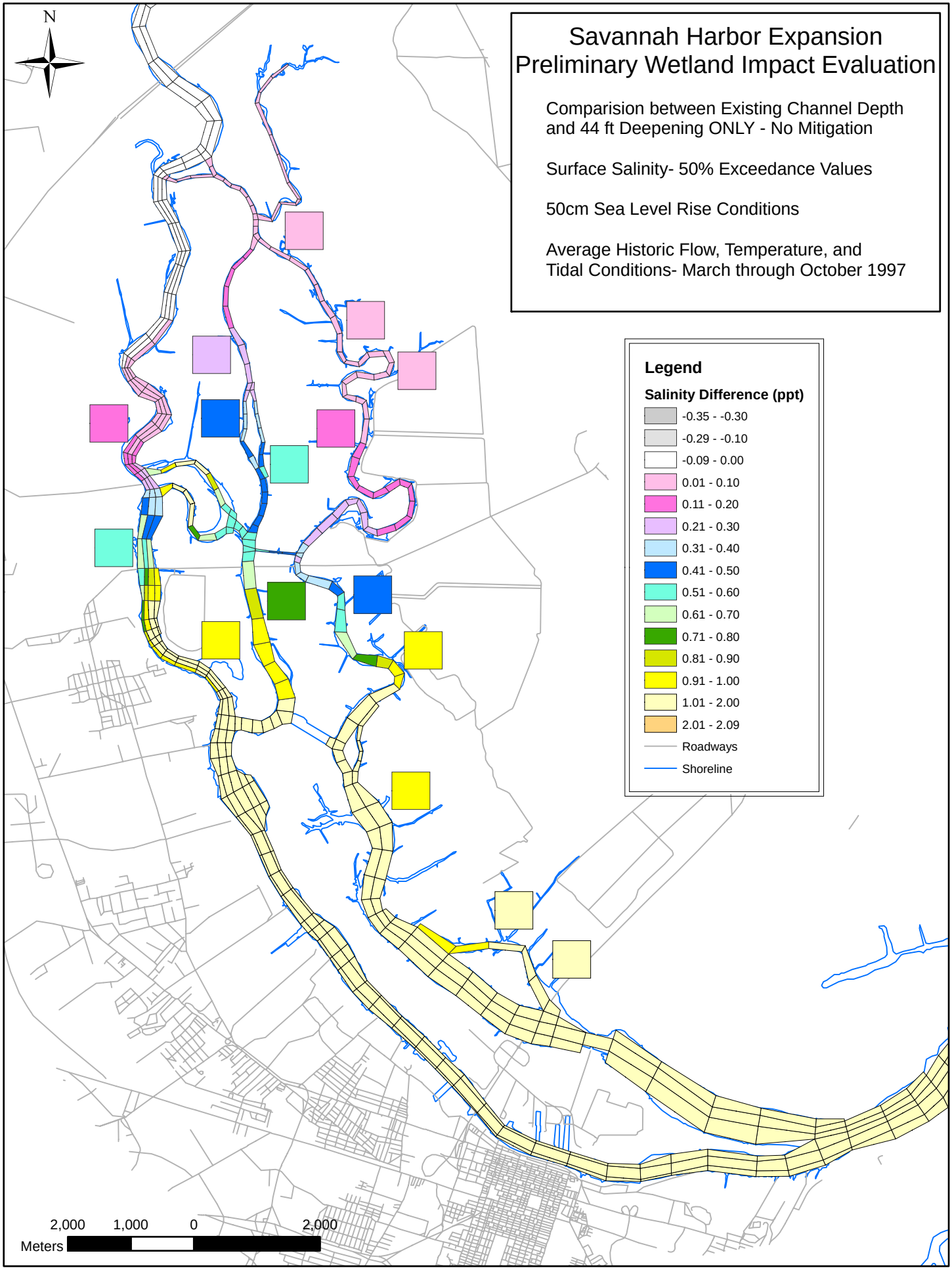
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
25cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
299.0 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007

Sensitivity Analysis #2B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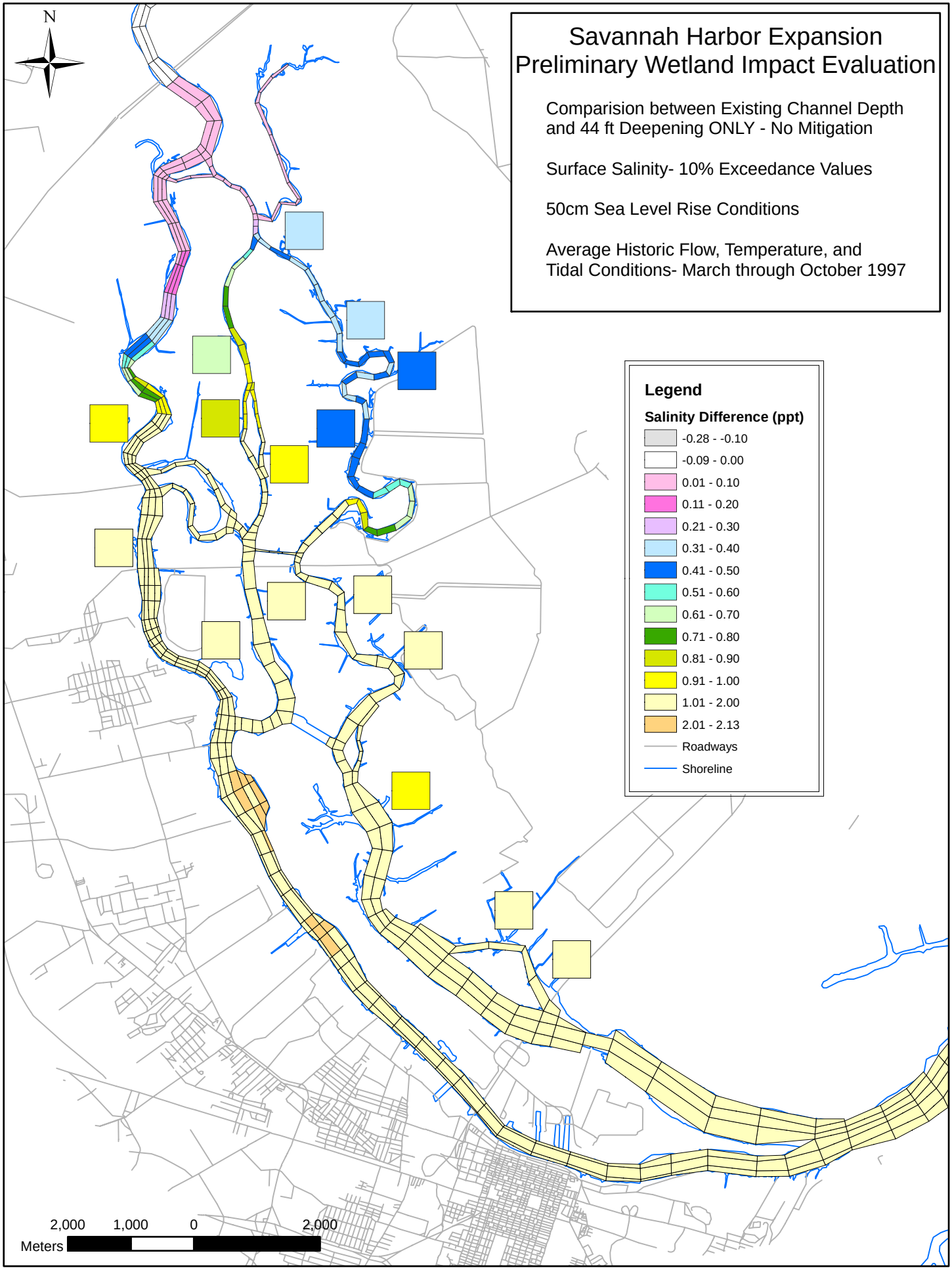
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.35 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.09
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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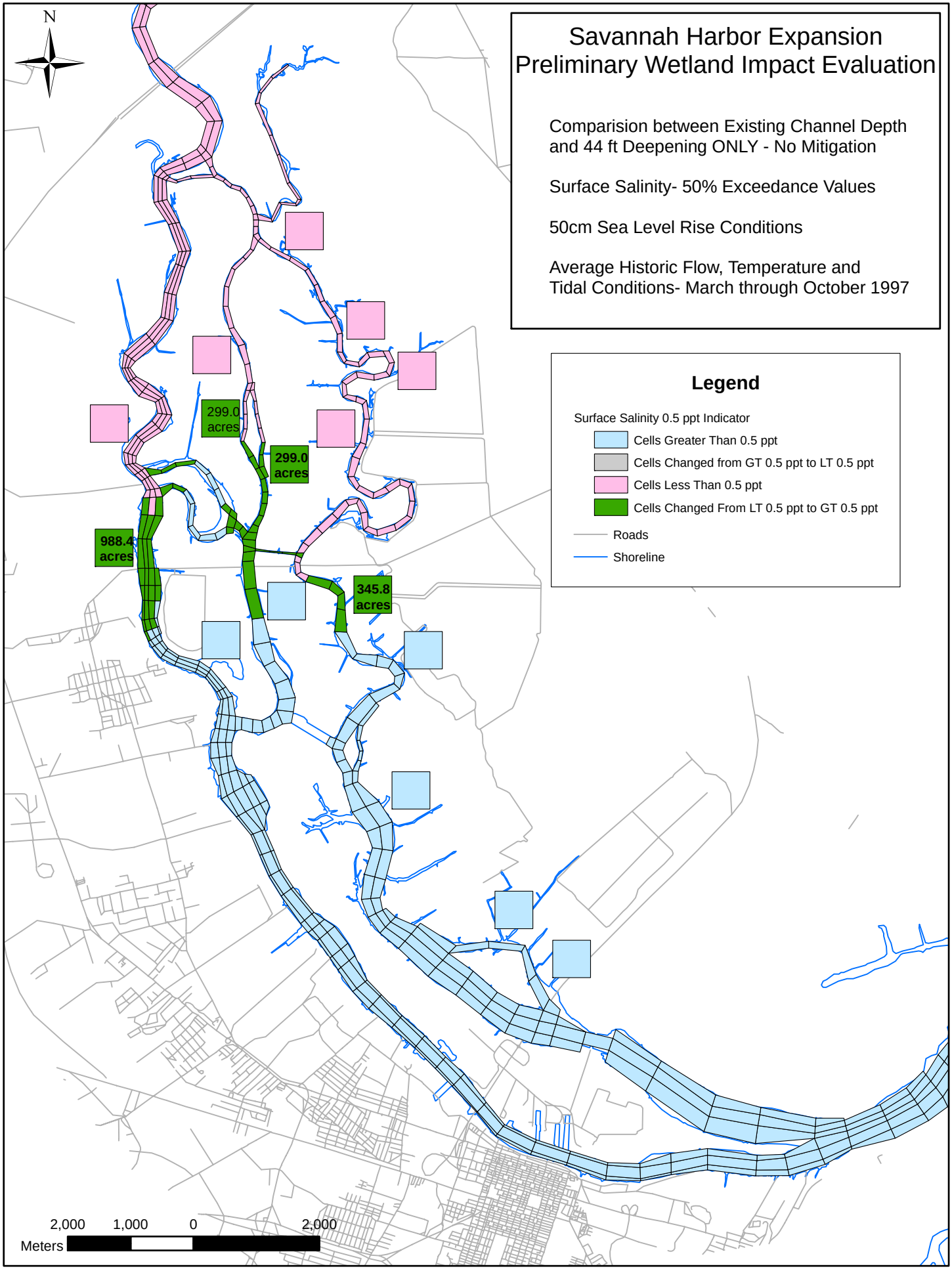
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.28 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.13
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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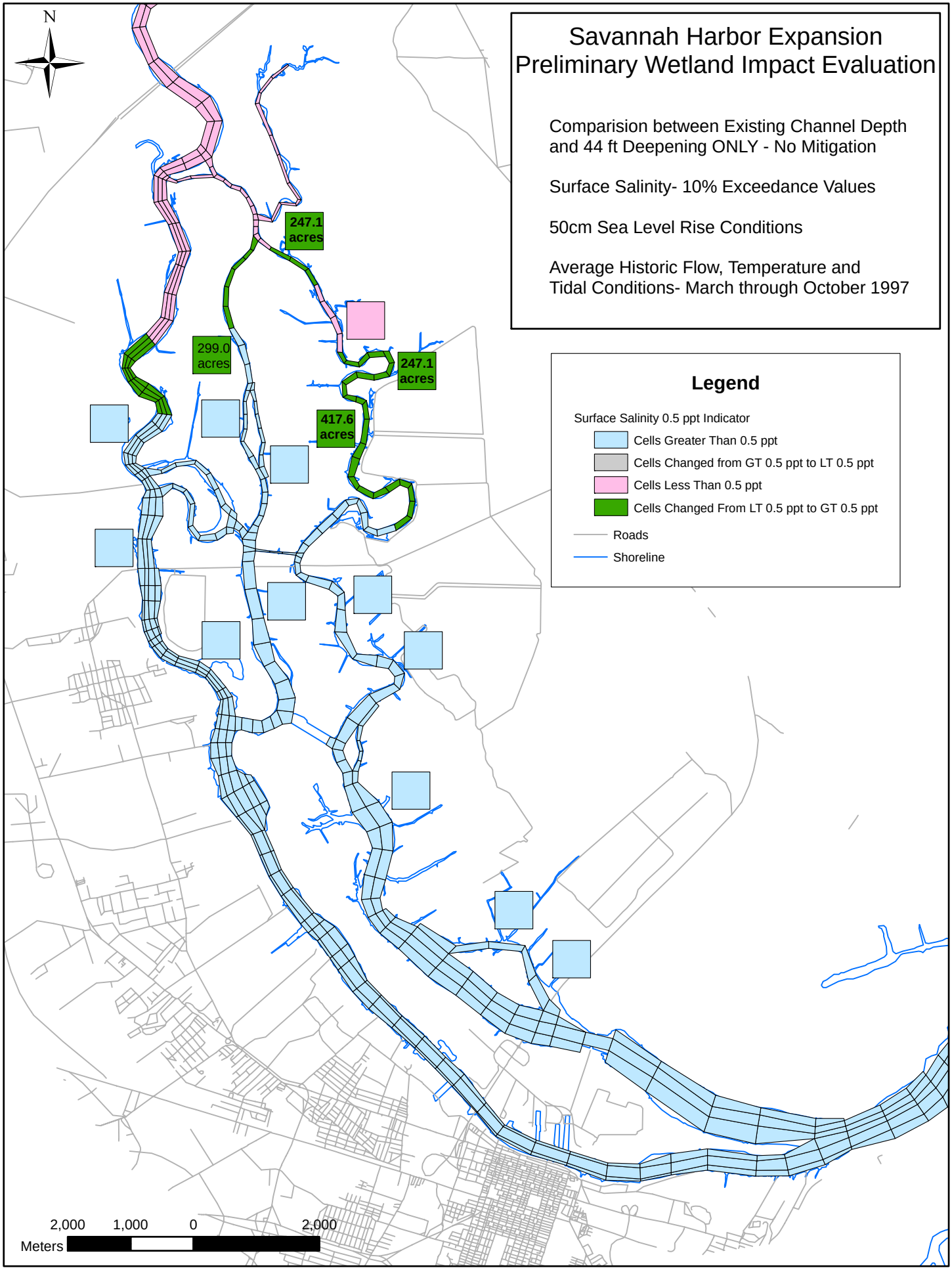
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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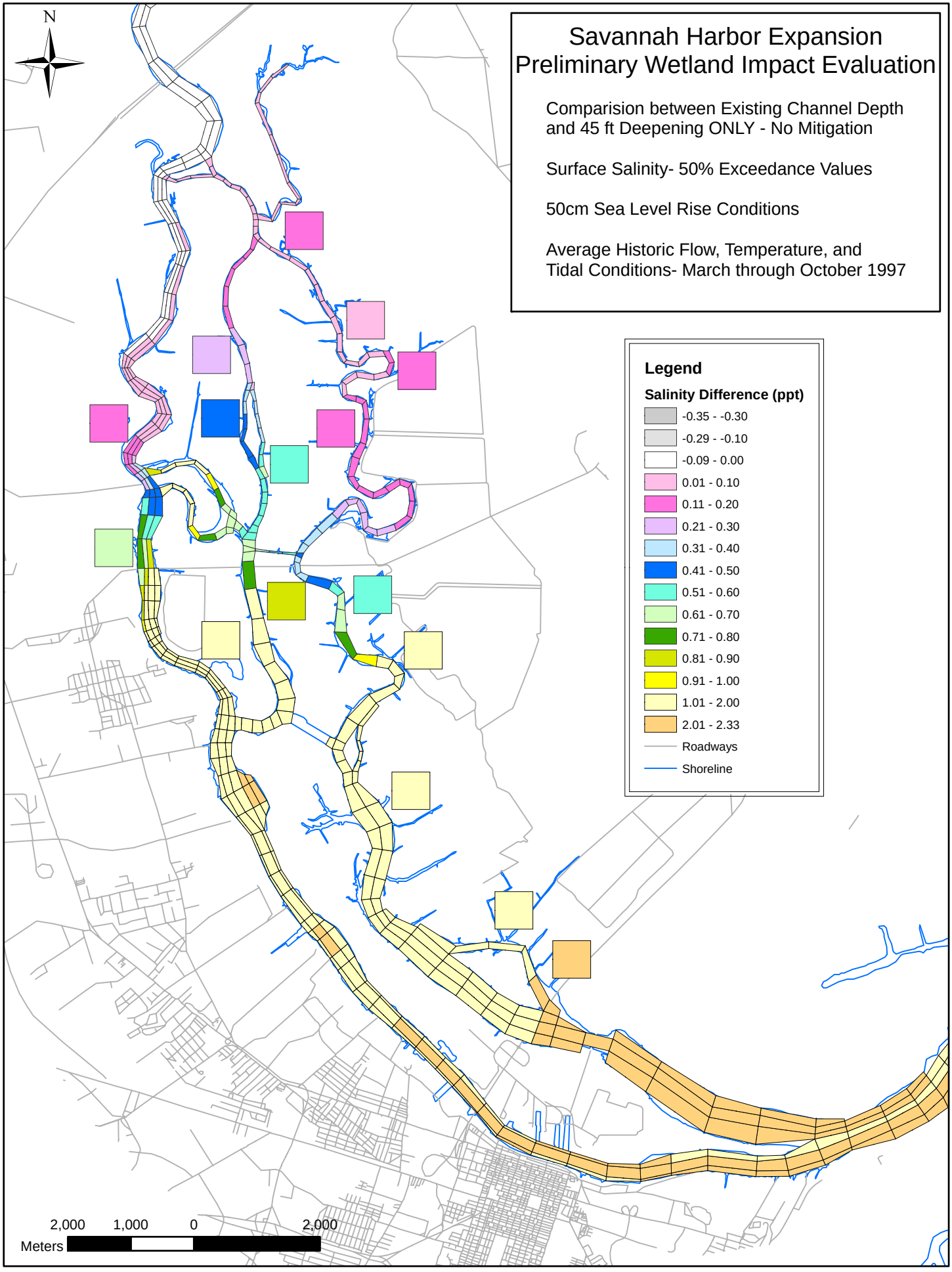
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 44 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
247.1 acres
299.0 acres
247.1 acres
417.6 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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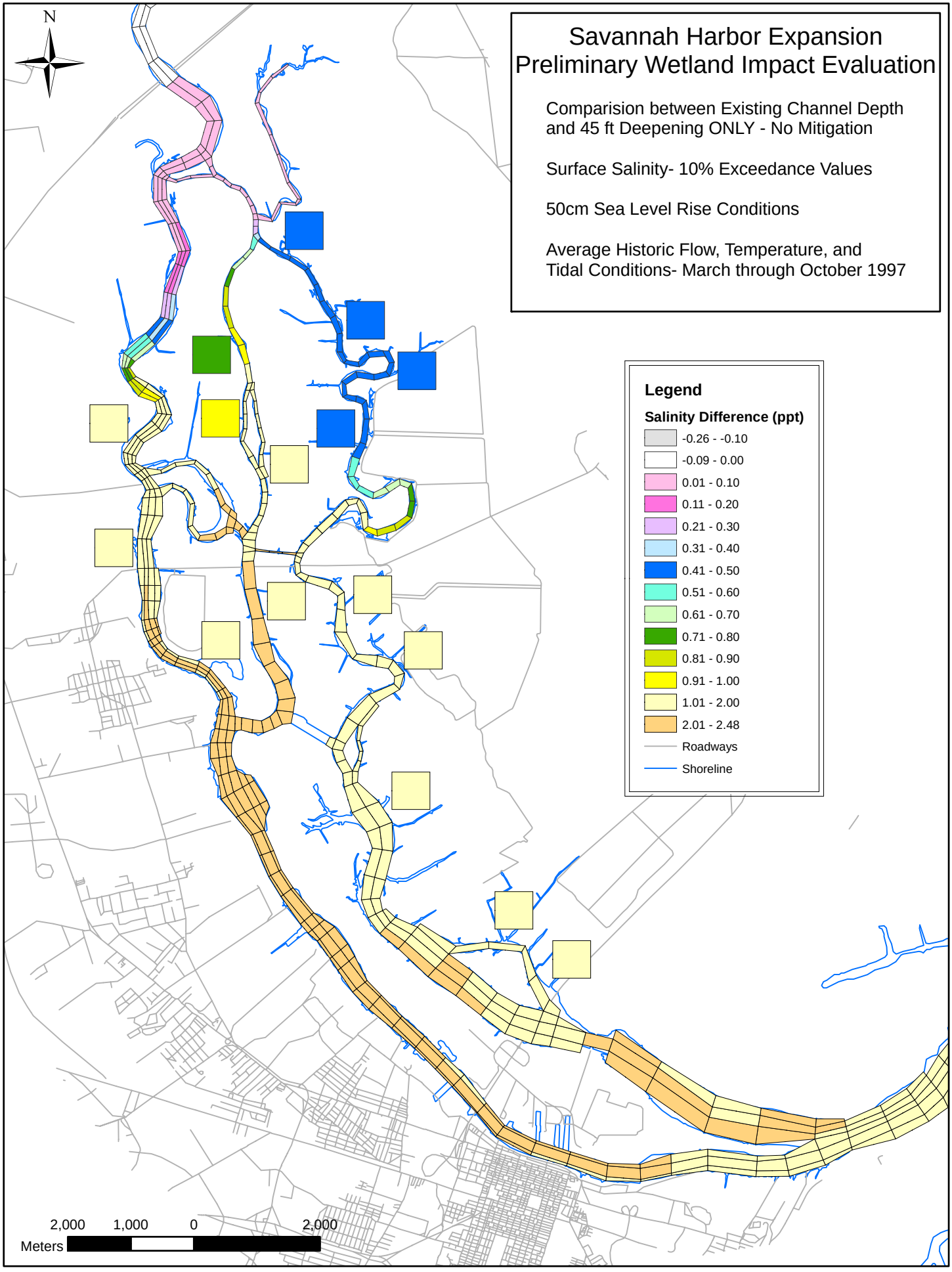
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.35 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.33
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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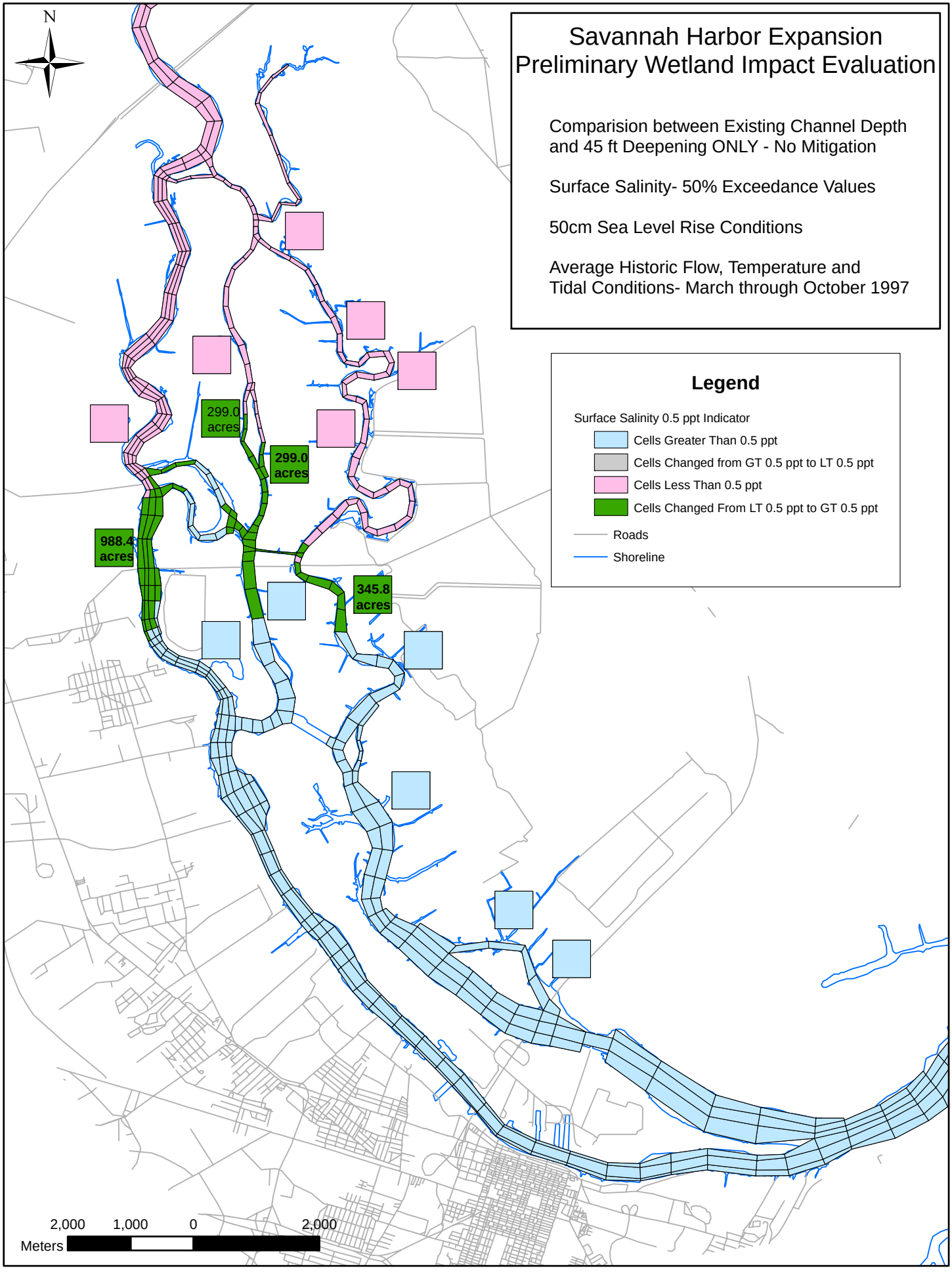
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.26 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.48
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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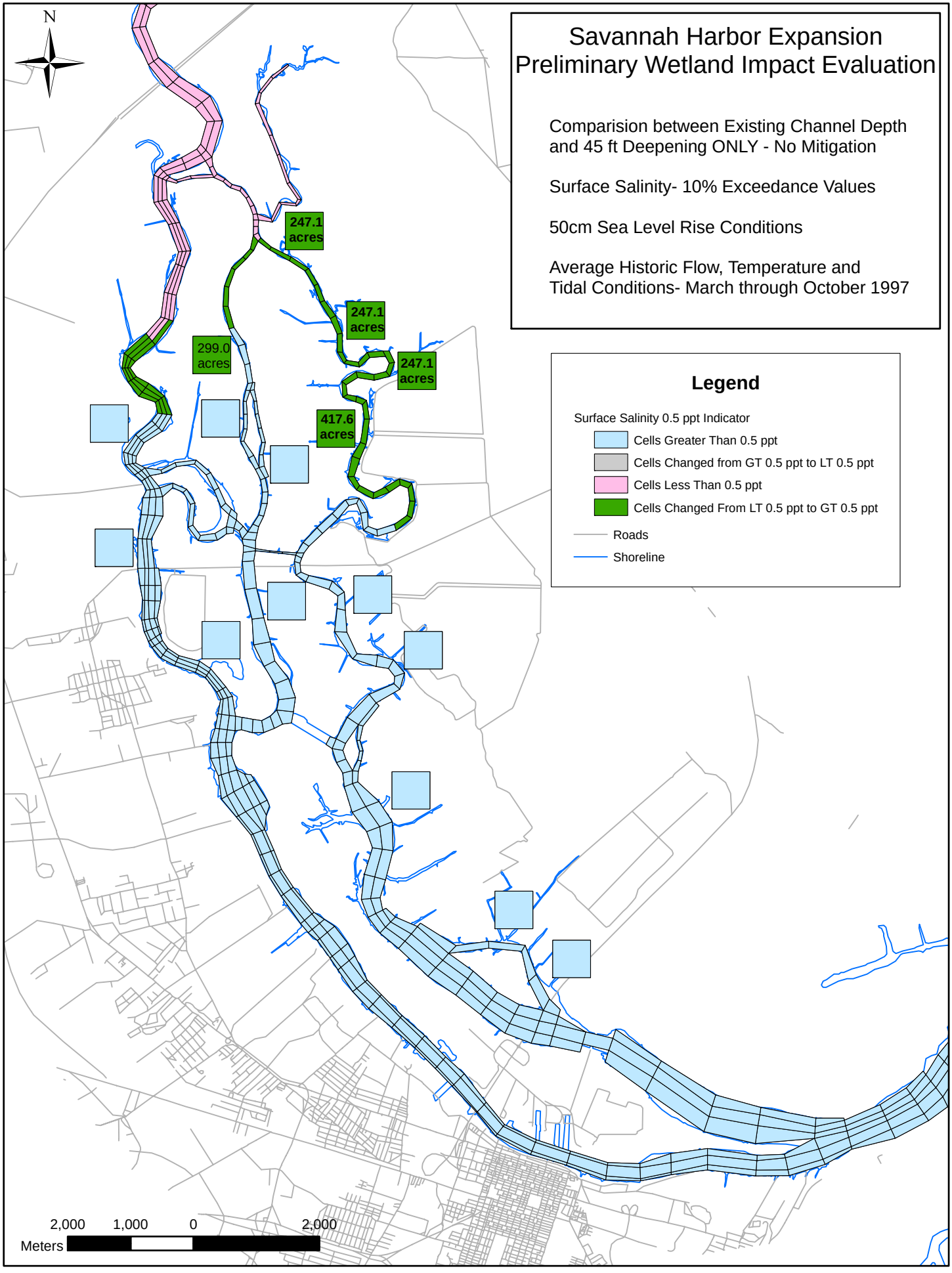
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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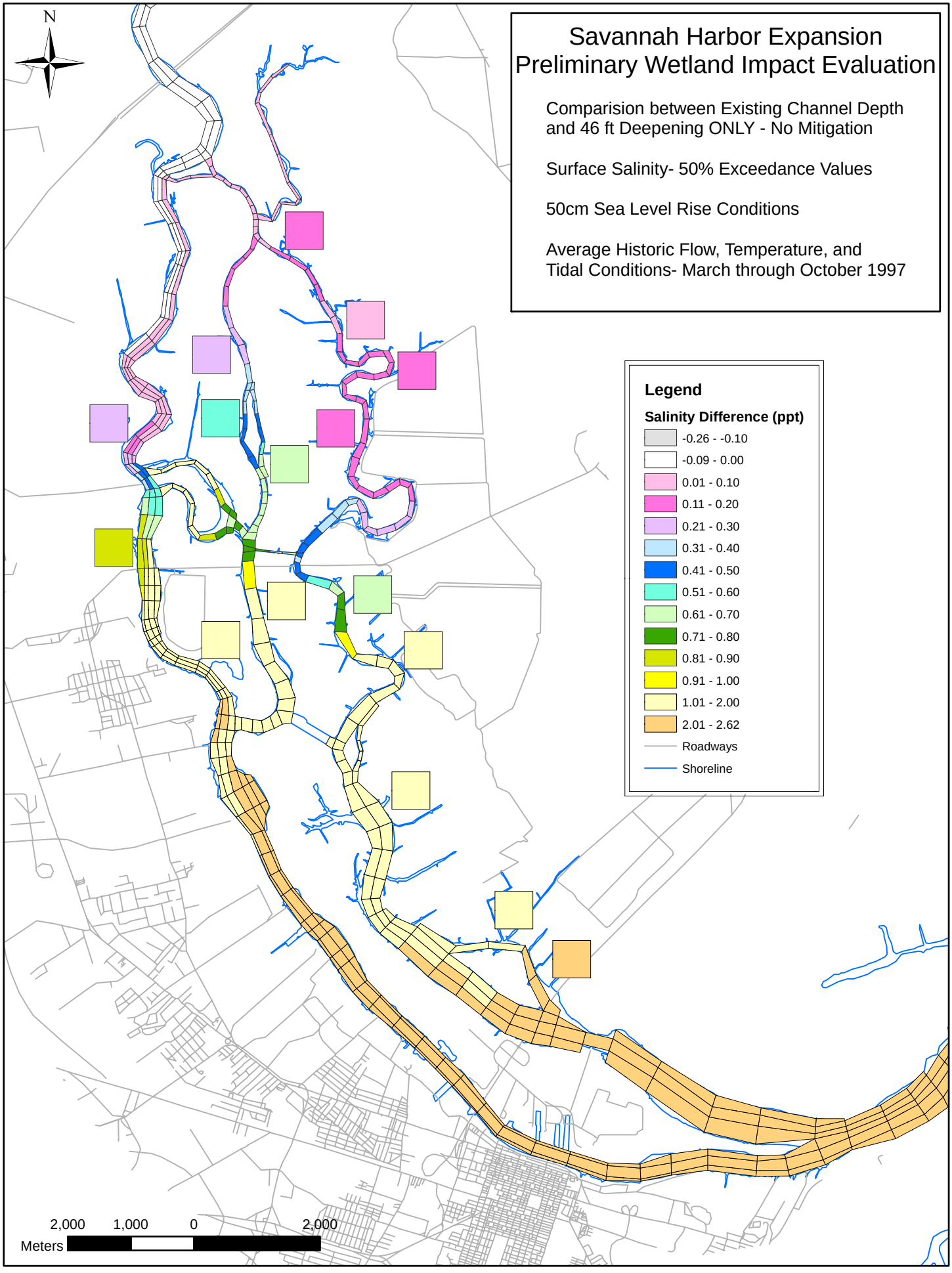
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 45 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
247.1 acres
247.1 acres
247.1 acres
299.0 acres
417.6 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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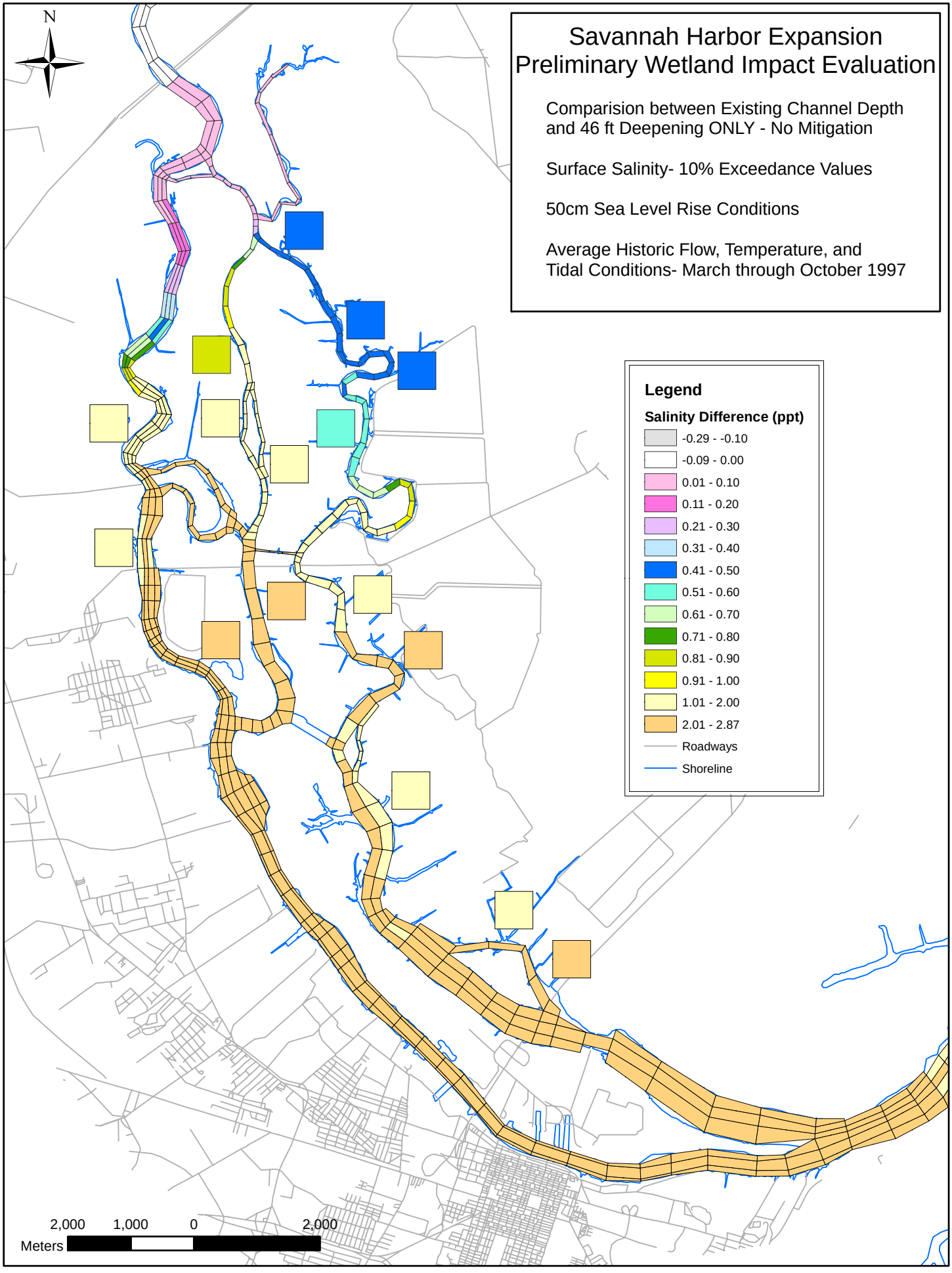
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.26 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.62
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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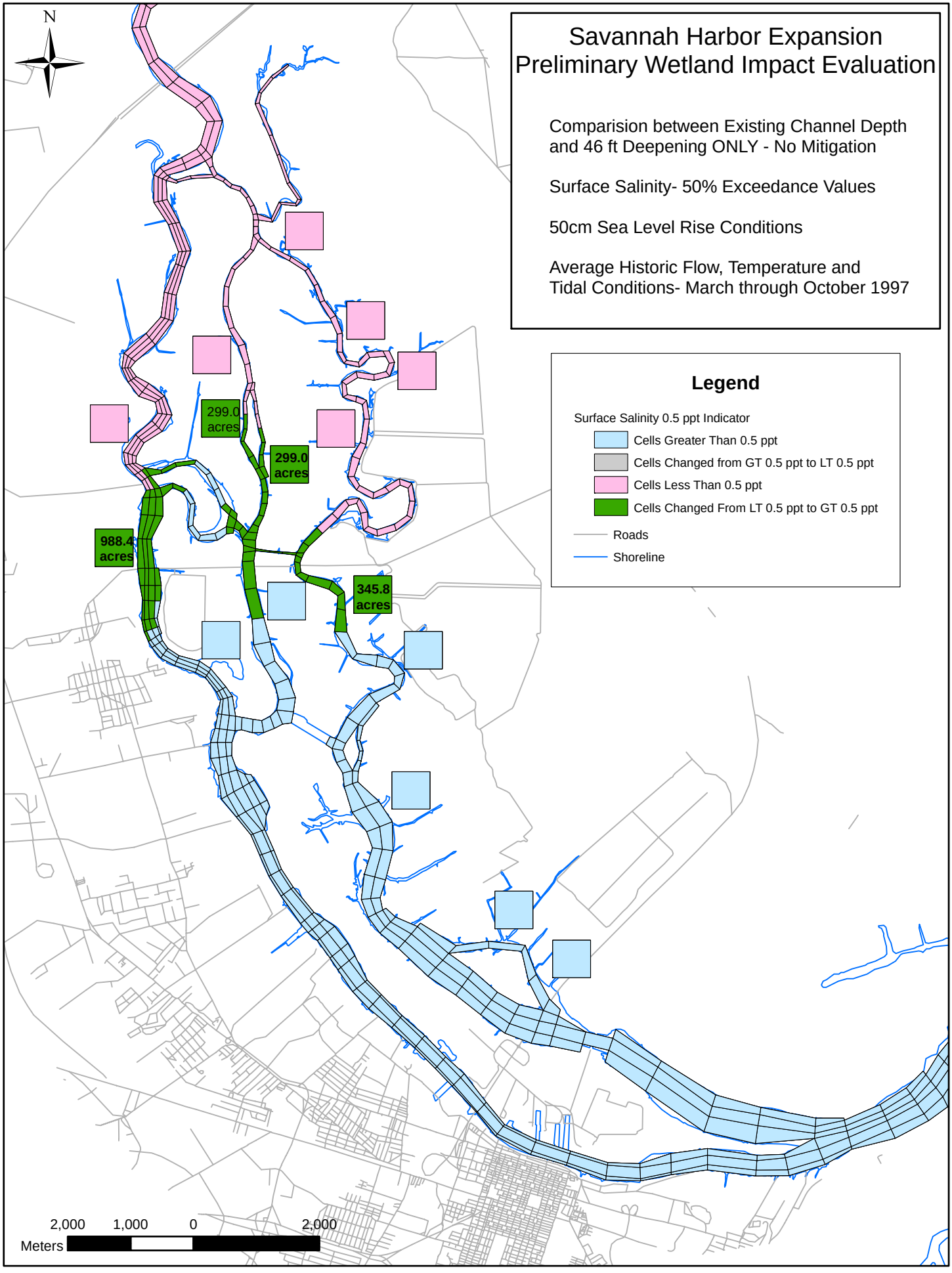
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 2.87
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007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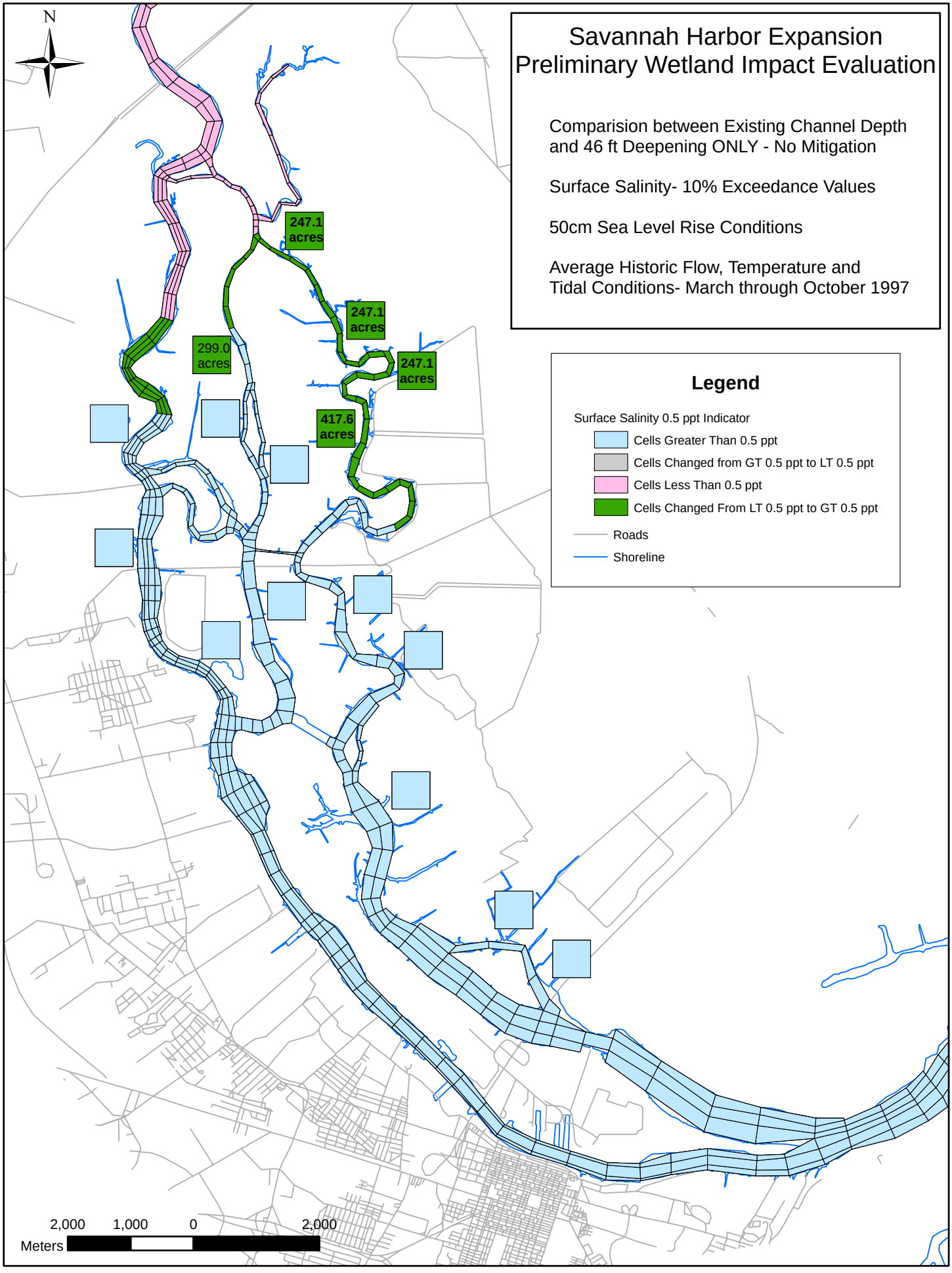
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007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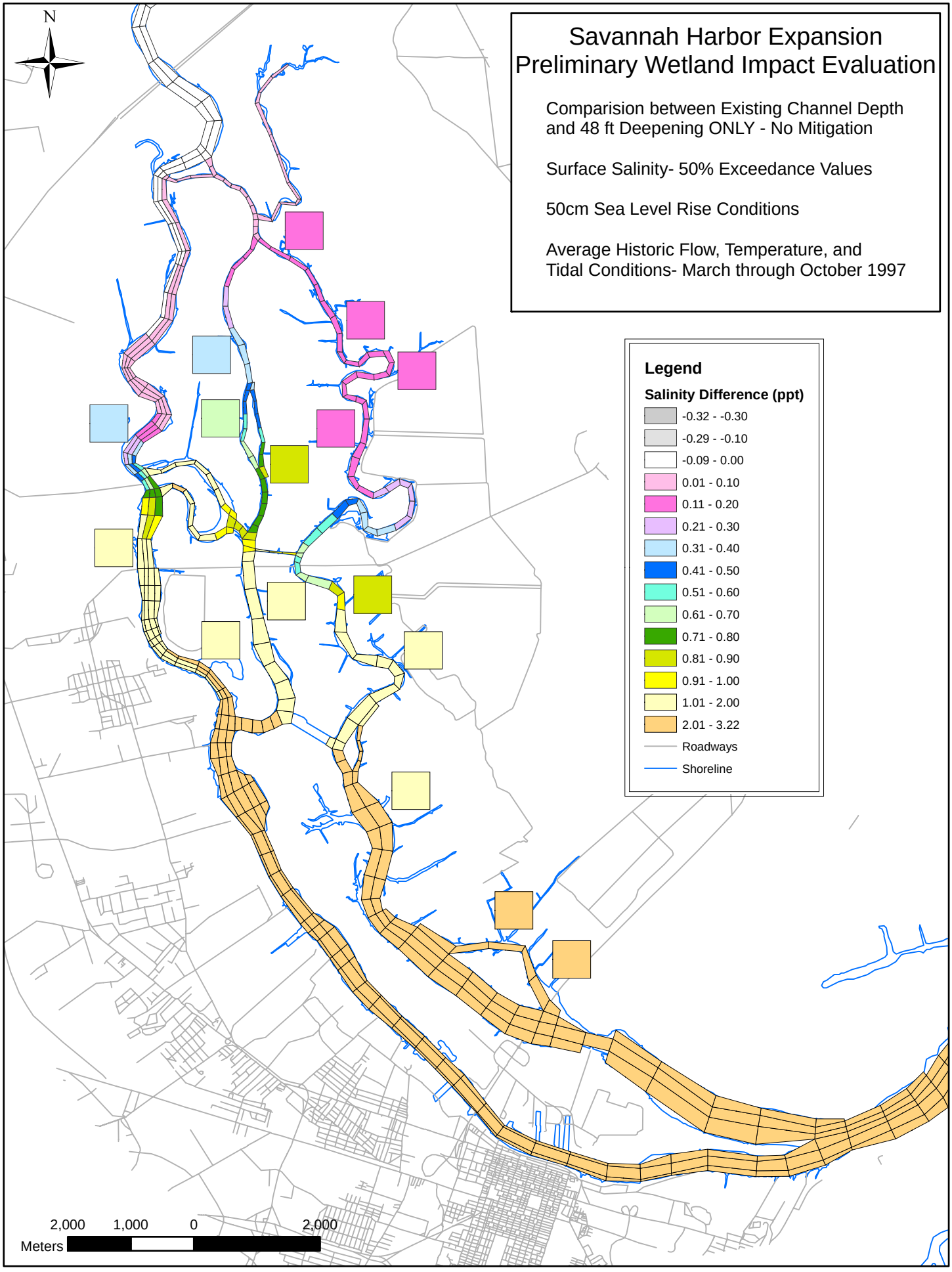
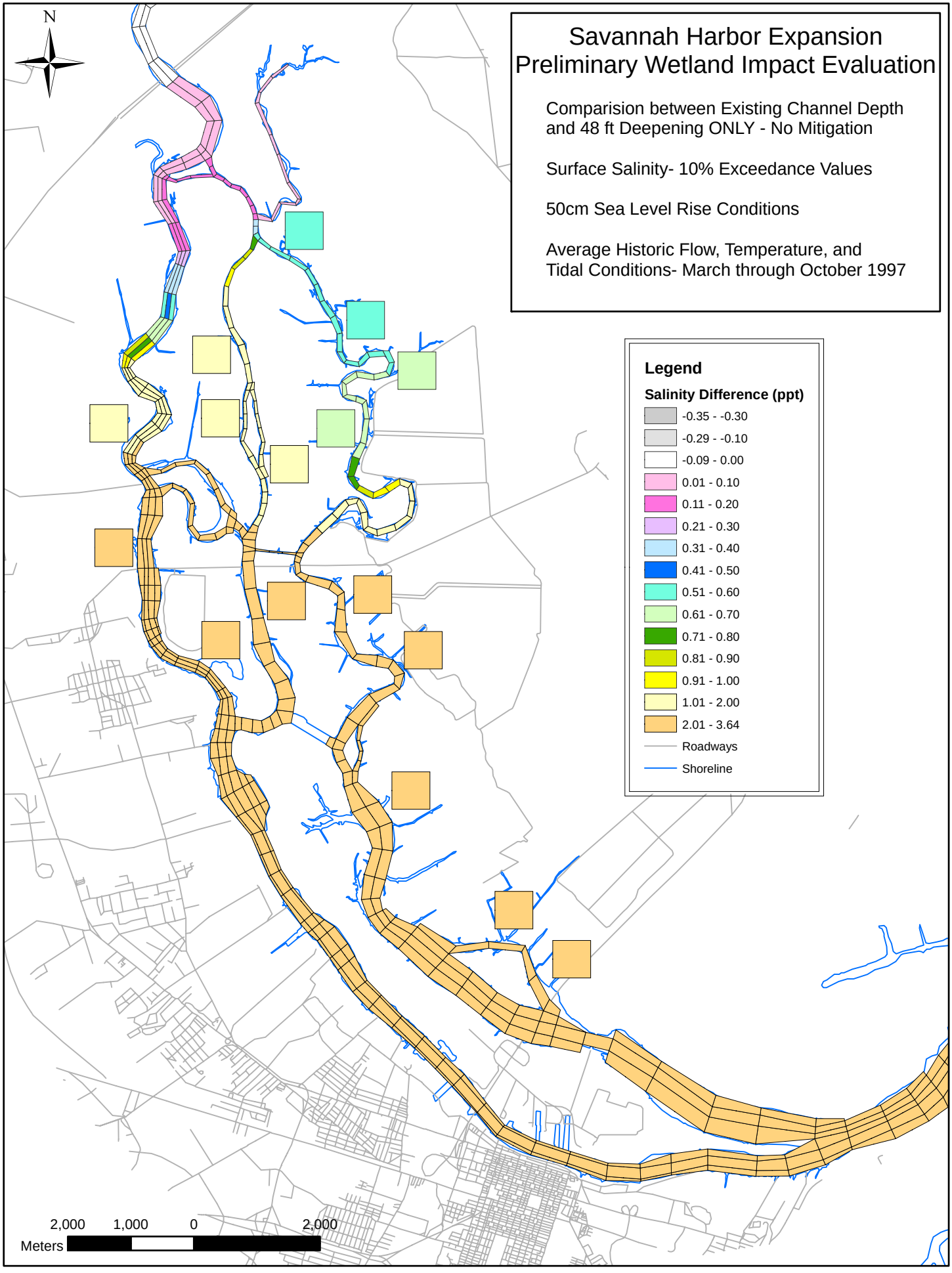
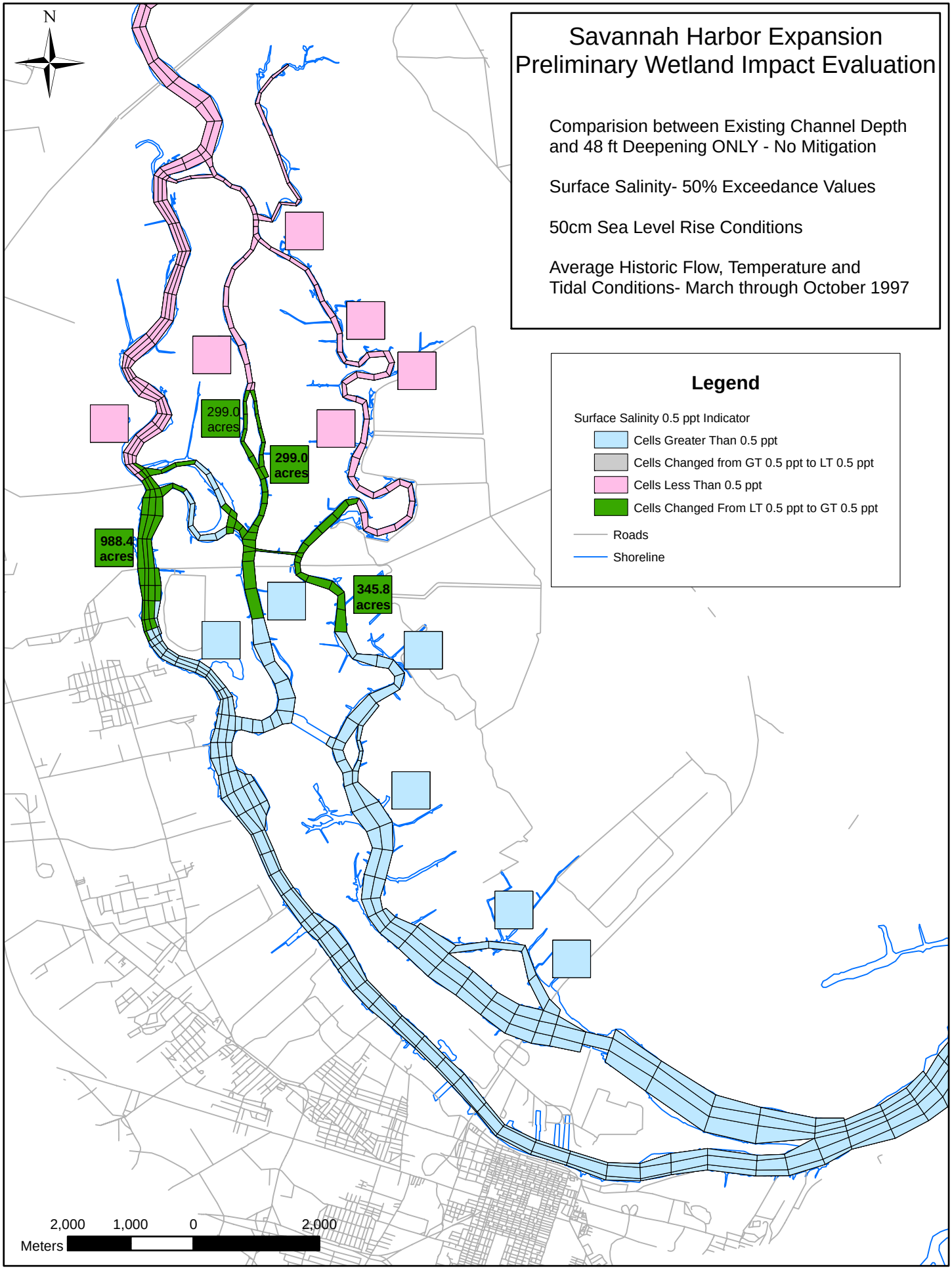
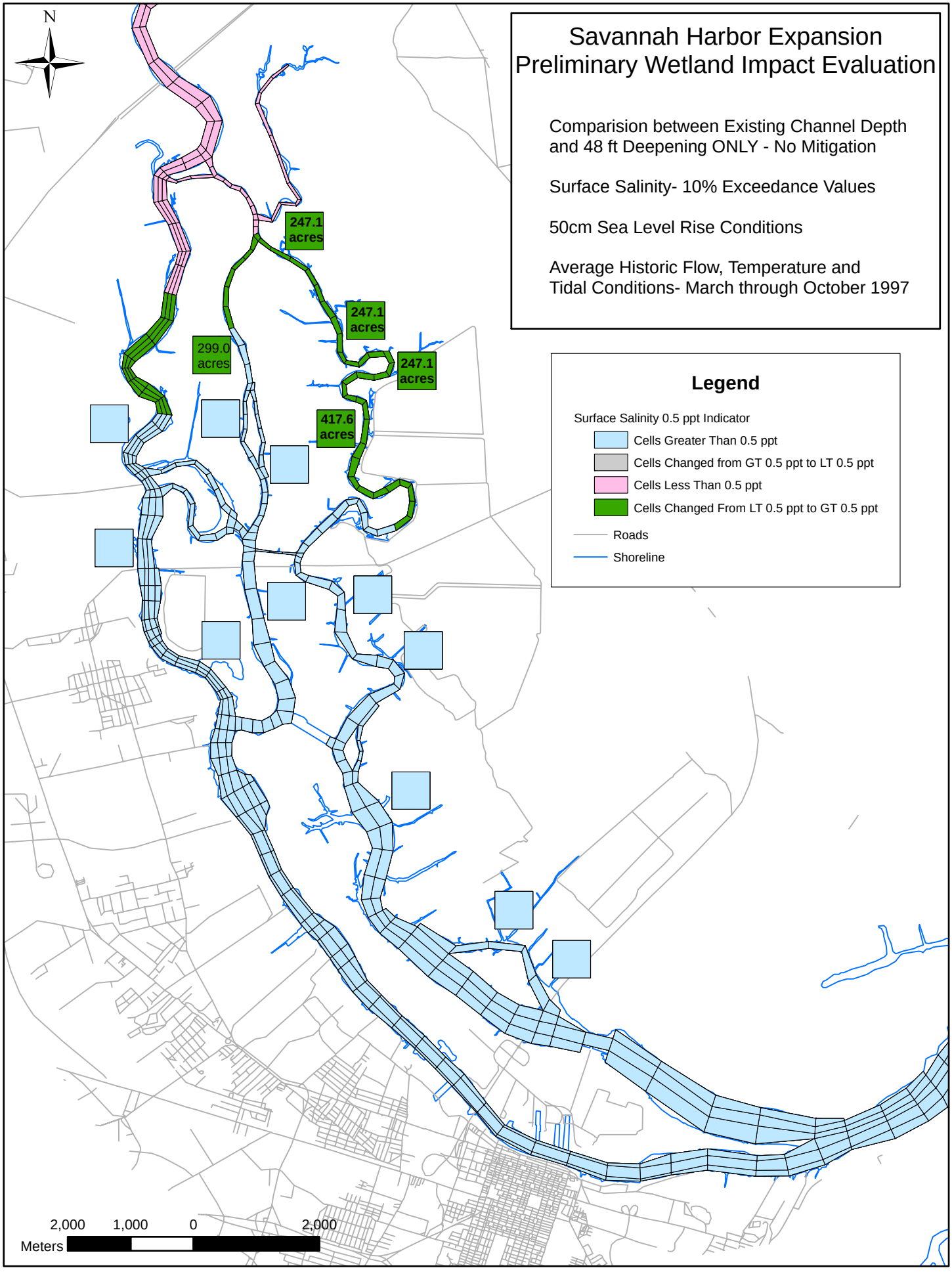
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 46 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
247.1 acres
247.1 acres
247.1 acres
299.0 acres
417.6 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.32 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.22
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature, and Tidal Conditions- March through October 1997
Legend
Salinity Difference (ppt)
-0.35 - -0.30
-0.29 - -0.10
-0.09 - 0.00
0.01 - 0.10
0.11 - 0.20
0.21 - 0.30
0.31 - 0.40
0.41 - 0.50
0.51 - 0.60
0.61 - 0.70
0.71 - 0.80
0.81 - 0.90
0.91 - 1.00
1.01 - 2.00
2.01 - 3.64
Roadways
Shoreline
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 50% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
299.0 acres
299.0 acres
988.4 acres
345.8 acres
2,000 1,000 0 2,000
Meters
January 2007


N
Savannah Harbor Expansion
Preliminary Wetland Impact Evaluation
Comparision between Existing Channel Depth and 48 ft Deepening ONLY - No Mitigation
Surface Salinity- 10% Exceedance Values
50cm Sea Level Rise Conditions
Average Historic Flow, Temperature and Tidal Conditions- March through October 1997
247.1 acres
247.1 acres
247.1 acres
299.0 acres
417.6 acres
Legend
Surface Salinity 0.5 ppt Indicator
Cells Greater Than 0.5 ppt
Cells Changed from GT 0.5 ppt to LT 0.5 ppt
Cells Less Than 0.5 ppt
Cells Changed From LT 0.5 ppt to GT 0.5 ppt
Roads
Shoreline
2,000 1,000 0 2,000
Meters
January 2007