

APPENDIX K

PUBLIC AND AGENCY COMMENTS ON JACKSONVILLE HARBOR NAVIGATION STUDY DRAFT INTEGRATED GENERAL REEVALUATION REPORT II AND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

INCLUDES USACE RESPONSES TO COMMENTS

JACKSONVILLE HARBOR NAVIGATION (DEEPENING) STUDY

DUVAL COUNTY, FLORIDA

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USACE Responses to Public and Agency Comments on the Jacksonville Harbor Navigation Study Draft Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement (IGRR II/SEIS). Please note that some comments have been summarized or consolidated. All comments received on the IGRR II/SEIS are included in this appendix.

Public Comments (Non-Governmental Organizations [NGO])

St. Johns Riverkeeper

- The Draft Supplemental Impact Statement (DSEIS) underestimates the environmental Impacts (including salinity, residency time, threatened and endangered species, sedimentation, storm surge, aquifer impacts, shoreline erosion, offshore disposal expansion, air quality).

Salinity

RESPONSE: The effects of proposed project alternatives on salinity are based on application of a Lower St. Johns River (LSJR) hydrodynamic model developed, calibrated, and verified by the St. Johns River Water Management District (SJRWMD). The model, refined for the Jacksonville Harbor deepening evaluations, provides the best available estimate of salinity changes that may occur with any of the project alternatives. As the results of additional modeling and analyses were compiled, it became apparent that salinity impacts reported in the DSEIS had overestimated potential impacts not underestimated potential impacts.

Residency Time

RESPONSE: The effects of proposed project alternatives on water residence time are based on application of a LSJR hydrodynamic model developed, calibrated, and verified by the SJRWMD. The model, refined for the Jacksonville Harbor Deepening evaluations, provides the best available estimate of water residence time changes that may occur with any of the project alternatives.

Threatened and Endangered Species

RESPONSE: In compliance with Section 7 of the Endangered Species Act, the USACE prepared a biological assessment that assesses the potential effects of the proposed project and is coordinating the effects of the proposed deepening with the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). The deepening would be constructed in accordance with the terms and conditions established by these agencies. Additional information on the US Army Corps of Engineers (USACE) effects determinations on threatened and endangered species can be found in Chapter 7 of the Supplemental Environmental Impact Statement (SEIS).

Sedimentation

RESPONSE: The effects of the project on currents and sediment transport, shoaling, and erosion are presented in the Adaptive Hydraulics (AdH) hydrodynamic and sediment transport modeling and analysis located in Appendix A- Engineering, Attachment G. Hydrodynamic Modeling for Ship Simulation, Riverine Channel Shoaling and Bank Impacts. The AdH sediment transport model simulated the bed level changes for both existing and with-project (47-ft depth) conditions. The with-project condition results in an overall increase in shoaling volume by approximately twenty percent. The AdH hydrodynamic and sediment transport modeling and analysis provides the best available estimate of accretion/erosion changes that may occur with the project.

Storm Surge

RESPONSE: The effects of the proposed project on storm surge are based on the Federal Emergency Management Agency's (FEMA) Georgia Northeast Florida storm surge study methodology. The application of the Advanced Circulation (ADCIRC)+Simulating Waves Nearshore (SWAN) hydrodynamic and wind-wave models, refined for the Jacksonville Harbor Deepening evaluations, represents the best available estimate of storm surge changes that may occur due to the proposed project.

Aquifer Impacts

RESPONSE: The USGS groundwater modeling looked at several possible geologic scenarios to test the susceptibility of the surficial aquifer to salinity impacts. The geologic scenarios ranged from simple to complex based on uniform subsurface conditions and available information, not actual conditions. We know that the rock for the surficial aquifer is not uniformly distributed throughout the area and that the permeability varies. Therefore, the modeling using the simplified geology over estimates the impact compared to actual conditions. Even using the uniform distribution of rock and permeability, the modeling shows a maximum impact that extends an additional 75 feet to the north on USGS section d. This area is adjacent to the channel and has been exposed to high salinity over a very long time so that an increase of 4 parts per thousand (ppt) is not significant. Results from testing this area reported in 1983 showed chloride concentrations over 2800 mg/L in the limestone unit. (Spechler and Stone, 1983, "Appraisal of the Interconnection between the St. Johns River and the Surficial Aquifer, East-Central Duval County, Florida).

Shoreline Erosion

RESPONSE: The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally

show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition.

Offshore Disposal Expansion

RESPONSE: As part of the deepening study, the USACE has determined that placement of dredged material within an Ocean Dredged Material Disposal Site (ODMDS) would be the least- cost disposal method. Dredged material may also be placed at Buck or Bartram Islands, the beach placement location south of the river mouth, and the nearshore next to the beach placement location. The USACE also continues to investigate additional beneficial uses of dredged material. The US Environmental Protection Agency (USEPA) has prepared a draft EIS on a new ODMDS that would have sufficient capacity to accept dredged material resulting from the deepening. The draft EIS can be obtained through the USEPA.

Air Quality

RESPONSE: The air quality analysis provides the most detailed inventory of existing conditions and the most detailed estimate of future emissions ever conducted for the Jacksonville Harbor. All available data has been used in estimating the current and future discharges. The future discharges are based on the available data, current and upcoming regulatory limits, and port growth projections developed as part of the USACE National Economic Development analysis performed for this SEIS.

Air emissions were estimated from nine different sources directly associated with operations of the harbor. The total emission load included emissions from the three JAXPORT terminals and the 13 private terminals located within the harbor. The emission inventory included the ocean-going vessels that call at various terminals within the harbor, the tugs that assist these vessels, the landside equipment that moves the cargo in the terminals, ancillary vessels which operate in the harbor (dredges and river ferry boats), and equipment used to move containers out of the harbor area. The analysis considered six categories of pollutants, known as "criteria pollutants": particulate matter less than ten microns and two and a half microns in diameter (PM_{10} and $PM_{2.5}$), sulfur dioxide, nitrogen oxides, hydrocarbons, and carbon monoxide, carbon dioxide, and volatile organic carbons. In addition, the analysis included a limited assessment of air toxins, and assessed the presence of sensitive receptor sites within 1500 ft of the borders of JAXPORT.

The Jacksonville region is in attainment of USEPA air quality standards. This means that concentrations of criteria pollutants are below the levels established by the National Ambient Air Quality Standards (NAAQS). Estimated future emissions do not alter that air quality attainment status. The analysis provided by the USACE is more than adequate to assess the likely effects of additional vessel traffic and cargo activity with a deepened Jacksonville Harbor.

- The DSEIS overstates the economic impacts (including overstating the benefits, created jobs, justification of the Locally Preferred Plan).

RESPONSE: The regional economic development account displays changes in the distribution of regional economic activity (e.g., income and employment). It is one of the four accounts outlined in the USACE Principles and Guidelines (P&G). The first two accounts are national economic development and environmental quality, one or both of these are required for determining the recommended plan. The other two accounts, regional economic development and other social effects, are discretionary; these accounts are used to show beneficial effects of alternatives. They are not used to determine or justify a recommended plan. As such, the information on projections of jobs has been removed from the report and replaced with a qualitative analysis.

- On-going maintenance costs have been ignored.

RESPONSE: Section 6.5 of the main report as well as Appendix J (DMMP) discusses the on-going maintenance costs.

- The DSEIS proposes a mitigation plan that is woefully inadequate.

RESPONSE: The mitigation plan (Appendix E) has been revised in accordance with the results of the environmental modeling and effects assessment. The plan is being coordinated with the regulatory agencies. Even though the impact of the deepening and widening would mostly be too small to quantify using the Uniform Mitigation Assessment Method (UMAM), the USACE proposes mitigation that would more than compensate for expected impacts at the level of resolution of UMAM. In addition, the USACE would monitor the river system to provide data for assessment of change due to channel deepening and changes due to other factors. In the unlikely event that impacts would exceed those predicted and require more mitigation than performed, the USACE would consider additional mitigative measures in coordination with regulatory agencies.

- The U.S. Army Corps of Engineers is denying the public the opportunity to engage in meaningful public participation due to lack of detail, depth of analysis, and critical information and data that is missing from the DSEIS.
- RESPONSE: The USACE conducted a number of presentations, workshops, and meetings involving the public and resource agencies during the months prior to release of the DSEIS on May 31, 2013. The original comment due date of July 15 for the DSEIS was ultimately extended to October 24, 2013. Results of modeling demonstrated that impacts would be less than that originally anticipated.
- Risky fast-tracking of the report has been a major reason that the analysis has so far been inadequate and incomplete.

RESPONSE: All analyses have been completed. Additional time was provided for the public to review and comment on this information. Subsequent modeling and analysis indicates that project impacts stated in the initial DSEIS were over-estimated. The USACE will consider comments on this FSEIS.

Additional St. Johns Riverkeeper comments received on October 24, 2013.

- Significantly underestimates the environmental impacts, now to an even greater degree than in previous drafts.

RESPONSE: The Final SEIS (FSEIS) better quantifies potential environmental impacts identified in the DSEIS and includes analyses not previously completed. The hydrodynamic model used to evaluate salinity, circulation, and water levels is the best available for the LSJR. The model was set up specifically to include appropriate representation of bathymetric changes due to channel deepening. Ecological effects evaluations were based on the results of the hydrodynamic model and reflect changes concomitant with the magnitude of predicted physical changes.

- Continues to overstate the economic benefits while failing to address the local cost/benefit analysis.

RESPONSE: The economic benefits are based on National Economic Development (NED) benefits which are transportation cost savings benefits. Local benefits such as jobs are Regional Economic Development (RED) benefits and are not used to determine the recommended plan.

- Slashed an already woefully insufficient mitigation plan from \$80 million to \$27 million.

RESPONSE: As previously stated, the base mitigation plan has been revised in accordance with the results of the environmental modeling and effects assessment. The plan is being coordinated with the regulatory agencies. Other mitigation options (i.e. eelgrass and wetland restoration opportunities) will continue to be considered. The plan can be found in Appendix E. In addition, the USACE would continue to monitor the river system to determine actual impacts. In the unlikely event that impacts would be more than predicted and more than that mitigated for, additional mitigation measures would be considered (see Appendices E and F).

- Denies the public of the opportunity to engage in meaningful public participation due to the piecemeal release of critical and often inconsistent information without tracking and clearly dating revisions or following conventional protocol.

RESPONSE: The accelerated schedule for this complex study has been challenging for stakeholders and the USACE. However, the USACE did conduct a number of presentations, workshops, and meetings involving the public and resource agencies

during the months prior to release of the DSEIS on May 31, 2013. The most recent public meeting was held on September 24, 2013, and all studies were completed and made available to the public by September 30, 2013. The original comment due date of July 15 for the DSEIS was ultimately extended to October 24, 2013.

- Fails to provide a thorough and complete analysis of the potential impacts or to sufficiently answer and resolve outstanding questions and concerns voiced by stakeholders and other state and federal agencies.

RESPONSE: The USACE used the best available EFDC hydrodynamic model for evaluation of salinity, circulation, and water levels in the LSJR. The model was set up specifically to define the proposed bathymetric changes due to channel deepening. The ecological models and evaluations and the tributary hydrodynamic models draw from the results of the EFDC model and represent the best available methods information for comparative assessment of potential ecological effects of channel deepening.

Additionally, the USACE hosted several forums to collect the questions, comments and concerns of Federal, State, local and public stakeholders. All comments collected have been carefully considered and the USACE has provided responses. All responses to issues raised by the public and the agencies can be found in this Appendix.

- “The evaluation of the project alternatives’ effects on natural communities as a result of the movement of higher salinity water upstream in the LSJR and tributaries relies on the use of hydrodynamic and ecological models. The hydrodynamic model reports (Taylor 2011, 2013b, 2013c) present error statistics for the EFDC and CE-QUAL-ICM models. Similar error statistics cannot, however, be calculated for the ecological models. *This represents an uncertain risk associated with evaluation of the ecological model results.*” (p. 285)

RESPONSE: The models used were the most current and detailed models available for the lower St. Johns River. The commenter is accurate with his statements concerning error statistics and expression of risk.

- “Recorded conditions for streamflow, rainfall, land use, and other factors during a six-year period (1996 – 2001) provide input data for the hydrodynamic models. Future condition hydrodynamic model simulations further rely on assumptions about the rate of sea level rise, quantity of water withdrawal from the middle St. Johns River, patterns of land use, and other factors. Actual conditions will deviate from those used to drive the models. *These deviations introduce additional uncertainty in the models’ ability to predict future conditions and impacts.*” (p. 285)

RESPONSE: The commenter is correct in stating that future conditions will likely deviate from those used to drive the models. No model can precisely predict future conditions. However, models were set up with reasonable and consistent estimates of future conditions based on the SJRWMD projection of water withdrawal and the USACE Sea

Level Change (SLC) guidance and therefore allow comparison of project-induced changes relative to a without-project condition.

Additionally, in order to assure the models were not established in a manner representing conditions where effects would be difficult to determine, conservative flow conditions of consecutive dry years of rainfall and 1995 land-use enabled boundaries were utilized. These represent higher than average stress scenarios in order to assure that the model predictions represents the best opportunity to see changes to the system as a result of the project. Despite the development of these conservative boundary conditions to find widely diverse and high degree of impact, the salinity changes and associated ecological modeling represented only slight changes within a very limited geographic area.

- In reference to the EFDC model results, the consistent use of the 10th, 60th and 90th percentiles to create an average for predicated changes in parameters (i.e. salinity, residence time) is unconventional and confusing. It appears that upper and lower predicted data is ignored. Why not average all the percentiles to a mean, or find a median?

This practice is poor statistics at best. The upper and lower 10th percentiles include very important information, especially in light of extreme events. The changes to the predicted values are probably large in the upper 90-100th percentiles. These extreme time/salinity events present the most harm. Even in an undisturbed natural system, times occur when salinities in estuaries become very high. In some areas they have been linked with seagrass die-off and general ecological decline for the duration of the event and for a time after (Zieman et al., 1999, Carlson et al., 1994).

These events may be naturally occurring and rare, but an increase in the frequency or duration that may occur from a dredging depth of only a few ppt or occurrences/decade can be catastrophic to a mixed brackish system. This information is buried in that top 91-100th percentile. Ignoring it is unconventional and irresponsible.

RESPONSE: The report provides statistics for 10th, 50th (not 60th) and 90th percentile data. The 50th percentile provides the median. Furthermore, it is possible to ascertain parameter values for other percentiles, including those less than 10% or greater than 90%, by referring to the figures in the report.

- UMAM does not have the capacity to accurately and precisely quantify damaging impacts. However, that does not mean that negative impacts will not occur, raising serious concerns about the shortcomings of the overall project analysis and the likelihood of damage to occur beyond the quantifiable threshold identified in the DEIS.

RESPONSE: The USACE and the regulatory agencies have relied on, and continue to rely on relevant studies to determine environmental impacts potentially caused by the proposed deepening. Per the results of these studies, the impact of the deepening and

widening would mostly be too small to quantify using the Uniform Mitigation Assessment Method (UMAM). Never-the-less, the USACE proposes mitigation that would more than compensate for expected impacts at the level of resolution of UMAM. In addition, the USACE would continue to monitor the river system to determine actual impacts. In the unlikely event that impacts would be more than predicted and more than that mitigated for, additional mitigative measures would be considered. In accordance with Florida State Statutes, UMAM is the required tool to use in determining mitigation acreages.

- The DSEIS minimizes the ecological shift in species, populations and communities that will occur. The DSEIS contains inconsistencies and questionable statements regarding the potential impacts, calling into question the accuracy of the models used to make the predictions. The DSEIS dismisses project-related increases in salinity as being much smaller than those natural variations in salinity that the river naturally experiences. While it is true that salinity levels naturally change by drought, etc., these changes are acute and the river biota is adapted to them. The project-related increases are chronic; i.e., long-term. They shift the baseline condition to a higher-saline regime such that acute, short-term natural changes in salinity have greater impact. In addition, forested wetlands are impacted by very small changes in salinity and those impacts may take years to see.

RESPONSE: The EFDC model predicts small, project-induced changes in salinity. The ecological models, driven by the predicted salinity changes, predict relatively small effects consistent with the salinity change results. Because salinity-based changes in forested wetlands may occur over long periods of time, the proposed monitoring program will be designed to assess such changes, should they occur, and estimate the extent to which they are caused by natural or anthropogenic alterations of the river system, and if possible whether those changes can be ascribed to the most recent (currently proposed) channel deepening.

The DSEIS provides this information for important context regarding environmental changes occurring simultaneous to with- and without project conditions. The model results indicate that project-specific salinity changes is not significant enough to be additive to other non-project stressors. Additionally, the project salinity “signal”--where changes due to the project are no longer detectable--occurs just south of the Buckman Bridge. This area is already highly stressed due to ongoing increases in salinity, and thus would not likely to be additionally impacted by the project.

- When discussing predicted salinity changes, no detail is provided on the changes in salinity in the layers of the stratified system or the ultimate depth and shape of the salt wedge present in the St. Johns River. It is simply stated that the surface salinities will change by far less than 1ppt. We wouldn't expect the top layer of water to change that much in any major shift in the system.

Is the salinity change predicted an average of all depths?

Is it the change at the surface?

Does the salt wedge remain static through the model, or are there changes in the salinity at the base of the riverbed/water interface?

RESPONSE: The EFDC salinity model is a three-dimensional model with six vertical layers. The salinity model report, included as an appendix to the DSEIS, describes and illustrates top, bottom and depth averaged salinity. The model's representation of a "salt wedge" is not static. Various analyses used depth-averaged, bottom layer and top layer salinities as appropriate and reported those uses as part of methods discussions and/or as part of results presentations.

- The model used has the ability to be a three dimensional flow model, yet no three dimensional analysis is available, and the third dimension is simply averaged. That is uninformative. If there truly is no change in the layers in the stratified river, then state that. If not, then provide the temporal and spatial shifts in the salt water wedge as it interacts with a deeper channel. If the modelers are simply treating the river as a volume with one set of properties as an initial modeling state, that is an oversimplification of a salt-wedge estuary.

RESPONSE: As described in the EFDC model report (included in Appendix A to the DSEIS), the model simulates vertical salinity structure. The report presents results illustrating vertical differences in salinity in the LSJR. Various analyses used depth-averaged, bottom layer and top layer salinities as appropriate and reported those uses as part of methods discussions and/or as part of results presentations.

- In addition, we have concerns regarding the following inconsistency. The stated change in the surficial aquifer system, as modeled by the USGS indicates an increase of 4 ppt in the highly conductive zones of the aquifer. Yet changes in the river stated in the report are less than 0.1 ppt. How is this possible?

RESPONSE: One USGS groundwater simulation showed the 4 ppt salinity increase to the surficial aquifer system adjacent to the channel would be the result of a laterally continuous confining layer above the rock of the surficial aquifer and the increased exposure of the rock by deepening. The possible continuous confining layer to the surficial aquifer prevents infiltration of freshwater from the surface that allows increased volumes of saline water to penetrate the rock and increase the salinity in the immediate vicinity of the channel.

- Was the USGS considering a stratified river volume, where the bottom of the river increases 4 ppt? This would be a significant increase to benthic flora and fauna that are sessile and cannot move with the shift in the river salinity. If the salinity on the bottom

has the possibility to increase by 4 ppt in this portion of the river, what are the true possibilities for this bottom salt layer in the rest of the river?

RESPONSE: The USGS used the lowermost EFDC channel salinity output from the channel model to start their simulation. The lowermost salinity would be the one to contact the rock.

One USGS simulation scenario showed the 4 ppt salinity increase to the surficial aquifer system immediately adjacent to the channel as the result of a laterally continuous confining layer above the rock of the surficial aquifer and the increased exposure of the rock by deepening. The modeled upper confining layer prevented infiltration of freshwater from the surface that allowed increased saline water to penetrate the rock in the immediate vicinity of the channel. The 4 ppt increase in groundwater concentration was due to the reduced surface infiltration from external freshwater sources, not to variation in the river salinity.

- Increases in residency time will create additional health risks due to the potential increase and duration of toxic Harmful Algal Bloom events.

RESPONSE: The EFDC model simulations indicated that the proposed project will cause only slight changes in water age. The deepening is unlikely to cause increased frequency or duration of harmful algal blooms due to water age changes. Evaluation of CE-QUAL-ICM water quality model chlorophyll a results indicates the proposed project will not increase the frequency of algal blooms.

- The DSEIS conclusion that there will be no significant increase in ship wake or shoreline erosion from the proposed project is incorrect. It is based upon the use of a predictive model that is not typically used by the USACE for such analysis, nor considered standard practice for such analysis. The model also fails to properly consider changes in the with-project design vessel.

RESPONSE: The model used for ship wake analysis is the vessel movement component of ADH. ADH is a USACE certified software supported by the Surface Water Modeling System (SMS) and is considered the successor to the RMA-suite of hydrodynamic models. ADH is a state-of-the-art ADaptive Hydraulics Modeling system developed by the Coastal and Hydraulics Laboratory, ERDC, USACE, and is capable of handling both saturated and unsaturated groundwater, overland flow, three-dimensional Navier-Stokes flow, and two- or three-dimensional shallow water problems. One of the major benefits of ADH is its use of adaptive numerical meshes that can be employed to improve model accuracy without sacrificing efficiency. It also allows for the rapid convergence of flows to steady state solutions. ADH contains other essential features such as wetting and drying, completely coupled sediment transport, and wind effects. A series of modularized libraries make it possible for ADH to include vessel movement, friction descriptions, as well as a host of other crucial features. The parameters of the design vessel that will use the deepened channel in the constructed project were used for the analysis of the future with-project condition.

- The USACE analysis is described in Appendix A, Attachment G (AdH – Hydrodynamic Modeling for (Riverine) Channel Shoaling Addendum; August 2013).

It relies upon a hydrodynamic model that is otherwise used to evaluate tidal currents and water elevations. It was not calibrated for the evaluation of ship wakes, and there is no indication of the model's ability to accurately predict ship wake.

In contrast, traditional and accepted engineering analysis predicts the size of ship wake (akin to wave height) from empirical formulae that describe the vessel characteristics, speed, and the channel dimensions – such as USACE utilized in its evaluation of the Savannah Harbor deepening project. These include formulae developed by the US Naval Academy. (D. Kriebel & W. Seelig, “An empirical model for ship-generated waves”. Proc., Fifth Int'l. Symposium on Ocean Wave Measurement and Analysis. 2005. *Need to properly place in the final document.*)

For the DSEIS, the USACE analyses considered only a single design vessel of 1140-ft length with draft of 37-ft (existing conditions at 40-ft depth) and 44-ft (with-project conditions at 47-ft depth). For this vessel, moving at 7 knots at various tidal regimes, the DSEIS concluded that “the ship wake and affect [sic] on water stages at the river banks tends to diminish under the with-project condition” and that both increases and decreases in ship wake, water stages, and near-bank currents are predicted for the with-project condition. Very large increases in predicted with-project currents (over 3 ft/sec) were shown to be very sensitive to sampling locations within the model. (App. A, Att. G., final two pages).

The larger and deeper ship sizes accommodated by the project will result in larger (not diminished) ship wakes; and a ten-fold difference in predicted water velocities within a very short distance along the riverbank is not consistent with natural observations.

Instead, for the single 1140-ft design vessel moving at a speed of 7 knots, traditional analysis predicts that the size of the ship wake would increase by 16% from the without- to with-project conditions. This is not an insignificant change. *Further, traditional analysis predicts that the ship wake would increase between 50% and 90% when comparing a typical existing vessel (about 950-ft length) with post-Panamax vessels (1150- to 1200-ft length) for the without- and with-project conditions.* The size of the ship wake increases dramatically – as does the effect of larger vessel size upon ship wake – for vessel speeds greater than 7 knots. The USACE analysis, however, considered only 7-knot vessel speeds (relative to the tidal current), whereas the Savannah Harbor evaluation considered 10 knot speeds. Selection of a 10-knot speed at Savannah was based upon ship observations, but no justification is given for the selection of a smaller 7-knot speed at Jacksonville.

The approach used by USACE in the DSEIS to calculate the increase in ship wake due to the deep dredge appears to severely underestimate the actual threat of shoreline erosion, sedimentation, loss of habitat and turbidity.”

RESPONSE: The vessel speed of 7 knots used in the Jacksonville Harbor ship wake analysis is not arbitrary. It is the result of observations personally experienced on the ship bridge, and on the ship simulator. Our project vessels are typically transiting with drafts that give them very little underkeel clearance (we professionally recommend 3 feet over hard bottom). Our project vessels are very large and subject to squat. They squat in response to Bernoulli physics, and the amount of squat is directly proportional to vessel speed. The vessel begins to squat with any application of the throttle to increase speed. The pilots are always trying to balance the need to move water past the rudder for rudder effectiveness and directional control, with the need to keep the speed low for squat avoidance. Squat avoidance is essential. Squat can result in contact of the vessel bottom with the channel bottom - a collision that causes vessel damage and the possible need to interrupt the vessel voyage for a complete bottom inspection. Therefore, the pilots, who want to use the throttle and vessel speed for rudder control, avoid using the throttle and maintain the lower speed of approximately 7 knots, to avoid vessel squat.

Besides our estimation of ship wake generated dynamically by the AdH hydrodynamic numerical model, within the DSEIS the USACE also discussed a traditional and accepted engineering analysis based on empirical formulae as specified in the USACE Engineering Manual guidance EM 1110-2-1100 Part II pp II-7-59 to II-7-61. This analysis was based on computation of a Depth Based Froude Number (F_d) that is a function of vessel speed (V) and inversely proportional to the square root of the project depth (d). The Depth Based Froude Number is appropriate for use in shallow water, with shallow water defined by the ratio of project depth (d) / Vessel Draft (T). The value of d/T is typically less than 3 for shallow water application and generally ranges from 1.05 to 2 for commercial navigation vessels. In the case of Jacksonville Harbor, the existing design vessel drafting 37 feet in a 40-foot depth channel would result in a d/T ratio of 1.08; the with-project design vessel drafting 44 feet in a 47-foot depth channel would result in a d/T ratio of 1.07. These d/T ratios indicate that the Jacksonville Harbor design vessels, when fully loaded, would be transiting in a shallow water condition and should thus use a Depth Based Froude Number approach for computing ship generated wave heights.

Deep draft vessels transiting confined, shallow water bodies disturb the ambient water condition. These disturbances are observed primarily through two resulting physical phenomena, wake and drawdown. Wake is the term given to the stern and bow waves generated by the moving vessel. Stern and bow waves propagate away from the vessel, and generally have periods of less than 10 seconds. Wave height and period are influenced by vessel hull form, shape, and speed.

Drawdown is the decrease in water level surrounding the vessel, as it moves along the channel. Drawdown is primarily caused by the vessel’s displacement of the channel cross section (Herbich and Schiller 1984). A feature of drawdown is the long period nature of the waveform in shallow, confined water bodies. Although the amplitude of the drawdown wave may not be large, the period of this wave can be between 30 to 100 seconds. The wave generated by drawdown in confined channels is a function of vessel speed, depth under the vessel, drawdown height, and blockage ratio (Maynard 2004).

Using the guidance EM 1110-2-1100 Part II pp II-7-59 to II-7-61, drawdown was calculated for the JAX HARBOR GRR-II design vessel, SUSAN MAERSK, in the existing channel and in the deepened, with-project channel near the Cut-41 (Ramoth Drive) location. The draw downs computed for the SUSAN MAERSK design vessel and for a design vessel currently using the Jacksonville Harbor are presented below:

Vessel Drawdown at Cut 41

Vessel	Draft	Depth Condition	Vessel Speed	Vessel Drawdown
CMA CGM TARPON	37 ft	Existing (40-foot)	7 knots	1.04 ft
SUSAN MAERSK	37 ft	Existing (40-foot)	7 knots	1.40 ft
SUSAN MAERSK	44 ft	Project (47-foot)	7 knots	0.47 ft

Drawdown adjacent to the vessel, within the channel limits.

EM 1110-2-1100 (Part II), II-7-60

In the with-project condition, with the channel cross section increased, drawdown is decreased for the design vessel, SUSAN MAERSK, operating with increased draft of 44 ft.

The empirical equation cited in the comment includes formulae developed by the US Naval Academy. (D. Kriebel & W. Seelig, “An empirical model for ship-generated waves.” Proc., Fifth Int’l. Symposium on Ocean Wave Measurement and Analysis, 2005. On page 28 of their presentation, “Development of a Unified Description of Ship Generated Waves” by David Kriebel, William Seelig and Carolyn Judge, the authors present their Summary and Conclusion, Ship-Generated Waves and acknowledge that their proposed model for evaluation of wave heights lacks adequate substantiation (lack of laboratory and field data) for the very shallow water condition (which they define as the condition in which $T/d < 1.3$). For the Jacksonville Harbor project, the T/d ratio under a fully-loaded condition in the deepened channel is computed as $44/47$ equals 0.936, far below the threshold value of 1.3. Since it is not possible for the vessel draft (T) to exceed the project depth (d) and thus produce a T/d ratio greater than unity, we believe

that the authors actually intended the ratio d/T to be used. As indicated earlier, the d/T ratios for the Jacksonville Harbor project design vessels under optimally loaded conditions range from 1.08 for the existing condition to 1.07 for the deepened condition. So, the authors of the U.S. Navy method would tend to lack confidence in their equation to perform optimally when used to examine our channel.

- The proposed deepening – be it at 45-ft or 47-ft -- will clearly have a significant impact upon the river’s hydraulic and sedimentation patterns which is not adequately discussed in the DSEIS. For example, by increasing the hydraulic efficiency of the channel in the center of the river, both the tidal and riverine flow become increasingly concentrated to the middle of the river, further changing the flow patterns along the banks and side-channels. This effect is not adequately examined or described in the DSEIS. The cell size of the numerical models is, as admitted in DSEIS, too large to discern changes in currents at specific locations. Also, the report principally considers changes in sedimentation and flow that affect navigation – not the overall condition of the river, particularly the banks and streams.

RESPONSE: The Adh model mesh, which focused on detailed hydrodynamics along the navigation channel, is adequate to evaluate changes to hydrodynamics and sediment transport. The EFDC model also has a refined mesh that accommodates the changes in bed elevation from the proposed dredging. The EFDC model shows small changes in flow velocity in the navigation channel.

- USACE implies in the DEIS that sea level rise (SLR) is occurring more quickly than previously thought, yet the USACE primarily evaluates the effects of the minimum value for SLR and never considers either the Intermediate or the worst-case scenario. The DEIS should be evaluating the worst case and most likely scenarios, and yet the USACE instead focused on the most optimistic scenario that might be expected. The DEIS also uses outdated values for the Baseline, Intermediate, and High SLR estimates, since the version of EC 1165-2-212 used in the DEIS expired September 30, 2013. By using these lower values instead of those in the updated version, the USACE further underestimates the potential impacts from SLR in the DEIS. This also further minimizes the overall projected impacts, since the impacts from the dredging are expected to exacerbate and expedite the inevitable affects of SLR.

RESPONSE: With regard to use of the correct sea level change guidance, EC 1165-2-212 is the most recent guidance on incorporating sea level change (SLC) into USACE project studies. While the EC does state that expiration is September 2013, SAJ has received direction from HQUSACE that this EC has not been superseded. The above referenced EC contains the most up to date SLC scenarios; the relative sea level change scenarios for Jacksonville Harbor GRRII were developed from the EC.

With regard to why the USACE Low (historical rate) SLC scenario was used in the DEIS, salinity model simulations were conducted for different future water levels in order to

assess salinity impacts if future water levels conform to the Intermediate or High SLC scenarios. This modeling indicated that the Intermediate and High rates of SLC create salinity changes that are far in excess of the project impacts on salinity. This is because significant increases in sea level associated with these scenarios cause sea water to reach much further up the river main stem and further into tributaries and marshes adjacent to the St. Johns River as compared with the Low SLC scenario. Additionally, the higher ocean water levels create higher mean water levels throughout the study area, which permanently or periodically inundates areas that are currently dry. That is, the Intermediate and High SLC scenarios cause far greater salinity changes and other impacts throughout the study area than the deepening project will cause. Project effect on salinity is most critical for the Low SLC scenario. For these reasons the Low scenario is used in the DEIS to assess environmental impacts.

The text of the DSEIS will be revised to clarify the continued use of the EC and to clarify the use of the Low/Baseline SLC scenario.

- The proposed offshore disposal area is not clearly defined in the DSEIS. The present offshore disposal area has less than 4 million cubic yard capacity, yet the project requires disposal of about 18 million cubic yards. A proposed expansion of the offshore disposal area is not yet approved, and its draft design is sited very close to the existing offshore sand borrow area for the Duval County federal shore protection project...

We remain concerned about the lack of sufficient information regarding the disposal methods, locations, and testing of the dredge material and the potential for adverse impacts on the St. Johns River and its wildlife.

RESPONSE: The USACE will restrict disposal methods, locations and testing of dredged material in accordance with regulatory requirements. The types of dredging equipment that may be used are described in Section 6.3.5. As stated in Section 6.1, all dredged material is assumed to go to a new Ocean Dredged Material Disposal Site (ODMDS), and its location is shown in Figure 10. Additional detailed information on the new ODMDS can be found in the Environmental Impact Statement being prepared by the U.S. Environmental Protection Agency (USEPA).

Previous sediment assessments do not indicate toxic sediments within the project area. Subsequent testing has been performed and the suitability of maintenance dredged material for ocean disposal was confirmed for material west of Cut 3 station 210+00 through Cut 41 (approximately River Mile 8) by EPA on 23-JUN-2011. Additional sediment testing will be performed during the MSRPA Section 103 concurrence process and must be authorized by USEPA prior to disposal into the ODMDS.

- We are concerned that the DSEIS may have underestimated the potential impacts to air quality, in particular ozone concentrations. Currently, the City of Jacksonville is just under the EPA limits of 75 parts per billion (ppb) at approximately 73 ppb, with the

number one source of this pollutant coming from mobile sources. However, the EPA is considering the lowering of these limits to 65 or 70 ppb in the near future. These changes would make it extremely difficult for Jacksonville to remain in compliance, especially with a significant increase in trucks entering and leaving our county as a result of projected increases in cargo. Noncompliance could jeopardize federal funding for local transportation projects, in addition to water and sewer infrastructure that is important for protecting the St. Johns River and our aquifer. Any increase in air pollutants resulting from the larger post-Panamax ships and the increase in cargo truck traffic could have an adverse impact on the water quality of the St. Johns, its tributaries, and residents of the Greater Jacksonville area.

RESPONSE: The USACE agrees that the future may bring changes in federal air quality standards and in air quality. The USACE has used best available science to assess existing emissions from the port and potential changes in port and port-related emissions due to port channel deepening. The commenter should note that the economic analysis concluded that fewer, larger ships may likely visit the deepened port, resulting in a net decrease in pollutant discharges per unit freight transported by that source. In addition, JAXPORT is committed to a long-term plan, already underway, to reduce air pollutant emissions from equipment used as part of port operations. Infrastructure improvements to increase use of trains (which emit less pollution per unit weight transported than do trucks) at the port are underway. New regulations to reduce truck emissions are being promulgated on a regular basis that will likely continue at least in the near future. All of these factors will positively affect future air quality. Should air quality standards change, reductions in emissions from all sources will be considered by the EPA, the state, and the City of Jacksonville, which includes the Port of Jacksonville. Such considerations are beyond the scope of the SEIS.

Duval County—nor any county in Florida or Southeast Georgia—is considered an ozone non-attainment or maintenance area by EPA. According to EPA (<http://www.epa.gov/oar/airtrends/ozone.html>), the current average annual concentrations of ozone at nearest EPA monitored site (120310077) have been decreasing since 2006 and have been below the Daily Maximum 8 Hour Average standard since 2008. The 2012 level was 59 ppb—significantly below both the current and either proposed standard. This study also must use the standards that are in effect at the time of the study—not proposed standards. The future use of newer (but fewer) post-panamax ships as well as upgrades to the fleet of road and non-road ozone sources (replacement of older vehicles/vessels, conversions to LPG, etc.) both in the Port and in the region should not reverse this trend. Additional air quality analysis may be found in Appendix I Air Emission Inventory.

- It is unclear how USACE addresses the potential of breaches in the confining layer that may lead to saltwater intrusion in the Floridan aquifer system. Without simulating actual conditions, how can the USACE be sure that our public water supply is not at risk?

RESPONSE: This deepening project would not breach the confining layer that protects the Floridan Aquifer System. The USGS has stated in their description of the Hawthorn Group that these sediments are part of the intermediate confining unit/aquifer system and provide an effective aquitard for the FAS (Floridan Aquifer System) (USGS Mineral Resources, On-line Spatial Data, Florida).

- If the DSEIS does not fully consider all reasonably foreseeable, significant, and adverse impacts of the proposed deep dredge, the USACE is shortchanging this community and the river is in violation of NEPA and its regulatory obligations.

RESPONSE: All environmental studies that the USACE described early in the scoping process have been completed, and the results of those studies have been made available to the public for review and comment. NEPA requires Federal agencies to use the best available information or science to evaluate how a Federal action may affect the human environment. The USACE has used the best available tools to accomplish this goal, and has extensively coordinated with all stakeholders on the proposed evaluation methods and the results.

- To propose an over-abundance of deepened navigation channels along the U. S. East Coast, given the very substantial costs and environmental impacts associated with deepening, is not a well-developed strategic position. The USACE planning process includes no consideration of broad regional economic or environmental issues. It seeks to evaluate deepening at every port on an individual basis in the absence of any regional or national strategy. This will lead to aggressive competition that will drive port fees below a point to achieve a possible return of investment.

RESPONSE: The purpose of the study was to address the feasibility of navigable waterway improvements at Jacksonville Harbor. Rest assured; no proposal for an overabundance of deepened navigation channels on the US East Coast has been issued as a result of the Jacksonville Harbor GRR-II. The regional allocation of cargo has more of a bearing on the analysis when the commodity forecast used to describe the demand for freight transport exceeds its regional historical share (which isn't the case here). In terms of a national return on investment, NED benefits are based on the savings from avoiding the consumption of resources. As such, reduced port fees due to competition have no bearing on the economic analysis. ER 1105-2-100 is the planning guidance regulation used to conduct the study. For more information on the conduct of the economics, see Appendix B.

- The DSEIS does not describe the projected future maintenance costs of the project, and in particular, it does not describe the anticipated federal versus non-federal future 20 annual maintenance costs. These costs are said to be included in the Economic Appendix, but they are not.

RESPONSE: These costs were included in the main report tables 37 and 38 (item 6).

- The USACE has slashed the mitigation budget from \$80 million to \$27 million with \$23 million focused on monitoring. The new DSEIS does propose an Adaptive Management Plan. However that plan will only be triggered and implemented if it is proven that damage results from the dredging project, and not sea level rise or other influencing factors, which USACE admits would be extremely difficult to discern.

RESPONSE: As previously stated, the base mitigation plan has been revised in accordance with the results of the environmental modeling and effects assessment. The plan is being coordinated with the regulatory agencies. Other mitigation options (i.e. eelgrass and wetland restoration opportunities) will continue to be considered. The plan can be found in Appendix E. In addition, the USACE would continue to monitor the river system to determine actual impacts. In the unlikely event that impacts would be more than predicted and more than that mitigated for, additional mitigative measures would be considered (see Appendices E and F). The USACE will continue to work with regulatory agencies to further refine the proposed modeling and monitoring in order to discern how the deepening may affect the salinity of the river and its various ecosystem components.

- Previous dredging and navigational changes to the St. Johns River have progressively increased the salinity levels, degraded water quality and accelerated shoreline erosion. These unintended, long-term "cumulative impacts" have not been adequately considered in past studies. The USACE DSEIS must address cumulative impacts on the river system and potential mitigation options, not just the incremental difference between the existing channel and the proposed deeper channel.

RESPONSE: Additional discussion has been added to the cumulative impacts section. However, no data or analyses are available to assess how past deepening or other changes in the watershed may have affected salinity levels, water quality or shoreline erosion within the study area.

- The DSEIS is fundamentally deficient in consideration of other engineering alternatives for project design. It is acknowledged that the overall length of the considered deepening project was initially decreased from about 20 miles to 13 miles at the outset of the evaluation. However, there is no discussion of other possible, shorter project lengths that may further reduce environmental impacts and costs while achieving optimum benefits. There is no discussion of alternative construction methods that may mitigate long-term environmental impacts. Overall, the engineering analysis was limited to a narrow range of alternatives: i.e., deepening to various depths along a fixed channel and quasi-fixed methods of dredge disposal.

RESPONSE: An economic analysis was conducted along with ship simulation analysis to determine the recommended length of the project. Economic analysis was used to

reduce the project length from 20 to 13 feet. The majority of vessels transit from River Mile 10-13. See Section 5.0 of the main report.

- It is not clear whether the existing clearance under the Broward (Dames Point) Bridge, between the Dames Point and Blount Island terminals, was considered for the report's projected vessel transits and cargo volumes. It is our understanding that after the Bayonne Bridge at the Port of New York & New Jersey is raised, Jacksonville's Dames Point Bridge – with less than 175-ft underspan clearance -- would be the lowest span for the major East Coast ports. The air draft (height) limitations for most of the Post-Panamax ships are 190 ft. Light-loading of Post-Panamax ships to accommodate the proposed 45- to 47-ft channel depth at Jacksonville, or awaiting passage at high tide, increases the probability that the larger vessels may not clear under the Dames Point Bridge.

RESPONSE: The with-project air draft discussion can be found in Section 6.3.7, as stated in this section the normal operating draft for the S-class vessel used in the ship simulation could vary from 31.2 to 39.4 feet. With a draft of 32 to 40 feet the actual air draft or distance from the waterline to the top of the mast is between 159 to 167 feet. The largest vessels the future fleet is anticipated to transition to with a project are Super Post Panamax vessels in the 8,000 – 9,000 TEU range and have air drafts ranging from 139 to 156 ft. As the Dames Point Bridge and JEA power lines at Blount Island have a vertical clearance of 174 feet and 175 feet, there is not an anticipated air draft concern under the with-project condition. Cruise ships are not a part of this analysis as they are not benefiting vessels for deepening.

- This fast tracking combined with the recent federal government shutdown puts the St. Johns River and the communities of Northeast Florida at risk. We urge the Army Corps of Engineers to resolve our stated concerns and those of agencies and other stakeholders and to request an extension to provide adequate time to complete a thorough and sufficient analysis. If the above issues are not adequately addressed and resolved, St. Johns Riverkeeper may be forced to take legal action to avoid potential harm to the St. Johns River due to the inadequacies of the DSEIS.

RESPONSE: The USACE has addressed all of the stated concerns by completing the environmental studies, providing the results of those studies to the public for review and comment, and updating the DSEIS.

Sierra Club

- Blasting may affect underlying rock formations and the aquifer.

RESPONSE: Blasting assuredly will impact the underlying rock within the immediate vicinity of a given blast hole. Fractures from blasting a well designed and executed blast

shot will extend to the free face, not toward the surficial aquifer along the margin of the channel.

The Floridan Aquifer is protected from the blasting by the soft, low permeability material that separates the blast zone from the drinking water aquifer. Blast energy will propagate laterally towards the free face along the length of the blast hole, not in a vertical direction.

- Salinity levels would increase and impact submerged aquatic vegetation, manatees and fish biomass.

RESPONSE: The results of Environmental Fluid Dynamics Code (EFDC) hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition. The effects of the salinity changes on SAV, as described in the DSEIS and the Ecological Modeling report, are correspondingly small relative to the baseline condition. The effect on SAV as forage for manatees would also be minor.

The analyses of potential effects of deepening on the LSJR fish community do not include assessment of fish biomass changes. The analyses do consider fish salinity habitat areas based on a 10-year FWC nekton sampling effort in the lower St. Johns River. The FWC data provided the basis for assessment of changes in fish salinity habitats (expressed as the salinity range that encompassed 25% to 75% of the total salinity range of a species by collection date, collection gear, and size class (pseudospecies). The salinity habitats for these pseudospecies shifted little (increased or decreased slightly, median habitat area change -0.1% for 2018 alternatives) but did not shift in ways that would eliminate access to a particular benthic habitat. Please review the SEIS and Appendix D Ecological Modeling, Chapter 5 Fish.

- Monitoring environmental impacts is not corrective action.

RESPONSE: In coordination with the agencies, the USACE has proposed a long-term monitoring plan to determine if predicted effects caused by the proposed deepening are accurate. A base mitigation plan for predicted effects has been prepared, and proposes to purchase conservation lands in order to offset minor impacts to SAV, wetlands and fisheries. The USACE continues to coordinate with regulatory agencies on additional mitigation options (i.e. eelgrass and wetland restoration opportunities). A corrective action plan has also been prepared. In the event that the deepening results in effects that exceed the effects predicted by environmental modeling, then in accordance with the corrective action plan additional mitigation may be implemented.

- There are additional environmental studies underway but no plans for conclusion and public reporting.

RESPONSE: All environmental studies have been completed and additional time for the public to review and comment on the results was provided. It should be noted that

subsequent modeling and analyses indicates that project impacts stated in the initial DSEIS were over-estimated. Subsequent modeling and analysis indicates that project impacts stated in the initial DSEIS were over-estimated. The USACE will consider comments on this FSEIS.

- Stormwater levels (storm surge), ship wakes and riverbank erosion is not being addressed in the study.

RESPONSE: The effects of the proposed project on storm surge are based on FEMA's Georgia Northeast Florida storm surge study methodology. The application of the ADCIRC+SWAN hydrodynamic and wind-wave models, refined for the Jacksonville Harbor Deepening evaluations, represents the best available estimate of storm surge changes that may occur due to the proposed project (See Attachment J of Appendix A - Engineering). Analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition (see Appendix A – Engineering).

- The DSEIS has no evaluation of the impact of expansion of port activities on air quality.

RESPONSE: The air quality analysis is provided in sections 2.2.12 Existing Conditions and 7.2.12 Environmental Consequences of the FSEIS. This analysis is based upon the Air Quality Inventory provided in Appendix I. The future emission are based on the available data, current and upcoming regulatory limits, and port growth projections developed as part of the USACE National Economic Development analysis performed for this EIS. However, the analysis was performed based only upon changes induced from the implementation of the TSP; future JAXPORT air emissions not related to the proposed deepening were not included in this analysis.

- The St. Johns River has been designated an American Heritage River and one of America's Great Waters. Steady progress has been made from the river's condition in the 1960's and 1970's. We see the dredging project as a step backwards.

RESPONSE: American Heritage River status involves special attention to economic revitalization as well as environmental protection. The USACE continues to coordinate with agencies and interested stakeholders in order to provide a balance of both goals.

- We are concerned about the questionable economic benefits, the expenditure of almost \$1 billion, and lack of estimates of what the maintenance would cost the taxpayers.

RESPONSE: Details on the Economics can be found in Appendix B and the future maintenance can be found in Section 6.5 as well as Appendix J.

- We're getting inflated, not well substantiated job numbers.

RESPONSE: The regional economic development account displays changes in the distribution of regional economic activity (e.g., income and employment). It is one of the four accounts outlined in the USACE Principles and Guidelines (P&G). The first two accounts are national economic development and environmental quality, one or both of these are required for determining the recommended plan. The other two accounts regional economic development and other social effects are discretionary and are used to show beneficial effects of alternatives and are not used to determine or justify a recommended plan. As such, the information on projections of jobs has been removed from the report and replaced with a qualitative analysis.

- The quality of created jobs is questionable.

RESPONSE: The regional economic development account displays changes in the distribution of regional economic activity (e.g., income and employment). It is one of the four accounts outlined in the USACE Principles and Guidelines (P&G). The first two accounts are national economic development and environmental quality, one or both of these are required for determining the recommended plan. The other two accounts regional economic development and other social effects are discretionary and are used to show beneficial effects of alternatives and are not used to determine or justify a recommended plan. As such, the information on projections of jobs has been removed from the report and replaces with a qualitative analysis.

- Public cost versus private benefits is a concern. The public would bear the almost \$1 billion cost of construction, unspecified maintenance for the port dredging, and public assistance programs for the majority of workers while the retailers would accrue the benefit of reduced transportation costs.

RESPONSE: The comment suggests that the transportation cost savings benefits accrue to private interests, but the cost to acquire those benefits accrue to the public. Furthermore, the comment seems to imply that this is negative. By definition, the public represents the aggregation of all private interests. As such, retailers are also members of the public. Therefore, it is impossible for the retailer to receive a transportation cost savings benefit, without the public benefitting as well.

However the scenario proposed by the commenter is useful for tracing the linkage between NED transportation cost savings benefits and everyone else. Consider the following chain of events:

- A navigable waterway improvement allows ocean carriers to deliver more cargo using fewer resources. This frees up resources which have an opportunity cost, for alternative uses.
- Ocean carriers are able to keep costs down for businesses that ship or receive cargo.

- Reducing shipping costs for businesses makes it easier for them to participate in commerce.
 - Domestic exporters have easier access to foreign markets. This makes it easier for the domestic exporter to pay themselves, their employees, and their taxes.
 - Domestic importers are able to replace equipment or replenish inventory for resale, making it easier for them to pay themselves, their employees, and their taxes.
 - The retailer's customers benefit by having convenient access to whatever item they deem worthy of purchase.

As such, all of these actors benefit from trade, would benefit from the deepening, and are members of the public.

Additional Sierra Club comments received on October 24, 2013.

- The USACE report considers the Hawthorn Aquifer of northeast Florida as a confining unit, using old USGS and SJRWMD studies. In northeast Florida, new research* by Dr. Vija Satoskar, Ph.D., P.G., shows that the Hawthorn is primarily an aquifer that may be, locally, hydraulically connected with the Floridan Aquifer which is the drinking water resource for the region. There are many parts of country would dream to have just the Hawthorn for their drinking water needs. Further research is needed to realize the full potential of the Hawthorn. And certainly as the Floridan Aquifer becomes depleted, the Hawthorn can be considered as a source of supplemental potable water resource, as an alternative to the Floridan (FAS) Aquifer, extending the sustainability of FAS. That is why we must guard against contamination; and the reason for Sierra's concern about the impact of dredging and blasting related to the proposed Jaxport dredging project. This report still considers the Hawthorn Aquifer (IAS) as a confining unit and not an aquifer which is an out dated and erroneous concept.

RESPONSE: There is aquifer quality material contained within the Hawthorn Group and some hydraulically connected to the surficial aquifer. There are many wells within northeast Florida that document the presence of clays and silt that serve as an effective confining layer that retards the vertical movement of water between the surficial aquifer system and the Upper Floridan aquifer (USGS Mineral Resources, On-line Spatial Data, Florida). If there is recharge communication from the surface as Dr. Satoskar discusses, then the Hawthorn sediments have already been contaminated with saline water in the proximity of the project. The saline water would tend to sink through the section. If these permeable beds have not been impacted, they are protected by the same confining beds mentioned above.

As for the blasting impacts to the Hawthorn or Floridan, the vertical impact of blasting is limited to within a few borehole diameters of the bottom of the blast hole, less than five feet.

- Agreed that (USGS) mathematical modelling does not simulate actual conditions. They should be used as guidelines only. Strength of any numerical simulation can be only determined by its confirmation by actual data collected through strategic monitoring points. (Effects of vertical fractures is not considered in this modelling study. Dredging which includes blasting of the limestone in some areas may create hydraulic connection with Hawthorn Aquifer System and possibly with deeper Floridan Aquifer System).

RESPONSE: The USGS model was conducted to test the possible impact to the most susceptible aquifer, the Surficial Aquifer System (SAS). That study shows several plausible geologic scenarios to test the impact of the dredging. Under the most implausible scenario, the impact to the SAS is limited to near the channel.

Blasting impact to the Hawthorn or Floridan is not considered in the USGS study because the vertical impact of blasting is limited to within a few borehole diameters of the bottom of the blast hole, insufficient to impact water bearing zones below the surficial aquifer.

- In the areas surrounding blasting, several monitoring wells into Hawthorn Aquifer System and a few into Floridan Aquifer System are needed to determine any short--and long-term adverse impacts due to blasting to our precious potable water resources. ACOE proposes no plan for monitoring. Our water supply must be protected. Sierra Club demands systematic short and long term monitoring of the deeper potable aquifers, i.e. Hawthorn and Floridan Aquifer, to assess any adverse impact to them due to blasting.

RESPONSE: Blasting impact to the Hawthorn or Floridan is not considered a serious issue, because the vertical impact of blasting is limited to within a few borehole diameters of the bottom of the blast hole. The dozens of exploratory holes that have penetrated below the dredge depth do not define a confining layer at the top of the Hawthorn along the reach of the channel to be deepened. Since the blasting will not fracture much below the bottom of the drill hole, then the confining layer above an aquifer within the Hawthorn will not be impacted. If there is no confining layer, then the Hawthorn beneath the channel is already in communication with more saline water from the river.

- Dames Point Bridge is 174' (EIS pg 16) and newer cruise ships exceed 185'-190' and growing. The Emma Maersk has a 191' air draft. The mean average tidal range is 3.42' (EIS Section 7.2.3) . A few references to support the air draft issue:

Paul W. Stott, from the School of Marine Sciences and Technology, Newcastle University, Newcastle United Kingdom, in a paper* presented to the Low Carbon Shipping Conference in 2012 states that old Panamax and new Panamax ships have a 57.91 meter air draft which is 189'.

Bryants Maritime Marine Consulting firm states** that any bridges less than a 200' air draft will be problematic for any port which aspires to be a hub in the post Panamax era.

Raising the Dames Point bridge will cost \$.8-1.2 million based on other bridge projects. This would double the already prohibitive cost of the dredging project.

How does Jaxport propose to address this discrepancy?

RESPONSE: The with-project air draft discussion can be found in Section 6.3.7, as stated in this section the normal operating draft for the S-class vessel used in the ship simulation could vary from 31.2 to 39.4 feet. With a draft of 32 to 40 feet the actual air draft or distance from the waterline to the top of the mast is between 159 to 167 feet. The largest vessels the future fleet is anticipated to transition to with a project are Super Post Panamax vessels in the 8,000 – 9,000 TEU range and have air drafts ranging from 139 to 156 ft. As the Dames Point Bridge and JEA power lines at Blount Island have a vertical clearance of 174 feet and 175 feet, there is not an anticipated air draft concern under the with-project condition. Cruise ships are not a part of this analysis as they are not benefiting vessels for deepening.

North Florida Land Trust

- The model in the report mostly deals with salinity, and the report states that the Timucuan Preserve is already saline, and so there can be no effects. The tributaries within the preserve were completely absent from the model. Changes in the intensity of salinity in a salt marsh can have effects on zonality of the vegetation within them, and stress many species of aquatic life living in the marsh. It completely ignores there may be non-saline impacts to the preserve.

RESPONSE: Marsh salinities have been modeled. The report is provided in Appendices A and D of the FSEIS. The salinity changes in the marsh of the Timucuan Preserve are largely dependent on the changes in the main channel. The marsh flushes twice daily, exchanging marsh water with water from the St. Johns River. Therefore, the river salinity fluctuations and the marsh salinity fluctuations are very closely tied. Small fluctuations in the river mean small salinity fluctuations in the marsh. In addition, the estuarine portions of the marsh, which makes up the vast majority of the preserve wetlands, includes a few dominant species adapted to high salinity and wide salinity fluctuations.

The FSEIS was developed with available information. Not all inputs of water to the marsh have been previously quantified; not all vegetation has been mapped. The models represent the conditions and behaviors to the extent of the available data.

The results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition at the mouths of tributaries discharging from the Timucuan marshes. Because the predicted salinity changes at the tributary mouths are small, little salinity

change would propagate into the tributaries. Additional modeling of the Timucuan marsh system confirmed the marshes are expected to experience little change in salinity as a result of channel deepening.

- The effects of ship wake analysis have been insufficiently studied.

RESPONSE: An analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition. More detailed discussion of these analyses can be found in Appendix A, Engineering in the General Reevaluation Report.

- There is a predicted 4.8 inch increase in the tidal range, with absolutely no mention of what effects that could have on erosion or marsh flooding.

RESPONSE: The change in tidal range is a small fraction of the existing tidal ranges in the main stem and tributaries. More recent comparisons between baseline and the Tentatively Selected Plan (47 ft) scenarios shows a smaller tidal range increase (e.g., 2.4 inches at Longbranch and Main Street Bridge and 0.0 inches at Buckman Bridge). Comparison of model velocity for these two scenarios show very small changes in flow velocity thus erosion increase is unlikely.

In the North Timucuan marsh area, tributary modeling results show maximum tidal range increase of 1.8 inches which roughly translates to less than an inch of elevation of high tides during a small fraction of the tidal cycle. This elevation of the high tide is very small compared to the water level fluctuations in the marsh areas.

- The Corps expects currents on the main stem to change, and again there is no exploration of what effects that will have on the erosion and accretion of sediments in the St. Johns.

RESPONSE: The effects of the project on currents and sediment transport, shoaling, and erosion are presented in the AdH hydrodynamic and sediment transport modeling and analysis located in Appendix A- Engineering, Attachment G. Hydrodynamic Modeling for Ship Simulation, Riverine Channel Shoaling and Bank Impacts. The AdH sediment transport model simulated the bed level changes for both existing and with-project (47-ft depth) conditions. The with-project condition results in an overall increase in shoaling volume by approximately twenty percent.

- There is a lack of exploration of the potential effects on currents and mixing in saltwater tributaries. By deepening the river a kind of saltwater highway will be formed encouraging the more rapid movement of water in the mainstem, moving past the higher elevation saltwater tributaries. The possibility of this happening is not mentioned at all in the report and therefore none of the possible effects.

RESPONSE: The model shows very small project impact on salinity transport in the main stem of the river and the tributary models show smaller effects in marsh areas in the tributaries. Several tables based on salinity duration curves show detailed exploration of the comparison of with and without project salinity. The main stem hydrodynamics and salinity transport are presented in Appendix A – Engineering, Attachment K. Hydrodynamic and Salinity Modeling for Ecological Impact Evaluation. The tributary hydrodynamics and salinity transport are presented in Appendix A – Engineering, Attachment M. Hydrodynamic Modeling (ADCIRC/ MIKE21) for Salt Marsh and Tributary Salinity and Water Level.

- To compensate for impacts to salt marsh and coastal strand habitat, the mitigation plan MUST include creation and restoration of coastal barrier islands and programs to reconstruct and armor coastal marshes against impacts of sea level rise. Offshore disposal of dredged material is unacceptable. Instead, beneficial use of dredged material for marshland and coastal habitat restoration should be part of the mitigation plan.

RESPONSE: As part of the deepening study, the USACE has determined that placement of dredged material within an Ocean Dredged Material Disposal Site (ODMDS) would be the least cost disposal method. Dredged material may also be placed at Buck or Bartram Islands, the beach placement location, and the nearshore next to the beach. The USEPA has prepared a draft EIS on a new ODMDS that would have sufficient capacity to accept dredged material resulting from the deepening. The draft EIS can be obtained through the USEPA. The USACE continues to explore beneficial uses of dredged material including the uses stated in the above comment. However, the USACE has determined that the purchase of conservation lands would offset the minor environmental impacts predicted by modeling of the proposed deepening. The mitigation plan is being coordinated with regulatory agencies.

- The report is incomplete, and the comment period should be extended by a further 60 days, with the option of further extensions until such time that all the facts of the report become known.

RESPONSE: The FSEIS has been completed and the comment period extended to provide additional time for the public to review and provide additional comment on the report.

Additional North Florida Land Trust comments received on October 24, 2013.

The ability of the public to synthesize and provide informed public comment has been extremely reduced by the Environmental Impact Study's manner of the release over time. Simple administrative measures, such as providing revision histories, version

dates, and “red-line” drafts could have done wonders in making the modifications to the study more easily interpretable. As it currently stands, after long review of the document we are still unclear as to what information originally provided in early draft versions has been rendered irrelevant by the recent updates. Given these conditions, we recommend that upon finalization of the impact study, red-line and clean versions of the EIS be provided to the public for a new period of public comment.

RESPONSE: A revised draft SEIS was provided to the public along with a second public meeting to discuss the revisions and public comments provided.

- The project timeline for the Jacksonville Harbor Navigation Study has been severely reduced by order of the President under his “We Can’t Wait” Initiative. That order, given in July of 2012, could never have predicted the partial government shutdown, the low efficacy of the U.S. Congress in meeting their legislative responsibilities or that the JAXPORT Harbor Deepening would not be included in either the Senate or the House’s 2013 WRDA reauthorizations. It would seem to us that such a fundamental change in circumstances would render the original intent of that presidential order null with the prospects of an immediate authorization of the deepening being bleak and that it would behoove the Corps of Engineers to ask for an extension of that deadline so as to address all those issues provided above, and in other public comments.

RESPONSE: The “We Can’t Wait” initiative accelerated the schedule; however technical analysis was still complete and provided to the public for comment. The initial draft released in May 2013 outlined the modeling still pending, as the modeling reports came in, the USACE released the studies and had two public meetings along with public teleconferences to brief on the results of the reports. As such the public was provided an opportunity to comment on the DSEIS in full.

- It is a requirement of the National Environmental Policy Act that the Corps of Engineers take a “hard look” at the facts of potential impacts. We have found, in far too many critical areas of the EIS, that there is not enough baseline information about the current conditions for the Corps of Engineers to provide full confidence to the public as to the accuracy of their model. Available species data and study impacts are only relevant to aquatic species while terrestrial species, that make use of the marsh and hardwood swamp forests potentially impacted by the deepening, have had little monitoring so there is no baseline to understand their numbers, vulnerabilities, and habitat usage. An insufficient number of metering devices have been available to gauge salinity, water level, periodicity, and turbidity in large portions of the study area. Again, an extension of the project timeline to gather baseline information to be fed into the study would do much towards increasing the

provided models' robustness. However, until an adequate level of baseline information is accrued, the findings of the model are suspect.

RESPONSE: The EIS makes use of best available information and analytical tools, including the results recently developed hydrodynamic and ecological models developed by the SJRWMD specifically for the LSJR. The evaluations applied in the EIS are appropriate for the spatial and time scales of potential impacts of the deepening project.

- The public should be provided a completed copy of the EIS prior to finalizing public comments. As of the day of the public comment deadline, models for the worst-case sea level rise scenario and the EIS for the offshore dredged material disposal site have not been completed. We seriously recommend that the Corps of Engineers extend their deadline so as to properly address these yet unfinished portions of the study.

RESPONSE: All environmental studies have been completed, and the results of those studies have been provided to the public for review and comment. Models for the worst case sea level rise have been completed and can be found in Appendix A, Attachment J. The U.S. EPA has prepared a draft EIS for the ODMDS, and it is available for review. The draft is tentatively scheduled to be completed in early 2014.

- The GRR-SEIS allocates 75% of its mitigation dollars to monitoring with the promise that unseen impacts will be covered with budget allocations in future budgets of the local district's Corps of Engineers. This mitigation proposal, or really, lack of a proposal, is the most troubling aspect of the study in our minds. If, as a result of the accelerated timeline and heavy reliance on models, the Corps lacks enough confidence in its finding that it will obligate future budgetary dollars towards mitigating "unseen impacts," then it simply has not sufficiently completed its EIS. Furthermore, the proposal does not synchronize with the political reality. As it currently stands, Congress has failed to pass a budget since 2009 and has been operating on continuing resolutions since that time. Predicting that the Corps of Engineers will be able expand their regular budget to cover significant mitigation requirements is not realistic without the budget expansion occurring at the expense of other regular budgetary priorities. The mitigation plan is essentially then to "rob Peter to pay Paul." We need an EIS that can confidently predict potential impacts and allocate mitigation funding in a level consistent with the original plan. If an extension of the deadline is what it takes to make that necessary, then we fully recommend that the Corps extend that deadline.

RESPONSE: As previously stated, the base mitigation plan has been revised in accordance with the results of the environmental modeling and effects assessment. The plan is being coordinated with the regulatory agencies. Other mitigation options (i.e. eelgrass and wetland restoration opportunities) will continue to be considered. The plan can be found in Appendix E. In addition, the USACE would continue to monitor the river system to determine actual impacts. In the unlikely event that impacts would be

more than predicted and more than that mitigated for, additional mitigative measures would be considered (see Appendices E and F). The USACE is requesting authorized funds, as part of this study, for additional mitigation if warranted. If this request is approved, the USACE would not have to seek additional Congressional authorization for future mitigation costs.

- The acknowledgment that the proposed project will produce significant ecological changes (caused by changes in salinity) is made even harder to accept by the expressed uncertainty in the determination. Why was there not more conservative approaches used to produce conservative, worst-case scenario, results?

RESPONSE: The studies indicate the proposed project may cause slight salinity changes which may in turn cause concomitant minor changes in ecological conditions. The methods used included best available science and best available data to develop the analyses reported in the SEIS.

- The EIS acknowledges that the TSP will shift the saline/freshwater interface further upstream in the main channel and its tributaries, ultimately causing profound ecosystem changes throughout. It is hard to understand how such changes can be considered to be consistent with the Corps' mitigation plan.

RESPONSE: The completion of all environmental modeling indicated that the impacts initially discussed in the DSEIS were OVER estimated not underestimated. The base mitigation plan was revised accordingly.

- Those sinkholes, fractures, and "other openings" will allow for potential impact to the Floridan aquifer. Given the importance of the protection of that aquifer, a more in-depth study of impacts to the ground water is merited.

RESPONSE: The sinkholes, fractures and other openings discussed in the main report are general conditions along and near the lower St. Johns River as discussed in a study by the St. Johns River Water Management District. Along the St. Johns River in the area near the Clay County-Duval County boundary, the Hawthorn Group is much thinner which would reduce the confining layer. However, in the area of the deepening project, the thickness of the Hawthorn Group is over 400 feet. Boring data from Florida Geologic Survey and USGS reports support the existence of clay, clayey sand, sandy clay within the Hawthorn Group. These are characteristics of a confining layer protective of the Floridan.

- The stakeholders made what we believe was a most reasonable request to evaluate the effects of a higher rate of SLR. In its attempt to explain why it did not and would not, the USACE cited its own guidance which, in fact, directed it to do exactly what the stakeholders requested and what we recommend in the discussion of §2.2.5 . The reason(s) for this failure to follow USACE guidance are unclear.

RESPONSE: Salinity model simulations were conducted for different future water levels in order to assess salinity changes if future water levels conform to the Intermediate or High SLC scenarios.

The text of the DSEIS will be revised to indicate where in the appendices one can find the higher mean sea level model results and to clarify the logic behind the use of the Low/Baseline SLC scenario for environmental impact assessment.

- The explanation on p. 19, Section 2.2.5 Sea Level Rise, comes directly from EC 1165-2-212 provided on the USACE's website: <http://www.corpsclimate.us/ccaceslcurves.cfm> but omits information critical to understanding the graph and, hence, the significance of the data presented therein. EC 1165-2-212 prefaces the language included in the EIS with:

"EC 1165-2-212 uses the historic rate of sea-level change as the rate for the "USACE Low Curve."

The rate for the "USACE Intermediate Curve" is computed from the modified NRC Curve I considering both the most recent IPCC projections and modified NRC projections with the local rate of vertical land movement added. The rate for the "USACE High Curve" is computed from the modified NRC Curve III considering both the most recent IPCC projections and modified NRC projections with the local rate of vertical land movement added.

The three scenarios proposed by the NRC result in global eustatic sea-level rise values, by the year 2100, of 0.5 meters, 1.0 meters, and 1.5 meters. Adjusting the equation to include the historic GMSL change rate of 1.7 mm/year and the start date of 1992 (which corresponds to the midpoint of the current National Tidal Datum Epoch of 1983-2001), instead of 1986 (the start date used by the NRC), results in updated values for the coefficients (b) being equal to 2.71E-5 for modified NRC Curve I, 7.00E-5 for modified NRC Curve II, and 1.13E-4 for modified NRC Curve III."

In other words, the three curves described in the EIS are not the same curves shown in Figure 9. The EIS implies that USACE's "Low Curve" is the Intermediate case. In many places in the text it alternately describes the "Low Curve" as the "historic curve", which is correct but the dual notation only adds to the confusion. An annotated version of the same graph may be helpful.

It is perhaps this presumably unintentional confusion which leads to one of the most troubling aspects of the entire EIS. Per the graph produced by the algorithm in the now-superseded EC 1165-2-212, the minimum sea level rise expected over the 50-

-year project period – a somewhat questionable concept in and of itself – is 0.39 feet, based on the historical trend since 1986. The intermediate estimate is around 0.9 feet and the maximum around 2.4 feet.

The version of EC 1165-2-212 used in the EIS expired September 30, 2013. The results of the updated version are shown below. The updated values are 0.55 ft., 1.02 ft., and 2.52 feet, respectively, reflecting USACE’s acknowledgment that sea level is rising more quickly than thought only two years ago. The problem with incorporation of these projections in the EIS is that, **in virtually all relevant parts of the EIS, only the effects of the minimum value for SLR were evaluated**, and **never** was the worst case considered. The 0.39-foot SLR value used throughout the EIS is not only the wrong value, it is arguably irrelevant. In preparing an EIS, the overarching objective is to determine the **potential and likely** environmental impacts of a proposed course of action. “Potential” implies worst case, while “likely” is the most probable or, in this context, intermediate case. The minimum predicted SLR can only be regarded as the best-case scenario, and of questionable interest in this context.

There is considerable debate on the causes and rates of SLR, the former primarily in the political arena. For perspective, the following table compares the results of similar analyses by the National Oceanic and Atmospheric Administration, as presented in its December 6, 2012 Global Sea Level Rise Scenarios for the United States National Climate Assessment.

NOAA	USACE		
SCENARIO	SEA LEVEL RISE by 2100 (feet)	SCENARIO	
Highest	6.6	5.1	High
Intermediate	3.9	1.85	Intermediate
Intermediate	1.6		
Lowest	0.7	0.8	Low

The values are in remarkably good agreement for two different government agencies. It is noteworthy that the estimates from USACE are all lower than the corresponding values from NOAA. NOAA points out in the referenced report that the scenario chosen for a given evaluation must depend on the risk tolerance involved. The future of the ecosystems of the St. Johns River, its tributaries, marshes and swamps is not something with which to gamble. The EIS’s use of the Baseline SLR estimate is a significant gamble to the health of the Lower St. Johns River system with resources that don’t belong to USACE or JAXPORT.

RESPONSE: The SLC values contained in the report are correct, per EC1165-2-212. The 50-year relative sea level change values reported in the DSEIS are relative to the base construction year of 2018. That is, 0.38 is the sea level change expected from the Low scenario for the period from 2018 to 2068. The value of 0.55 appears to be the relative sea level change from 1992 to 2065, which would be incorrect for this study.

With regard to why the USACE Low (historical rate) SLC scenario was used in the DSEIS, salinity model simulations were conducted for different future water levels in order to assess salinity impacts if future water levels conform to the Intermediate or High SLC scenarios. This modeling indicated that the Intermediate and High rates of SLC create salinity changes that are far in excess of the project impacts on salinity. This is because significant increases in sea level associated with these scenarios cause sea water to reach much further up the river main stem and further into tributaries and marshes adjacent to the St. Johns River as compared with the Low SLC scenario. Additionally, the higher ocean water levels create higher mean water levels throughout the study area, which permanently or periodically inundates areas that are currently dry. That is, the Intermediate and High SLC scenarios cause far greater salinity changes and other impacts throughout the study area than the deepening project will cause. Project effect on salinity is most critical for the Low SLC scenario. For these reasons the Low scenario is used in the DSEIS to assess environmental impacts.

The text of the DSEIS will be revised to indicate where in the appendices one can find the higher mean sea level model results and to clarify the logic behind the use of the Low/Baseline SLC scenario for environmental impact assessment.

- All of the quantitative estimations of the effects described on p. 171, Section 7.1 General Consequences were developed using the “best case” SLR of 0.39 feet and the nominal dredging depth of 47 feet. A specific example of the implications of the approach taken is seen in Appendix A, Attachment M, *ENGINEERING – Hydrodynamic Modeling (ADCIRC/MIKE21) for Salt Marsh and Tributary Salinity and Waterlevel*. Table 1 of the included ADCIRC HYDROPERIOD and MARSH PLATFORM RESPONSE shows that the scenarios modeled for sea level rise were only for the baseline and “best case”, i.e., 0.39 feet of sea-level rise (SLR). Table 1 suggests that evaluation of a 2.40-ft SLR – closer to USACE’s highest SLR estimate was in the project scope but was not conducted. The report states: “Dredging will impact the mean tidal range by increasing it by only as much as 0.08 m.”— over three inches, is a not insignificant change in a sensitive ecological system with little topographic relief.

Assuming the relationship between SLR and the water-level effect of dredging is linear, the proposed dredging under the highest estimated 2.40-ft SLR would increase the tidal range by 0.48 m, or over 1.5 feet. A tidal range increase of this magnitude will accelerate erosion and channel widening on the islands of the Timucuan Ecological & Historic Preserve, with attendant habitat implications. Similarly, Table 2.1 of Attachment L, *ENGINEERING – Hydrodynamic and Water Quality Modeling for*

Environmental Impacts, shows that, again, only the “best-case” sea-level rise, i.e., 0.39 feet was evaluated, stating that: “This study also considered project area conditions 50 years after project completion. The 50-year condition includes a 0.39-ft SLR and 155 million gallons per day (MGD) water withdrawals from the Upper St. Johns River. This sea-level rise represents a continuation of the recent historical rate of sea level rise.” This SLR assumption is inconsistent with those stated in other reports on the proposed dredging as well as those issued by the US EPA, NOAA and IPCC. Again, the effects of the proposed project are synergistic with those of climate change and, in this instance, neither the most probable nor worst cases has been evaluated. This glaring oversight calls into question the validity of other reports on the proposed project with perhaps less obvious deficiencies.

RESPONSE: Appendix A, Attachment J, ENGINEERING – Hydrodynamic Modeling (ADCIRC) for Storm Surge and Sea Level Change has been updated with the marsh response modeling for the High Sea Level Change scenario. The tidal range in the tidal creeks of the Timucuan marsh for the present day, SLC1 and SLC3 without project conditions scenarios are 0.9 m (SLC0, NAVD88), 1.1 (SLC1, NAVD88), and 1.2 m (SLC3, NAVD88) respectively. The model results suggest that the proposed channel deepening will have little impact on MHW and MLW in the lower St. Johns River and the tidal creeks within the Timucuan marsh system. The model results suggest that in this area of the lower St. Johns River dredging will cause MHW to increase by only as much as 0.04 m and will cause MLW to decrease by only as much as 0.04 m. Dredging will impact the mean tidal range by increasing it by only as much as 0.08 m. Further, the model results show that these minor changes in MHW and MLW caused by dredging will have very minimal (if any) impact of the productivity of the Timucuan marsh system and the subsequent accretion of the marsh platforms. Lastly, the model results demonstrate that this minimal impact of dredging on marsh productivity to be the case for present-day (no sea-level rise) conditions as well as for future conditions with sea-level rise of 0.39 ft (Figure 22c,d) and with sea-level rise of 2.40 ft (Figure 22e,f).

- The disposition of the dredged materials is an inherent part of the TSP. As such, it is impossible to assess the overall environmental impact of the TSP without this significant component. We maintain that this is an improper segmentation of the EIS as it fails to provide a proper logical terminus and in assigning a management area without an assessment of the environmental impacts, does not allow the Corps to consider alternative proposals for the beneficial use of dredge spoil under the Federal Standard, as there is no accounting for cost until that EIS is completed.

RESPONSE: The Dredged Material Management Plan (DMMP) Appendix J details the recommendation for placement of dredged materials both for construction and future O&M. The main report Section 6.5 details the recommendations of the DMMP. As is stated in the document, the ODMDS is recommended however consideration of beneficial use sites may continue to be evaluated under the PED phase.

- Advanced maintenance seems prudent from an engineering perspective, it is in fact deepening the channel beyond the 47-foot nominal depth. A review of Plates 1-38 reveals that the annotations “50-foot required depth plus 1-foot allowable overdepth,” “48-foot required depth plus 1-foot allowable overdepth” or “48 or 50-foot required depth plus 1-foot allowable overdepth” apply to almost the entire 13 miles of dredging. In other words, most of the channel will actually be dredged to a depth of 49 to 51 feet. We have at different times heard that the overdredge is “implied” in explaining effects of the 45’ and 47’ foot nominal depth dredges. However, as this is not clarified in addressing different sections of the documents its hard to tell if the different sections of the EIS are addressing situational overdredge. The net result is there is little ability to distinguish if these adverse effects have been systematically underestimated in the EIS.

RESPONSE: The EFDC model simulations were run with bathymetric conditions representing the stated project depth plus the overdepth dredging allowance. The evaluated project impacts include the effects of the overdepth dredging.

- In summary, the Environmental Impact Study provided at the deadline for public comments is incomplete, either entirely in unfinished sections of the report, or suffers from a lack of quality caused by a politically contrived and arbitrarily shortened deadline. We have serious concerns that these deficiencies do not comply with the spirit of the National Environmental Policy Act. Finally, we are seriously concerned that, given the shortcomings in completeness and quality, the Corps has significantly reduced their provisions for offsetting mitigation impacts.

North Florida Land Trust has a severe concern, as stewards of lands that will be directly impacted by future dredging efforts, with this EIS. We desire a healthy operating port and appreciate its benefits to our community. However, more important to us is the health of our local ecosystems. Until this study is completed to a greater sufficiency and mitigation of impacts properly accounted for, we cannot support the recommendations of this Environmental Impact Study.

RESPONSE: The USACE has addressed all of the stated concerns by completing the environmental studies, providing the results of those studies to the public for review and comment, and updating the DSEIS. NEPA requires Federal agencies to use the best available information or science to evaluate how a Federal action may affect the human environment. The USACE has used the best available tools to accomplish this goal, and has extensively coordinated with all stakeholders on the proposed evaluation methods and the results.

Old Arlington, Inc.

- We support the position of the St. Johns Riverkeeper asking President Obama to give the Army Corps of Engineers more time to complete the study and make sure the proposed Harbor Deepening Project has been thoroughly evaluated.

RESPONSE: The USACE has completed the study and has provided additional time for the public to review and comment on information developed after the start of the comment period.

Save Rodman Reservoir, Inc.

- Rodman Reservoir has been in existence for over 45 years and has formed its own ecosystem and our answer to this controversy (removing Rodman [Kirkpatrick] Dam as mitigation for the deepening project) is to simply leave it alone.

RESPONSE: Rodman Reservoir has been screened out from further consideration in this study.

Save the Manatee Club

- We request that if this project moves forward, a 30 year moratorium on new dredging from the river mouth to Lake George be implemented to prevent the continued incremental damage of the St. Johns River. Additionally, we request that a cap be placed on the number of vessels permitted to call annually. This number should be lower than the current number of vessel calls since the project is touted to reduce vessel traffic on the river by allowing a smaller number of larger vessels to call.

RESPONSE: USACE dredges only within the Federal channel with determination of where to dredge and how much based on cost/benefit analysis. USACE does not place navigation restrictions on Federal channels. If restrictions are required for safety they are implemented by the St. Johns Bar Pilots. Economic analysis shows projected reduction in overall vessel calls with the deepening project over time.

- Only projects which add shoreline vegetation and SAV back to the river are appropriate mitigation for losses of these resources.

RESPONSE: The proposed project would not directly affect shoreline vegetation or SAV. Salinity and ecological modeling indicates that the deepening would cause salinity stress levels on some SAV beds and some wetlands to slightly elevate. However, this would not result in the loss of any SAV beds or wetlands.

- We are concerned about any loss to manatee forage in the river, which is both an Important Manatee Area and contains critical habitat.

RESPONSE: As stated above, forage for manatees would not be directly affected and no loss of SAV beds or wetlands are predicted from minor increases in salinity due to the deepening.

- We are concerned about any erosion that will increase turbidity, but are equally concerned with the shoreline being reinforced in any way that decreases manatee access to shoreline vegetation for forage.

RESPONSE: Turbidity caused by dredging would be monitored in accordance with state water quality criteria and the state permit. If turbidity exceeds the permit conditions, then the activity causing the exceedence would be stopped until the cause is identified and corrected. The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition. The USACE is not proposing to armor the shoreline and eliminate manatee access to shoreline vegetation. The Jacksonville Port Authority may install different bulkheads and berthing facilities, but this should be in areas already reinforced.

- With regard to sea level rise and its future impact on the River, only the historic level of annual rise (0.4 ft) was considered. No estimates above this baseline were considered when modeling impacts, which seems naïve at best and misleading/dishonest at worst considering what we know about the possible accelerations in sea level rise that are predicted by some models.

RESPONSE: Salinity model simulations were conducted for different future water levels in order to assess salinity impacts if future water levels conform to the Intermediate or High SLC scenarios. This modeling indicated that the Intermediate and High rates of SLC create salinity changes that are far in excess of the project impacts on salinity. This is because significant increases in sea level associated with these scenarios cause sea water to reach much further up the river main stem and further into tributaries and marshes adjacent to the St. Johns River as compared with the Low SLC scenario. Additionally, the higher ocean water levels create higher mean water levels throughout the study area, which permanently or periodically inundates areas that are currently dry. That is, the Intermediate and High SLC scenarios cause far greater salinity changes and other impacts throughout the study area than the deepening project will cause. Project effect on salinity is most critical for the Low SLC scenario. For these reasons the Low scenario is used in the DSEIS to assess environmental impacts.

The Executive Summary of the Hydrodynamic and Salinity Modeling for Ecological Impact Evaluation Report (see Appendix A, Attachment K) states, based on the 10th and 90th percentile of the water level duration curve, the Tentatively Selected Plan (TSP) in 2068 would likely increase tide range by 0.1 ft at Bar Pilot, by 0.2 ft at Long Branch, and by 0.2 ft at Main Street Bridge. Based on the 50th percentile of the salinity duration

curve, the future top layer, bottom layer, and depth-averaged salinities would likely increase with TSP in 2068 by 0.0 – 0.3 ppt from Dames Point to Buckman Bridge and would likely have very small changes upstream of Shands Bridge. The TSP in 2068 would likely not reduce water circulation in the study area.

Figures D.1 – D.5 of Attachment K compare the water level duration curves of 2068 TSP with SLC2 (0.87 ft of sea level rise) and 2068 TSP with SLC1 (0.39 ft of sea level rise). The figures show water level probability of non-exceedance at select locations in the study area — Bar Pilot Dock, Long Branch, Main Street Bridge, Buckman Bridge, and Shands Bridge. Compared to the 2068 TSP with SLC1 scenario, EFDC model results show 2068 TSP with SLC2 elevates water level by approximately 0.5 ft at all five stations, which is approximately equal to the difference between SLC2 and SLC1. Section 2.2 shows with SLC2 causes much more salinity increase than the salinity increase from TSP (compared to without project) in 2068.

Figures D.10 – D.14 of Attachment K compare the water level duration curves of 2068 TSP with SLC3 (2.39 ft of sea level rise) and 2068 TSP with SLC1 (0.39 ft of sea level rise). Compared to the 2068 TSP with SLC1 scenario, EFDC model results show 2068 TSP with SLC3 elevates water level by approximately 2 ft at all five stations, which is approximately equal to the difference between SLC3 and SLC1. Section 3.2 shows with SLC3 causes very much more salinity increase than the salinity increase from TSP (compared to without project) in 2068.

The text of the DSEIS will be revised to indicate where in the appendices one can find the higher mean sea level model results and to clarify the logic behind the use of the Low/Baseline SLC scenario for environmental impact assessment.

- It is unfortunate but not surprising that removal of the Rodman Dam and restoration of the Ocklawaha River has been rejected by the Port as possible mitigation. In truth, that is the appropriate scale of project that should be required to mitigate for the work proposed. Regarding the lands to be purchased for mitigation, it is not clear that these lands will be protected by a conservation easement in perpetuity. This condition should be required and stated explicitly in the report. Like FWC, we are also concerned about the 449 acres of wetland functional losses that may occur along the St. Johns and Ortega Rivers and Julington, Durbin, and Black Creeks. The report states that the cost for adaptive management implementation might be cut in half “if it is determined at 5 years post-construction that the USACE can be released from future monitoring and mitigation activities associated with the project”. We request that an independent panel of qualified scientists provide this assessment, not the Corps itself.

RESPONSE: Restoration of flow and ecological function in the Ocklawaha River may provide ecological benefits to the St. Johns River system; however, the economic and social effects of the restoration would be complex and controversial. This option was

not supported by the non-federal sponsor as a component of a navigation project and was ultimately screened from the study. The USACE has also determined that the proposed deepening would have minor effects on the river's ecosystem and these effects do not justify the removal of Rodman Dam as mitigation. Conservation lands would be purchased to mitigate minor effects, and an ownership agreement sought with an appropriate land stewardship entity. The results of modeling indicated that impacts would be less than that originally anticipated. An interagency team comprised of regulatory agencies and the USACE would assess whether monitoring should continue beyond 5 years post construction.

- The report states that manatees in close proximity to dredging equipment may experience a temporary reduction in their ability to hear or avoid vessels. This danger is marginalized in the report by the suggestion that the impacts "should be brief and transitory in nature". However, cumulatively, over the duration of the construction time frame, the impact of the frequency and duration of this added noise to the environment could be significant and should not be disregarded.

RESPONSE: Protection measures required in the USFWS biological opinion or coordination letter for the manatee shall be implemented.

- If the Port does not have its own Manatee Protection Plan, it should develop one. If it does have an existing MPP, it should be updated.

RESPONSE: 1) JAXPORT complies with the Duval County Manatee Protection Plan. This plan is currently in revision.

2) JAXPORT also maintains its own manatee awareness, protection, and reporting plan for its facilities. Elements of the plan include berth signage with manatee-reporting telephone number for manatee sightings and manatee observation and reporting responsibilities, especially during vessel arrivals and departures.

3) Berth design and fendering systems employed at the terminals provide sufficient space to allow safe to allow safe travel for manatees.

4) FDEP and USACE permits for JAXPORT marine-based construction and maintenance projects incorporate standardized manatee protective measures. JAXPORT requires its contractors selected for such projects to adhere to the permit-specific manatee protective measures.

5) Additionally, JAXPORT contributed to a manatee awareness program flyer developed jointly by the Jacksonville Marine Transportation Exchange (JMTX), City of Jacksonville, and Jacksonville University.

- Funding additional on-water law enforcement patrols to ensure compliance with posted speed zones in the first 14 miles of the River would be an appropriate undertaking for the Port to help offset impacts that will be caused by the introduction of larger ships into the River. We are concerned with existing and possible future levels of vessel-related manatee mortality in the project area and believe more must be done to avoid future watercraft-related take from vessels of all sizes.

RESPONSE: JAXPORT is not in a position to fund additional Florida Fish and Wildlife Conservation Commission law enforcement speed patrols of the St. Johns River. Cargo ships and support vessels such as tug boats transiting between the terminals and the ocean do not travel at high speeds while in the river. Furthermore, it is JAXPORT's understanding that large cargo vessels transiting the St. Johns River within the federal channel are not a common source of vessel-manatee strikes.

- The proposed blasting is of great concern. FWC communicated to the Corps that “Past blasting events in the river have provided insight into the difficulty of performing adequate aerial surveys in this waterway. It is extremely difficult to see marine animals in the river because of the depths, low visibility, and fast currents.” For this reason, among others, FWC “encouraged USACE to consider the no-action alternative because of the high potential for blasting impacts to protected marine animals.” The U.S. Fish and Wildlife Service also expressed concern with the proposed confined blasting technique. The Corps has committed to implement the confined underwater blasting conditions developed for Miami Harbor, for construction and test blasting in the St. Johns. The language relating to protected species observers that was used in Miami should be applied here (FDEP 5/22/12: JCP No. 0305721-001-BI). Due to the challenging nature of this project location, only the most skilled observers, recommended and approved by FWC should be utilized for this project if it moves forward. Aerial survey observations should be contracted to FWC or Mote Marine Lab due to their skill level.

RESPONSE: Pursuant to the Endangered Species Act (ESA), protection measures required in the USFWS biological opinion or coordination letter for the manatee shall be implemented. Also, in accordance with the Marine Mammal Protection Act (MMPA), the USACE will request an Incidental Harassment Authorization (IHA) for blasting operations in manatee habitat. All required measures in the IHA will be implemented.

- The Subject report states that blasting will probably occur in winter when manatees are less likely to be in the area. Unfortunately, there are two unauthorized warm water discharges in the direct vicinity of the project area that continue to attract manatees in the winter months, greatly increasing the likelihood of manatee presence during blasting and other fall, winter, and spring construction time frames. The Jacksonville Electric Authority's (JEA) NGS plant and District 2 Outfall pipe in the St. Johns River attract manatees. Reports detailing the history of the problem are available from the U.S. Fish and Wildlife Service's Jacksonville office and also from JEA. SMC can also provide copies of reports, if desired. In summary, the NGS plant has been plagued in recent years with breaches in their containment wall. This has resulted in leakage of water that has become an attractant to manatees. While JEA claims no current leaks, the possibility of future leakage/attractant issues at this site is a possibility. Manatees access JEA from the River, through the Blount Island Channel, and into San Carlos Creek. The D2 outfall is located in the St. Johns, near the western terminus of the proposed project. After years of discharge that attracted manatees, the majority of the flow was rerouted in

2012. Unfortunately, a major failure in the pipe once again has full discharge coming through the outfall and attracting manatees in 2013. Manatees have been documented at both these sub-optimal sites during non-summer months in recent years, resulting in rescues and cold stress mortality. The Corps and Port need to stay engaged in the process to correct these unauthorized attractants and make sure that manatees are no longer overwintering in this area by the time construction begins (if authorized), as it would greatly increase the likelihood of manatee presence in the project area. It will also take several years once the discharges stop, for manatees who have become reliant on these sites, to modify their behavior and move on to other sites.

RESPONSE: The USACE will investigate these discharges. As previously stated, the dredging would be conducted in compliance with ESA and MMPA requirements.

- We are concerned that the altered residence time of river water under with-project conditions will increase the potential for algal bloom development. We hope that your modeling is correct, and that changes to phytoplankton abundance will be minor, because we have seen the dire consequences of algal blooms on other river and estuarine systems and such impacts could be devastating on the St. Johns.

RESPONSE: The EFDC model simulations indicated that the proposed project will cause only slight changes in water age. The deepening is unlikely to cause increased frequency or duration of harmful algal blooms due to water age changes. Evaluation of CE-QUAL-ICM water quality model chlorophyll a results indicate the proposed project will not increase the frequency of algal blooms.

Audubon

- The project timeline for the Jacksonville Harbor Navigation Study has been reduced by 14 months under the Federal “We Can’t Wait Initiative.” This has restricted the timeframe for environmental assessments and limited the Corps’ ability to thoroughly evaluate potential impacts. Rather than risk unnecessary damage to the lower St. Johns River system and the wildlife that depends on it, the Corps should extend the study period by at least another year and engage in more detailed analyses of environmental impacts.

RESPONSE: The USACE has addressed all of the stated concerns by completing the environmental studies, providing the results of those studies to the public for review and comment, and updating the DSEIS.

- NEPA requires that the Corps undertake a robust analysis of impacts. The tidally impacted reaches of the lower St. Johns River system include the largest and most diverse system of salt marshes on Florida’s east coast, as well as very significant fresh water wetlands and SAV beds within the project footprint. These marshes and forested wetlands are important to a wide range of species and exist in a delicate, dynamic equilibrium with the river itself. Although the Corps has noted that threatened and

endangered species including manatees, right whales, sea turtles, piping plovers, red knots, wood storks, short-nosed sturgeon and smalltooth sawfish may occur within the project footprint, systematic baseline surveys of birds and other wildlife sufficient to fully understand their numbers, habitat use and vulnerabilities have not been conducted. Audubon recommends that an appropriate level of baseline monitoring with enough coverage to produce an accurate picture of existing conditions should be employed for at least a year before a new Draft EIS is developed. Results can then inform models to improve their performance. Installation of metering devices to track water level, salinity, turbidity, and periodicity of water level changes throughout the project life should be installed now in all areas that might be affected by dredging. Similarly, systematic surveys of birds and other wildlife should be conducted through at least one annual cycle.

RESPONSE: NEPA requires Federal agencies to use the best available information or science to evaluate how a Federal action may affect the human environment. The USACE has used the best available tools to accomplish this goal, and has extensively coordinated with all stakeholders on the proposed evaluation methods and the results.

- Largely due to the reduced timeline, the Corps has been forced to revise the DEIS/GRR-DEIS several times. New and often critical information has been released in piecemeal fashion over a period of several months, and some information is still unavailable for review. Constant revisions and addenda to the DEIS/CRR-DEIS and inconsistencies within the document itself have caused an unnecessary level of confusion and hampered the public's ability to provide meaningful input. In order to allow for an appropriate level of public review and participation, the Corps should establish a new deadline for comments only after it has completed and compiled all relevant baseline studies and impact assessments in single, comprehensive document.

RESPONSE: The accelerated schedule for this complex study has been challenging for stakeholders and the USACE. However, the USACE did conduct a number of presentations, workshops, and meetings involving the public and resource agencies during the months prior to release of the DSEIS on May 31, 2013. The most recent public meeting was held on September 24, 2013, and all studies were completed and made available to the public by September 30, 2013. The original comment due date of July 15 for the DSEIS was ultimately extended to October 24, 2013.

- The GRR-SEIS allocates 75% of its mitigation dollars to monitoring for unanticipated project impacts. Monitoring is not equivalent to mitigation, and the uncertainty surrounding project impacts is due to the insufficiency of the supporting information and the Corp's undue reliance on model estimates. The remaining 25% of mitigation dollars are allocated to purchase mitigation bank credits, upland buffer lands, or credits for agricultural nutrient reductions; without sufficient primary research to better predict project impacts, the Corps cannot demonstrate these mitigation proposals will remedy losses. Audubon recommends the Army Corps undertakes the primary research

necessary to more accurately predict environmental impacts as required by NEPA, and propose more appropriate and proportional mitigation before finalizing the EIS.

RESPONSE: As previously stated, NEPA requires Federal agencies to use the best available information or science to evaluate how a Federal action may affect the human environment. The USACE has used the best available tools to accomplish this goal, and has extensively coordinated with all stakeholders on the proposed evaluation methods and the results.

- More than a century of navigational improvements to the LSJR have had a tremendous impact on the quality and availability of habitat for coastal birds. This dredging proposal presents an opportunity to use dredged material to benefit these species impacted by past and proposed activities. Audubon recommends that the Corps consider the effects of proposed dredging on nesting activities by beach-nesting birds, and include the management of Dredged Material Management Areas (DMMAs) for optimal beach-nesting bird habitat in its revised mitigation proposals. This proposal provides the opportunity to improve the outlook for some of Northeast Florida's fastest declining bird species, with activities in aid of the Corps' primary mission.

RESPONSE: The USACE will continue to investigate beneficial uses of dredged material. However, per the recommended plan, dredged material would be placed in the Ocean Dredged Material Disposal Site. In the event that suitable dredged material is placed on the beach, then this action would be performed in compliance with the Migratory Bird Treaty Act (MBTA). Placement activities within the Jacksonville Harbor DMMAs continue to be performed in compliance with the MBTA.

Public Comments (Individual Stakeholders)

- We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of aquatic life in our beautiful river. I fully support the deepening of the Jacksonville Harbor.

RESPONSE: The USACE will forward all public comments to its chain of command and Congress for further consideration.

- Rodman Reservoir offers significant recreational fishing opportunities, helps to support the local small business community, and has formed its own ecosystem. Rodman Dam should not be removed as mitigation for the Jacksonville Harbor deepening project.

RESPONSE: Rodman Reservoir has been screened out from further consideration in this study.

- The deepening should not be performed because it would cause too much environmental damage. The cost of the project is too great and the benefits too uncertain for this project to move forward.

RESPONSE: In compliance with the National Environmental Protection Act, the USACE has prepared an SEIS which evaluates environmental impacts associated with the proposed deepening. This assessment, as well as public comment, will be forwarded to the USACE chain of command and Congress for further consideration. Impacts are being mitigated.

- There are too many unanswered questions to be doing this and the river may be harmed. All negative environmental concerns must be addressed before a final decision is made.

RESPONSE: In compliance with the National Environmental Protection Act, the USACE has prepared an SEIS which evaluates environmental impacts associated with the proposed deepening and this includes extensive modeling and analyses along with mitigation and monitoring of impacts. This assessment, as well as public comment, will be forwarded to the USACE chain of command and Congress for further consideration.

- The USACE should be held responsible for bank losses caused by blasting and dredging operations. This deepening project needs to include protection for our properties. There are other ways to remove the rock that should be considered besides blasting. It may be more expensive, but our houses and property are expensive and important to us as well.

RESPONSE: The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition.

- How will the deepening affect flooding along tributaries?

RESPONSE: The largest changes in tributary storm surge due to the project are in the Mill Cove, Dunn Creek, Broward River and Trout River area where the largest increase in storm surge maximum water surface elevation is less than 0.3 ft for deepening only and deepening plus historic sea level change scenarios. A description of the results is located in Appendix A – Engineering, Attachment J. Hydrodynamic Modeling for Storm Surge and Sea Level Change.

- Tributaries, like Pottsburg Creek, should be dredged before the river is deepened.

RESPONSE: Pottsburg Creek is outside of the federal channel and located approximately at river mile 22. The proposed area of deepening is along the St. Johns River from the entrance channel to approximately river mile 13.

- The proposed deepening should be paid for by people that are benefitting.

RESPONSE: The proposed deepening will reduce the cost of trade. The beneficiaries of this trade include carriers, shippers, dock workers, truck drivers, producers, and consumers. Everyone involved in this chain of trade beneficiaries will pay taxes. Tax revenue will be used to help pay for the deepening. Therefore, the proposed deepening will be paid for by the people that benefit from the deepening.

- Please keep the comment period open until stakeholders have an opportunity to review all reports and analyses on the project.

RESPONSE: The public comment period was extended to provide the public an opportunity to review and comment on all reports and analyses. The USACE will consider comments on this FSEIS.

- Will blasting affect structures along the shoreline?

RESPONSE: Blasting will not adversely affect structures along the shoreline. Blast design and testing will determine the appropriate blasting parameters to avoid impacting structures. Testing will start using rules-of-thumb blast parameters using safe, fractional loading rates to arrive at allowable parameters that will protect structures.

- Deepening along the Mayport waterfront on the east side of Cut 7 will cause bank subsidence. What does the USACE plan to alleviate the damage?

RESPONSE: The USACE does not anticipate increased shoreline erosion or subsidence as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition.

- What is the reason for deepening?

RESPONSE: The Cost-Benefit analysis shows that the national economic development (NED) benefits are greater than the costs of deepening. Thus, it is beneficial to deepen the harbor.

- If we deepen the channel, then we will increase the salinity of the aquifer and we will have to construct desalination plants.

RESPONSE: The primary public drinking water supply in Jacksonville is the Floridan Aquifer which is found at depths on the order of 300 feet below surface. There is

considerable thickness of intervening low permeability material that will protect this public drinking water supply.

- Dredged material from the St. Johns River should not be placed near the beach. It needs to be taken further offshore.

RESPONSE: The USACE proposes to take the majority of dredged material resulting from the deepening to an approved Ocean Dredged Material Disposal Site. If any material is placed on the beach, then it will be placed in accordance with the Florida Sand Rule and applicable permits.

- Can the USACE explain why it is not mitigating impacts with a restoration project that removes part of a defunct navigation project such as Kirkpatrick Dam?

RESPONSE: The USACE has screened out the removal of Kirkpatrick Dam from further consideration in this study. The environmental modeling and effects assessment has determined that the effects associated with the deepening would be minor, and could be offset by the purchase of conservation lands.

- This plan is being coordinated with the regulatory agencies. What will the USACE do to minimize turbidity caused by dredges?

RESPONSE: Turbidity caused by dredging would be monitored in accordance with state water quality criteria and the state permit. If turbidity exceeds the permit conditions, then the activity causing the exceedence would be stopped until the cause is identified and corrected.

- The study should consider a method of dredging that prevents sediment from being deposited in nearby tributaries.

RESPONSE: Sedimentation in tributaries occurs as a result of natural processes and human related activities (i.e. erosion of construction sites within a watershed, erosion of shorelines that have been destabilized by removing vegetation, etc.). The slight increase in tide range, associated with the deepening, will result in a slight increase in flow velocity in tributaries. The slight increase in flow velocity will likely not increase the present rate of siltation in the tributaries, and it may decrease the rate of siltation.

- Geological testing will be needed to understand the depths and integrity of the confining layer to avoid contamination of the Floridan Aquifer with river/salt water.

RESPONSE: There is considerable documentation of confining material based on drilling logs from the county and the state and in publications, "The lithostratigraphy of the Hawthorn Group (Miocene) of Florida". The Floridan Aquifer is a confined aquifer, so the hydrostatic pressure is upward which would tend to repel the downward force of river water.

- Has the impact of blasting and dredging the channel been studied for the effects it will have on the habitat on migratory waterway of redfish?

RESPONSE: The USACE has prepared an Essential Fish Habitat Assessment and has completed modeling efforts to determine deepening effects on fisheries. These analyses indicate that the deepening would have negligible or minor effects on fisheries including redfish.

- I believe the harbor deepening will cause silting in of tributaries such as Shipyard Creek. I would like to see the current project include monitoring the water depth at the creek mouths along the 13 mile project area to monitor potential adverse effects, and a trigger process for mitigation action if additional silting is found as the project moves forward.

RESPONSE: The slight increase in tide range, associated with the deepening, will result in a slight increase in flow velocity in tributaries. The slight increase in flow velocity will likely not increase the present rate of siltation in the tributaries, and it may decrease the rate of siltation.

- Dredged material should be placed in the mountains not in the floodplain.

RESPONSE: The current Dredged Material Management Plan (DMMP) recommends use of the Ocean Dredged Material Disposal Site (ODMDS) for dredged material.

Public Comments (Academic Institutions)

University of North Florida

- The proposed deepening project poses an imminent risk of short-term disturbances to dolphins and other wildlife through elevated noise levels, increased water turbidity, and the potential release of toxins during river dredging, blasting and construction operations. In addition, the project may generate substantial long-term effects through changes in salinity, prey distribution, and increased large commercial vessel traffic.

RESPONSE: With the exception of blasting operations, the deepening project will not likely produce noise or turbidity levels in excess of those produced by current maintenance dredging activities in the project area. Turbidity will be monitored during all dredging per the future DEP permit. Previous sediment assessments do not indicate toxic sediments within the project area. Additional sediment testing will be performed during the MSRPA Section 103 concurrence process and must be authorized by USEPA prior to disposal into the ODMDS. Additional environmental protection requirements during blasting operation will be coordinated with the appropriate agencies prior to commencement.

The fisheries data suggest that prey distribution will shift upstream slightly, with losses and gains of relatively small areas. Ten pseudospecies (species of specific size and month of collection) showed shifts out of the western side of Mill Cove. However, five other pseudospecies that also had salinity habitat in Mill Cove did not change. It seems likely that if habitat space in Mill Cove becomes available through salinity shifts, other species with habitat ranges more suited to the changed salinity will expand their presence and new species may enter the available habitat space, reducing or eliminating the effect of the first habitat shift.

Agency Comments

Florida Department of Environmental Protection

- We find the report to be “conditionally consistent” pending inclusion of the following information to provide reasonable assurance that state water quality standards will not be violated and that the activity is not contrary to the public interest:

1. Anticipated changes in salinity in the St. Johns River, its tributaries and adjacent marshes due to the proposed project compared to existing conditions. These changes should be evaluated in terms of the system’s normal fluctuations through drought and high river flow and not just the median system condition. Staff supports the suggestion of the SJRWMD to conduct a dye tracer study to resolve concerns regarding the use of “water age” exclusively.

RESPONSE: The effects of proposed project alternatives on salinity and water age are based on application of a LSJR hydrodynamic model developed, calibrated, and verified by the SJRWMD. The model, refined for the Jacksonville Harbor Deepening evaluations, provides the best available estimate of salinity and water age changes that may occur with any of the project alternatives.

2. A complete evaluation of adverse impacts to wetlands, submerged aquatic vegetation, invertebrates and fisheries as a result of the salinity changes. The Department cannot evaluate possible mitigation measures without a complete analysis of salinity, and other water quality changes translated into impacts on natural resources.

RESPONSE: These evaluations have been completed and are available for review and comment.

3. An updated analysis of the potential impacts of the deepening on the aquifer.

RESPONSE: The primary public drinking water supply in Jacksonville is the Floridan Aquifer which is found at depths on the order of 300 feet below surface. There is

considerable thickness of intervening low permeability material that will protect the public drinking water supply. The surficial aquifer is different than the Floridan Aquifer.

The USGS groundwater modeling has been included, and it looked at several possible geologic scenarios to test the susceptibility of the surficial aquifer to salinity impacts. The geologic scenarios ranged from simple to complex based on uniform subsurface conditions and available information, not actual conditions. We know that the rock for the surficial aquifer is not uniformly distributed throughout the area.

4. An analysis of the anticipated increase in storm surge and possible increase in flooding.

RESPONSE: The effects of the proposed project on storm surge are based on FEMA's Georgia Northeast Florida storm surge study methodology. The application of the ADCIRC+SWAN hydrodynamic and wind-wave models, refined for the Jacksonville Harbor Deepening evaluations, represents the best available estimate of storm surge changes that may occur due to the proposed project (See Attachment J of Appendix A - Engineering).

5. An analysis of the impact of the proposed project on coastal processes.

RESPONSE: An evaluation of coastal processes and channel shoaling rates at the entrance to the St Johns River due to the project is presented in Appendix A – Engineering, Attachment H, CMS Hydrodynamic Modeling for Coastal Processes and Channel Shoaling. Since the proposed Jacksonville Harbor project includes very little change to the existing entrance channel area no significant project impacts to coastal processes or channel shoaling are expected.

6. Completion of the ship wake modeling and an evaluation of impact to river and creek banks. If the banks of the waterways are likely to erode, plans to prevent sediment from entering waters of the state causing chronic turbidity should be included.

RESPONSE: The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel (generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition) (see Appendix A – Engineering).

7. Demonstration that dredging will not result in other water quality standards violations due to substances released during the deepening process.

RESPONSE: Potential sources of Hazardous, Toxic, and Radioactive Waste (HTRW) within the project area are evaluated in sections 2.2.14 (pg. 34) and 7.2.14 (pg. 192) of the FSEIS. USACE has performed two Hazardous, Toxic, and Radioactive Waste (HTRW) Assessments within the project area: the Jacksonville Harbor Mile Point Project (2004) and Jacksonville Harbor Navigation Study (2009). Neither assessment identified contaminants of concern within the Harbor Deepening project area. These assessments and their supporting sediment data—along with new information acquired since these assessments were compiled, will be provided with the DEP permit application.

- A permit will be required from the Department to conduct this work. We encourage the Corps to complete an acceptable environmental analysis, and develop a comprehensive mitigation plan, before making any application.

RESPONSE: The environmental analysis has been completed as well as a proposed mitigation plan.

- The deepened channel will allow a greater volume of seawater to penetrate upstream in the St. Johns River, which could:
 - Increase tidal amplitude within the river and adjacent marshes.
 - Impact freshwater wetlands and submerged aquatic vegetation in areas of increased salinity.
 - Change the composition and diversity of plant and animal communities in areas of increased salinities.
 - Change water residence times.
 - Alter plankton species composition and growth patterns. Alter dissolved oxygen dynamics in the river main channel.

RESPONSE: The results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity, water level, and water age relative to the baseline (without project) condition. The results of the CD-QUAL-ICM model indicate little or no adverse effect on dissolved oxygen or chlorophyll a. The effects of these changes on ecological communities, as described within the DSEIS and the Ecological Modeling report, are correspondingly small relative to the baseline condition.

- Although the physical and water quality changes in the Lower St. Johns River resulting from channel deepening alternatives may be relatively small, changes at specific locations may be of greater magnitude or have greater implications for the local ecosystem. The net result of changes could include significant negative consequences.

Salinity changes may modify the biological community, altering or eliminating vegetative composition (*i.e.*, submerged aquatic vegetation or wetlands) and thus altering or eliminating habitat for species using those communities. Species composition may shift to more salinity tolerant species.

RESPONSE: We agree with the reader that small changes at specific locations may have greater implications for local flora and fauna. The USACE has extensively assessed possible salinity changes and related floral and faunal changes. The USACE has developed detailed analyses that use the available information in a variety of evaluations to model salinity changes and model the effects of those changes. The commenter is encouraged to read the full set of appendices providing these analyses. The river currently exhibits wide variation in salinities, and the salinity models were calibrated using observed data. The salinity models were then used to assess changes in the wetland, submerged vegetation, benthic macroinvertebrate, and fish communities. The findings are available in the appendices to the FSEIS.

- Changes in the length of time water remains in the river system may alter phytoplankton dynamics and slightly increase the potential for algal bloom development.

RESPONSE: The EFDC modeling indicates little change in water residence time as a result of the deepening project. The CE-QUAL-ICM model indicates little change in chlorophyll a or dissolved oxygen.

- The proposed project would not cause an upstream migration of salinities, but would affect salinity frequencies mostly within the transitional zones of large river and creek systems. Based on the modeling results, it was estimated that wetlands within the affected areas would experience a 2-3% increase in salinity frequency of >1 ppt. Affected areas within the Lower St. Johns River would be between Mile 44 and Mile 50. Major affected tributaries of the St. Johns River include Julington, Durbin, Black, Pottsburg, Cedar and Dunn Creek, and the Trout and Ortega Rivers.

RESPONSE: The revised FSEIS describes a much smaller effect as compared to the effect described above (see Appendices D and E).

- The effects in the wetlands would mainly consist of an acceleration of wetland conversion from tidal swamp to tidal marsh.

RESPONSE: The revised FSEIS describes a much smaller effect as compared to the effect described above (see Appendices D and E).

- With the project in place, it is expected that habitat utilization of the forested wetlands will be reduced for freshwater species, and although there may be increased utilization

by estuarine species, a loss was indicated as a result of the project. Certain fish and invertebrates may be driven slightly upstream by the increases salinity frequencies.

RESPONSE: Ecological Modeling for Jacksonville Harbor Deepening GRR-II, Appendix D of that report details changes in fish habitat in the main stem of the river. The results suggest that slight upstream shifts in preferred (25%-75% of identified salinity habitat) space of fish pseudospecies will likely occur. However, results indicate that these changes are small for most of the fish collections tested. Larger percent habitat changes were typically associated with small salinity habitat areas, and the habitat shifts did not eliminate any type of habitat within the preferred salinity zone. Average shift for all pseudospecies tested for the 2018 scenarios was 1% (1% positive increase in salinity habitat).

- Any tree mortality could reduce nesting areas for birds and habitat for reptiles and amphibians. Soil subsidence would likely occur within areas nearest the shoreline that receive a higher frequency of inundation. As elevations decrease, a corresponding change in vegetation would occur with plants adapted to both longer hydroperiods and higher salinity frequencies. Transitioning plant communities would be most visibly noted among those tree species that are more salt intolerant.

RESPONSE: The effects assessment has determined that the deepening may slightly contribute to on-going changes in plant composition and soil subsidence. Tree mortality resulting from the deepening are not anticipated.

- This may have an impact on permitted surface water dischargers as well as the above listed impacts to water quality and the environment.

RESPONSE: The EFDC modeling indicates little change in water residence time as a result of the deepening project. The CE-QUAL-ICM model indicates little change in chlorophyll a or dissolved oxygen. Thus, no changes to TMDL allocations within the Lower St. Johns River watershed are anticipated. Additionally, any changes in basin characteristics—including harbor bathymetry-- will be incorporated into the basin TMDL program via the subsequent 5-year Basin Assessment performed after completion of construction. No specific changes to an existing TMDL program would be made between the regular 5-year basin cycles.

- The document mentions wastewater treatment plant improvements and the temperature effects and attraction for manatees of these discharges. Staff recommends that future documents state the need for proper location of the outfalls by GPS. Care must be taken during dredging operations to prevent damage to any wastewater outfall (or other utility infrastructure) located in the Lower St. Johns River. Some outfalls may be near the dredge zone and some outfalls are buried or drilled into the riverbed rock could be exposed.

RESPONSE: During the Preliminary Engineering and Design Phase of the project, the locations of all potential utility outfalls and crossings will be geo-referenced and denoted in the project plans and specs. These locations will be coordinated with DEP during the permitting process; final project Plans and Specifications will be provided to DEP after contract advertisement for final confirmation.

- A water age data set from the EFDC model output is applied to this project for assessing water circulation, ecologic systems, and water quality potential impression by the proposed channel deepening activity. The above-mentioned draft document provided several comparisons of the EFDC modeled water age for the No-Action (baseline) and project alternatives. It appears that the water age in the main channel mostly varies between 30 and 210 days with an interval of 30 days; however, the comparisons only provided a percentage of greater (older) than 30 to 210 days at select locations for each of the alternatives. In other words, there is no exact water age at selected locations with each of the proposed alternatives.

RESPONSE: The revised ecological modeling report includes figures showing daily water age values.

- The water transport time scale is important because it controls the estuarine ecosystem. The time scales for pollution assessment can be considered using three commonly used methods: (1) flushing time, (2) residence time, and (3) water age. Transport time scales are useful tools to quantify the importance of hydrodynamic and processes in the transport and fate of pollutants in coastal and estuarine water systems. The methodologies to compute age are the same as those used for residence time. However, if the mixing of the incoming and existing waters in the estuary is not completed in each tidal cycle, the flushing time will not equal the residence time and, therefore, it is not the water age/residence time, but the flushing time that characterizes water circulation.

Flushing time is a useful concept in estuarine management. Short flushing time is associated with high water circulation or water that has newly entered the river through the river's lateral inflows. A long flushing time is associated with low water circulation or with water that has resided in the river (travelling upstream and downstream with tidal influence) for a relatively long time. Thus, fast moving water will have a short water age and stagnant water will have a long flushing time. Unfortunately, this draft does not conduct any type of flushing time study.

Section 62-302.500, Florida Administrative Code (F.A.C.), requires that surface waters be free from nuisances and toxicity. Section 40C-4.301(1)(e), F.A.C., provides conditions for permit issuance that prohibit adversely affecting water quality. Section 12.2.4.2 of the SJRWMD Applicant's Handbook, Management and Storage of Surface Waters, requires an applicant to address long term water quality impacts of a proposed activity and Section 12.2.4.3, defines flushing time, as the time required to reduce the concentration

of a conservative pollutant (mass) to ten percent (10%) of its original concentration. Please provide the different segments' flushing time with several different forcing scenarios to show relative effects of various mechanisms on flushing and to compare the flushing rates at various segments.

RESPONSE: It is not necessary to further show the flushing characteristics of the with project scenario as enlargement of the conveyance capacity (e.g., channel dredging) between an estuary and the ocean will promote better mixing and decrease flushing time.

Florida Department of Environmental Protection (Additional Comments)

- The cross-sectional models developed in this (USGS) study do not necessarily simulate actual conditions due to a lack of detailed water table levels, solute concentration data and hydrogeologic information. The above-noted lack of background information indicated monitoring of groundwater or water table levels and groundwater quality along the deepened Navigation Channel or near the riverine corridor of the St. Johns should be instituted. For greater permitting assurance, monitoring of the Limestone unit along the northern periphery of the St. Johns River near modeling cross-section d-d', would determine if any changes in salinity occur within the SAS after the Navigation Channel has been dredged.

The models did examine the potential effects of deepening the existing Navigation Channel (River Miles 0-13) on saltwater intrusion in the SAS under a range of possible hydrogeologic conditions. Based on the simulation results of these conditions, the risk of dredging-induced saltwater intrusion affecting the SAS water supply is estimated to be low. The largest simulated increases in groundwater salinity were mainly in areas with little demand for groundwater from the SAS.

The proposed dredging operations pose no risk to salinization of the deeper Floridan aquifer system, as the Intermediate Confining Unit (300-500 feet in thickness) provides sufficient hydraulic separation between the SAS and FAS in the study area.

RESPONSE: We question the value of monitoring the Limestone unit along the northern periphery of the St. Johns River near USGS model cross section d-d'. The Limestone in question has already been breached and is currently exposed to similar salinities to those that will be present post dredging. The portion of the limestone that has not been exposed by dredging has had many decades of time for saline water to infiltrate the Limestone in proximity to the channel. In addition, the land surface at the area in question was created from dredge material placed atop topography that was barely above sea level and that had been subjected to elevated salinities from tides. In short,

the area already has been subjected to high salinity water with no long-term protection of the Limestone. Chloride concentrations within the limestone in this area contained over 2800 mg/L chlorides from testing reported in 1983. (Spechler and Stone, 1983, "Appraisal of the Interconnection between the St. Johns River and the Surficial Aquifer, East-Central Duval County, Florida)

- Section 17 (Pre-treatment of Rock) provides a summary of the USACE Safety Zone Requirements to be implemented during the blasting of limerock for the deepening of the St. Johns Navigation Channel. However, the USACE's reliance on visual sighting of marine mammals (manatees, dolphins, etc.) and other aquatic species of concern (sawfish, etc.) may be ineffective due to the darker coloring of riverine waters in the St. Johns River. Also, the USACE should incorporate the usage of side-scanning sonar for locating larger marine mammals and aquatic species of concern, as well as the usage of air bubble curtains to minimize or prevent the movement of smaller aquatic species into the safety zones during active blasting operations.

RESPONSE: Pre-treatment protection measures required in the USFWS and NMFS biological opinions or coordination letters shall be implemented. Also, the USACE will apply for an Incidental Harassment Authorization (IHA) from the NMFS and USFWS for the proposed blasting. The blasting plan will comply with measures stated in the IHA Monitoring Plan.

St. Johns River Water Management District

- The draft GRR II/SEIS incorporated guidance from Engineering Circular (EC) 1165-2-211. District staff concur that EC 1165-2-211 contains an acceptable methodology for addressing sea-level rise within Florida.

RESPONSE: No response needed.

- An adaptive management monitoring plan for salinity should be designed to validate or improve the turbulence closure scheme within the Environmental Fluid Dynamics Code (EFDC) hydrodynamic model. The turbulence closure scheme is a key prior hypothesis for predicting salinity dynamics, including vertical stratification, of the lower St. Johns River, particularly within the deep navigational channel. Such a focus would allow for adaption of the model tools as well as the possible adaption of resource management.

RESPONSE: The Corrective Action Plan includes a hydrodynamic modeling component which includes setup and calibration and verification tasks. Calibration and verification of the hydrodynamic model will include performance optimization of hydrodynamic and transport processes (including vertical stratification through adjustment of model parameters (including turbulence closure).

- The District included a channel deepening analysis as part of a potential future conditions analysis for the District’s 2012 Water Supply Impact Study (WSIS). Salinity alterations obtained for the WSIS are similar to the draft GRR II/SEIS data, given the restricted channel deepening to Segment 1 (river mile 0 to 13), which minimizes upstream impacts to salinity. However, there are two results concerning salinity effects that warrant additional explanation in the final GRR II/SEIS. The first is the lack of a surface salinity response at the Buckman Bridge for the 46-foot deepening scenario (Table 49). The second is the decrease in bottom salinity at Dames Point (Table 49). The first results indicate increased stratification at the Buckman Bridge. The second result could indicate decreased stratification within the navigational channel adjacent to Dames Point. Therefore, the lack of a surface salinity response at the Buckman Bridge and decrease in bottom salinity at Dames Point (Table 49) require further explanation in the final GRR II/SEIS. In addition, changes to vertical stratification should be directly reported and analyzed, since alterations to stratification can affect (river bottom) dissolved oxygen, vertical mixing, and estuarine circulation.

RESPONSE: In the EFDC production modeling report, salinity duration and water age duration curves and tables already provide information on potential changes in the vertical stratification as changes are presented for all the vertical layers of the EFDC model.

- The analysis of flushing should be augmented with other methods, such as passive dye tracer experiments or a 2-equation model for “water age” to track separately the age of freshwater. The present implementation for water age in the EFDC hydrodynamic model includes water imported from the continental shelf adjacent to the river mouth. Changes to tidal flushing of the saline portions of the St. Johns River, then, can be difficult to interpret using only water age. Tracer experiments would also be useful for assessing changes to vertical mixing rates and estuarine circulation due to changes in stratification between Dames Point and the Buckman Bridge.

RESPONSE: The USACE believes that the analysis of flushing performed adequately evaluates the effect on water age. Tracer dye experiments are beyond the scope of this study.

- The effects of salinity alteration on submerged aquatic vegetation (SAV) and wetlands were analyzed both with and without sea-level rise to consider how the project would affect current and future conditions. The decision to examine both conditions seems prudent, given that non-linear interactions between channel deepening and sea-level rise on salinity alternations are possible. This analysis demonstrated that salinity has been increasing naturally upstream to about the Shands Bridge due to sea-level rise, and the proposed channel deepening would accelerate the effects of increasing salinity.

RESPONSE: The analysis did not examine effects of past sea level rise on salinity. The modeling shows the upstream shift of higher salinity water but makes no assessment about “accelerating” effects.

- The suite of modeling tools used for the draft GRR II/SEIS indicates a high level of commitment by the Corps to a detailed hydrodynamics analysis. However, the draft GRR II/SEIS did not contain all of the hydrodynamic and water quality modeling planned for the final GRR II/SEIS. In particular, the draft GRR II/SEIS does not provide the final modeling scenarios for the Tentatively Selected Plan (TSP). Further review of those modeling components that are not yet available appears necessary, and should include: (a) hydrodynamic and water quality modeling analysis of the TSP, (b) storm surge modeling, and (c) modeling of the effects of increased channel salinity within adjacent tributaries and salt marshes.

RESPONSE: Hydrodynamic, water quality, and tributary salinity analyses are complete and included in the revised documents.

- Section 2.2.3 (page 15) of the draft GRR II/SEIS indicates that a major factor governing the upstream extent of salinity is net freshwater discharge entering from the Astor area. Section 2.2.3 should be revised to address the substantial freshwater discharge entering the lower St. Johns River upstream from Astor, including the Ocklawaha River.

RESPONSE: Ocklawaha inflow was one of the major inflows built into the model.

- Appendix D of the draft GRR II/SEIS indicates that the greatest salinity stress effects occurred at the 90-day time scale. However, the District’s WSIS showed that the greatest salinity stress effects occurred at the 7 and 30-day time scales. The final GRR II/SEIS should include model results for shorter time scales or explain why only the 90-day time scale results were evaluated.

RESPONSE: We evaluated effects with the 90-day time scale because initial examination of the results indicated the greatest number of days of SAV salinity stress occurred with the 90-day assessment.

- Appendix D (page 20) indicates that additional stress imposed by any of the proposed project alternatives will likely contribute to upstream migration of the northern extent of SAV in the lower St. Johns River. However, the final GRR II/EIS should explain how SAV will migrate upstream in a compensatory fashion considering that extant SAV already occupies available littoral habitat upstream of the impact zone.

RESPONSE: The latest revision of the ecological modeling report does not contain the referenced statement. However, the referenced statement referred to the downstream limit of SAV (*V. americana*) distribution set by salinity conditions. If salinity increases,

whether due to sea level rise, drought, project effects, or other factors, the downstream extent of SAV will shift upstream due to salinity stress.

- The draft GRR II/SEIS discusses the timing of high tide as a means to move deep-draft vessels into and out of harbor with a one-foot tolerance for ship access. The final GRR II/SEIS could address whether the density of water was considered as a factor in accommodating deep-draft vessels, considering the wide density of water range found in the Jacksonville Harbor.

RESPONSE: The existing conditions for the deepening study assumed construction of the Mile Point Project, which should remove the current navigation (tidal) restriction on deep draft vessels. Density of water, which is influenced by salinity level, is one of several parameters that are considered in ship simulations. Project depth design was conducted in conformance with Corps of Engineers guidance requiring two feet of underkeel clearance between the bottom of the vessel and the surface of the channel bottom. This requirement is 3 feet of underkeel clearance between the bottom of the vessel and the channel bottom, when the channel bottom is rock. Channel depth design is not conducted with the intended result that there would be only one foot of underkeel clearance during vessel movement along the channel alignment. When ships call at ports with fresh or brackish water, the ship draft will increase because of a decrease in density of the water. The difference in unit weight between salt and fresh water is from 64.043 lb/cu ft to 62.366 lb/cu ft or 1.68 lb/cu ft. Therefore the ship draft will increase by 2.619 percent going from seawater to fresh water; brackish water at half the salinity would be 1.3095 percent. A ship with a 35 ft draft would be increased in fresh water to 35.9165 ft or about a 1 ft increase. A maximum allowance of 1 ft is appropriate in cases where the port is located in fresh water; 0.5 ft is recommended when the port area is brackish. Jacksonville Harbor is not a fresh water port. The GRR-2 deepening project applies to the downstream portion of the river, from the intersection with the Atlantic Ocean, upstream to river mile thirteen. This section of the river is dominated by salt water. Professional harbor pilots from the St. Johns Bar Pilot Association are on the navigation bridge of deep-draft vessels that use the federal channel. They are aware of the river's salinity state during variations from seawater density that may result from large storm related freshwater input. The pilots constantly monitor channel depth and vessel underkeel clearance with instrumentation located on the control panel.

- Section 2.2.6.1 (page 20) of the draft GRR/SEIS addresses salinity-based ecological zones for the St. Johns River. The classification of river segments upstream of the Buckman Bridge [by Sucsy (2012)] as oligohaline is based on the explicit salinity ranges of the Venice classification system, which holds that the upstream reaches of estuaries with salinities greater than 0.5 (and below 5) practical salinity units (psu) are oligohaline. However, the implicit intent of the Venice oligohaline classification is to demark portions of river estuaries that are the maximum upstream encroachment of marine salinity. However, the St. Johns River has naturally high dissolved solids input, that are

(on average) greater than 0.5 psu above the maximum upstream encroachment of marine salinity. To help clarify this issue in the final GRR II/SEIS, District staff recommend noting that the classification of portions of the St. Johns upstream of the Buckman Bridge as oligohaline is based on an explicit interpretation of the Venice classification system, and that this salinity is not caused by marine water encroachment, but by naturally high dissolved solids input from springs and connate water upwelling.

RESPONSE: The FSEIS and related appendices include modified language to reflect that causes of existing salinity levels in the river.

- District staff recommend the period of record for the mean salinity values be included in Section 2.2.6 of the final GRR II/SEIS, to allow for interpretation relative to prolonged drought.

RESPONSE: The period of record is described in the FSEIS (see Appendix A).

- Chapter 7 of the draft GRR II/SEIS contains an analysis of the changes in salinity for the median condition. District staff recommend including an analysis of rarer events of various durations in the final GRR II/SEIS, similar to the analysis for SAV effects, in which continuous probability density curves for different duration events are compared between scenarios.

RESPONSE: The ecological models we used for evaluation of wetlands and phytoplankton are not designed to evaluate the effects of different duration events.

- Section 2.2.6 (page 23) refers to the 2012 State of the River Report (UNF/JU 2012) with respect to water quality criteria (WQC) values. Please note the numeric values for nitrogen (N) and phosphorus (P) have only recently been proposed by the U.S. Environmental Protection Agency and Florida Department of Environmental Protection, but have not yet been promulgated into a rule.

RESPONSE: Comment noted. We will revise the reference to WQC.

Florida Fish and Wildlife Conservation Commission

Wildlife Protection Measures

- *Marine Turtles*

In Appendix J of the GRR II/SEIS, the Dredged Materials Management Plan (DMMP), the USACE notes that the selected spoil disposal plan would be offshore placement for new material. Beach and nearshore placement are indicated as potential spoil-disposal options for future operation and maintenance dredge events. If dredge spoil material is placed on or near the beach, impacts to nesting and hatching sea turtles could occur

as outlined in Chapter 7.3.2.4. While the DMMP notes that only beach-quality and/or nearshore-quality material could be disposed of in those areas, the plan lacks specific details on how it would occur and how impacts to sea turtles would be minimized. The FWC recommends that the DMMP include details, such as:

1. Mechanisms to ensure that only beach-quality material is placed on the beach
2. Placement areas, construction sequence, and timing are clearly defined
3. Proposed beach profiles to include a sea turtle-friendly design
4. Construction and design templates
5. Pipeline placement, equipment needed, and travel corridors

If dredged material is to be placed in the near shore, it should be distributed such that placed material does not create a barrier between open water and the nesting beach. The type of dredge selected and any equipment used for beach or nearshore placement of dredged material should ensure that sea turtles and their nests are protected during any project activity that occurs during May 1 through October 31. This is especially relevant to any lighting proposed during nighttime activities. If dredged spoil is to be placed on the beach and/or near the shore, the FWC requests that the USACE further coordinate in formulation of plan details. In addition, long-term local agreements should be arranged to ensure appropriate surveys and protective measures are in place to address escarpment, tilling, and lighting compliance requirements after the initial year of construction.

Impacts to swimming sea turtles may also occur as outlined in Section 7.3.2.4. The USACE has indicated that in the event a hopper dredge is utilized, the Terms and Conditions of NMFS Regional Biological Opinion for Hopper Dredging would be followed. The following recommendations are provided for further protection and will facilitate FWC's assistance to USACE staff in handling sea turtle injury:

1. Compliance with the State of Florida's FWC Marine Turtle Conservation Guidelines (<http://www.myfwc.com/wildlifehabitats/managed/sea-turtles/conservation-guidelines/>)
2. Contacting the Sea Turtle Stranding and Salvage Network (STSSN) Coordinator Allen.Foley@myfwc.com at the start-up and completion of hopper dredging operation
3. Reporting any collision with and/or injury to a sea turtle to the STSSN at 1-888-404-FWCC (3922)
4. Submission of the contractor's Environmental Protection Plan

In addition, the GRR II/SEIA notes that several methods, including turtle-deflecting hopper dredge drag heads and trawling to capture turtles for relocation can be used to reduce adverse impacts to marine turtles during hopper dredging operations. While the USACE notes that hopper dredges would be equipped with drag head deflectors, if

relocation trawling is used, the FWC recommends that additional implementation details be provided. Any activity involving the use of nets to harass and/or to capture and handle sea turtles in Florida waters requires a Marine Turtle Permit from the FWC as well as reporting of all trawling activity.

RESPONSE: Protection measures required in the NMFS and USFWS biological opinions for nesting or swimming sea turtles shall be implemented.

- *Florida Manatee*

The project area is located within federally designated Critical Habitat for the manatee, and Duval County has an FWC-approved manatee protection plan (<http://www.myfwc.com/wildlifehabitats/managed/manatee/protection-plans/>).

Additionally, manatees are protected by the Marine Mammal Protection Act; Section 379.2431(2), Florida Statutes; and the Manatee Sanctuary Act, Chapter 68C-22, F.A.C.

Manatees are herbivores and feed on a variety of benthic, emergent, floating, and bank vegetation. They are known to frequently feed in shallow and other submerged grass beds close to deeper water. The major threats to manatees are collisions with watercraft and deterioration of warm-water winter refuge areas (FWC 2007). As noted by the USACE, the proposed navigation improvement project may result in direct impacts from blasting activities, altered behaviors, and impediments to seasonal migrations, as well as a decrease in the amount of foraging habitat due to changes in SAV coverage from increased salinity.

In Section 7.3.2.1, the USACE notes that the proposed project will adhere to standard manatee conditions. The scope of the project includes activities that may not be addressed in the standard manatee conditions. For this reason, the FWC recommends that the project also follow the dredging measures outlined for manatees in the previously approved Joint Coastal Permit (JCP, No. 0303186-001-JC) issued by the Florida Department of Environmental Protection (FDEP) on May 23, 2012, for maintenance dredging of the federal navigation channel of the river. In summary, these measures include:

1. At least one person shall be designated as a manatee observer when in-water work is being performed. That person shall have experience in manatee observation during dredging activities, and be equipped with polarized sunglasses to aid in observation. The manatee observer shall be on site during all in-water construction activities and advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. Two observers who have experience in manatee observation during night time dredging activity shall be used when nighttime clamshell dredging is conducted during the months of April through November.
2. During clamshell dredging, the dredge operator shall gravity-release the clamshell bucket only at the water surface, and only after confirmation that there are no

manatees within the safety distance identified in the standard construction conditions.

3. Hydraulic dredging shall be used as much as practicable.

RESPONSE: Protection measures required in the USFWS biological opinion or coordination letter for the manatee shall be implemented.

- *North Atlantic Right Whale*

The coastal waters adjacent to the river and extending south to Sebastian Inlet are designated Critical Habitat for the North Atlantic right whale. This area and coastal waters off Georgia are their only known calving ground. The area is also located within the right whale Early Warning Area. Highest numbers of individuals utilize the area for calving between November and April, and there have been sightings reported within the lower river. The primary causes of injury and death are from ship collisions and entanglement in fishing gear, with the southeastern U. S. having the highest number of vessel strikes for all of North America

(http://sero.nmfs.noaa.gov/protected_resources/right_whale/).

In Section 7.3.2.8 of the GRRII/SEIS, the USACE notes that the proposed action may affect the North Atlantic right whale as dredge spoil is taken for deposition in the ODMDS through right whale Critical Habitat for wintering and calving. The USACE has indicated that the terms and conditions of the South Atlantic Regional Biological Opinion and hopper dredging protocols from the NMFS will be followed.

RESPONSE: Protection measures required in the NMFS biological opinion or coordination letter for the whale shall be implemented.

- *Shorebirds and Seabirds*

Should project or future maintenance dredge spoil material be placed on the beach or upland spoil disposal sites noted in the DMMP, there would be the potential for nesting seabirds and shorebirds to be affected. FWC and USACE staffs have discussed the standard protection measures for seabirds and shorebirds, and we recommend that these measures be incorporated into the project evaluation. For reference, these measures are summarized below.

1. Ensure personnel associated with the project are aware of the potential presence and the need to avoid take of these protected species.
2. Use observers to monitor for beach-nesting bird activity, establish buffer zones and travel corridors, and assist personnel in conducting work in a manner that avoids take.
3. Ensure equipment storage and placement does not result in take.
4. Ensure that any tilling or mechanical beach-raking is conducted in a manner that does not result in take.

Additionally, placement of dredge spoil material can be beneficial when it is conducted in a manner that creates habitat for beach-nesting birds. FWC staff is available to discuss the options for dredge spoil placement and how to provide additional habitat while avoiding the potential negative impacts of placement. We request that the USACE coordinate with FWC during formulation of plan details if dredged spoil is to be placed on the beach and/or near the shore.

RESPONSE: Should DMMA, beach and/or nearshore placement be further considered as a placement option, the activity would be authorized under a DEP Joint Coastal Permit. As a State commentary agency, FWC staff would coordinate through DEP during the permitting process to ensure this activity is appropriately authorized by the State.

- *Gopher Tortoise*

Gopher tortoises inhabit areas with dry, sandy soils, and could be expected to be found within the proposed upland spoil disposal areas. The FWC approved a revised management plan for gopher tortoises in September 2012

(<http://www.myfwc.com/wildlifehabitats/managed/gopher-tortoise/management-plan/>). Additionally, permitting guidelines were revised in April 2013

(<http://www.myfwc.com/license/wildlife/gopher-tortoise-permits/>). The BA notes that a survey for gopher tortoises would be conducted prior to the construction permitting guidelines should be followed; the FWC should be consulted as necessary and maintenance of upland spoil disposal sites. Should gopher tortoise burrows be identified on any of the disposal sites, the permitting guidelines should be followed; the FWC should be consulted as necessary.

RESPONSE: The USACE and its non-federal sponsor will coordinate with FWC, and the contractor will obtain any required permits regarding any gopher tortoise relocations.

- Blasting Plan

During the scoping process, the FWC encouraged the USACE to consider the no-action alternative because of the high potential for blasting impacts to protected marine animals. Past blasting events in the river have provided insight into the difficulty of performing adequate aerial surveys in this waterway. It is extremely difficult to see marine animals in the river because of the depths, low visibility, and fast currents. However, as described in Section 6.3.5 of the GRRII/SEIS, the tentatively selected plan includes confined blasting as a dredge pretreatment of rock with an unconfined compressive strength greater than 5,000 PSI. The USACE commits to implement the confined underwater blasting protective measures developed for the Miami Harbor dredging for both construction and test blasting in the St. Johns River navigation channel. The FWC recommends that the revised and improved language for protected species observers used for the Miami Harbor Phase III blasting—included in JCP No. 0305721-001-BI issued by the FDEP on May 22, 2012, for the project—be followed due

to the potential difficulty in visibility. A monitoring/watch plan is included in Section 6.3.5.2 of the GRR II/SEIS report, but it does not address observer qualifications, which are a critical part of a successful monitoring plan.

Due to differences in the Miami Harbor Phase III blasting plan and the GRR II/SEIS report, we have identified additional measures for the projection of marine mammals. These measures are outlined below and aimed at helping to avoid impacts through future coordination with FWC staff:

1. The USACE states that a test blast program is to be completed prior to implementing a construction blast program. The test blast discussions state that the weight of the charges will progressively increase up to what will be the maximum needed for production. Blasting protective measures for wildlife should be used for the testing program and should be similar to the production blasting measures.
2. Rock pretreatment other than blasting, such as punch barge/hydro-hammer or pneumatic hammers, is also being considered by the USACE as an alternative to blasting. The USACE notes that these rock pretreatment methods have effects similar to those of underwater unconfined blasting. Protections from rock pretreatment methodologies for fisheries and marine animals would be required if these methodologies are employed. Protective measures for wildlife should be used for any rock pretreatment other than blasting, and should be similar to production blasting measures.
3. Conservation measures also include a minimum of 8 milliseconds (ms) between delay detonations to stagger the blast pressures. The FWC typically recommends greater than 8 ms, based on recommendations from Dr. Tom Keevin (Environmental Planning Branch, USACE St. Louis District).
4. As specified under *Safety Radii* in Section 6.3.5.2, the USACE is considering a blasting window when manatees are less likely to be present, but does not specify details. Manatees can be present in lower numbers in the river during the winter months. The FWC recommends blasting during the cold season, as well as blasting during slack tide, when visibility would be better for the observers.

RESPONSE: Protection measures required in the USFWS and NMFS biological opinions or coordination letters in regard to blasting operations shall be implemented. Also, the USACE will apply for an Incidental Harassment Authorization (IHA) from the NMFS and USFWS for the proposed blasting. The blasting plan will comply with all measures stated in the IHA Monitoring Plan.

- USACE staff coordinated with FWC staff and those of other agencies to develop a long-term monitoring plan to assess whether hydrodynamic and ecological models accurately predicted impacts from the project. Monitoring proposed by the USACE would commence prior to, concurrent with, or within one year of the start of the project. It

would continue for the duration of the project and for 10 years following project completion. Monitoring results would be used to evaluate whether the proposed mitigation projects (addressed below) sufficiently compensated for impact. The draft monitoring plan proposed by the USACE consists of:

1. Continuous water quality monitoring in the river at three existing stations operated by the U.S. Geological Survey and three proposed new stations, with the additions of tidal water level and flow gauges in tributaries. Alternatively, new stations would be installed at Dames Point (RM 11), Acosta (between RM 24 and 25), Buckman (between RM 34 and 35), Shands (RM 50) bridges, and Federal Point (RM 68), as well as in Clapboard Creek, Broward, Trout, Arlington and Ortega rivers, Julington Creek, Doctors Lake inlet, Black Creek, and Six Mile Creek.
2. Eelgrass monitoring on a quarterly basis at Bolles High School (RM 30), Buckman Bridge, Moccasin Slough (between RM 37 and 38), and Scratch Ankle (RM 60), all having historical data from the St. Johns River Water Management District. The Scratch Ankle site was selected as the control.
3. Wetlands monitoring on a biannual basis in locations at Ortega River, Julington Creek, Black Creek, and Six Mile Creek (serving as the control). Monitoring would include soil chemistry to determine whether soils have been exposed to salt water, and vegetation composition to identify any changes over time.
4. Nekton (fish and macroinvertebrate) monitoring to assess changes in nekton composition, abundance, and modified use of SAV habitats due to channel deepening operations, pursuant to a protocol designed and recommended by FWC FIM program staff.
5. Hydrodynamic modeling, proposed to be conducted annually for the duration of the monitoring program, utilizing data output from the proposed water quality monitoring.

In addition to these monitoring efforts, the FWC also recommends the following:

1. Freshwater fish monitoring. Freshwater fish populations are likely to be affected by changes in salinity regimes and by alterations to existing habitat caused by those changes. Freshwater ecological communities are likely to be replaced by more salt-tolerant species if the salinity increases and/or if the duration of higher salinity changes. Assessing current fish assemblages and monitoring them for potential population changes during and after the project would better inform compensatory mitigation options. Such a monitoring program would include:
 - a. Assessments of habitat availability and use, species composition, species richness, distribution of all life stages, and recruitment within Julington Creek, Doctors Lake, Black Creek, and other selected tributaries;
 - b. Fishery dependent monitoring methods including angler surveys, aerial surveys, and mark-recapture programs to evaluate effort and harvest of targeted species;

- c. Fishery independent monitoring methods including electro-fishing, fyke netting, trawling, and gill netting;
 - d. Acoustic telemetry to evaluate current distribution and movements of fish.
2. Freshwater invertebrate monitoring. Freshwater invertebrate assemblages are particularly affected by salinity concentrations. Salinity in excess of 0.5 ppt can affect the structure of freshwater invertebrate assemblages, and concentrations exceeding 4.0 ppt are toxic to most freshwater taxa (Gary Warren, personal communication 2013). Section 7.3.7 of the GRR II/SEIS notes that increasing salinity over time will likely result in replacement of salinity intolerant species with more salinity tolerant species, and would likely reduce the overall number of taxa. However, potential impacts to freshwater invertebrates associated with sediments (benthos), aquatic vegetation, and wood debris (phytomacrobenthos) are not addressed. These faunal components are typically sessile (attached) in nature and are unable to escape perturbations such as toxic spills, non-point source pollution, or salinity increases. Section 7.2.6, including results from salinity modeling, indicates that salinity increases and increased tidal inflection could penetrate the St. Johns River upstream beyond the mouth of Black Creek, a freshwater tributary. Assessing current freshwater invertebrate assemblages within both the tributaries and the river, and monitoring these assemblages for potential population changes during and after the project would better inform compensatory mitigation options. Such a monitoring program would include assessment of species compositions, distributions, and abundances of these assemblages in a variety of habitats (sediments, rooted aquatic vegetation, wood debris, root systems, leaf packs). These assessments should occur on a seasonal basis for at least one year prior to implementation of dredging activities. Implementation of a post-deepening monitoring plan in the same locations and habitats could then detect changes in invertebrate community structure attributable to salinity increases
3. Saltmarsh-dependent bird species monitoring, with an emphasis on marsh wrens and seaside sparrows. Should hydrological changes occur in the river and its tributaries as a result of the project, marshes may experience ecosystem-level alterations due to changes in water levels and salinity. Soil chemistry, fish and benthic macroinvertebrate community structure, and vegetative composition may change over time as a result. Monitoring the habitat use, populations, and trends of marsh wrens and seaside sparrows during and after the project could better inform compensatory mitigation options.

The American oystercatcher is dependent upon oysters, oyster bars, sandbars, and mudflats for feeding and roosting. These habitat types may be directly affected by project activities. The oystercatcher population trend is declining due in part to habitat alterations from coastal engineering projects. Habitat use, populations, and trends of American oystercatchers could also inform compensatory mitigation options.

RESPONSE: The USACE will continue to coordinate with the FWC regarding future monitoring. All monitoring activities must be correlated with salinity effects caused by the deepening, salinity modeling, and ecological modeling developed for the proposed deepening. This is to ensure that causes of observed effects can be determined, i.e. drought, sea level rise, deepening, etc.

- Mitigation Plan

The FWC offers the following recommendations that either expand upon those under consideration by the USACE or suggest additional options.

1. Create or enhance eelgrass and/or widgeon-grass (*Ruppia* sp.) in the river or its tributaries (including Doctors Lake), depending on salinity conditions. Such a project could provide resource compensation by restoring impacted SAV beds or creating new SAV beds and providing habitat for fish and BMI.
2. Create or restore sub-tidal oyster reef habitat or low-relief hardbottom habitat in the lower reaches of the river and tributaries. Potentially increased salinity, inundation period, and flow rates that may result from the project could impact existing oyster reefs. Such a project would aid in shoreline stabilization as well as creation of fish and wildlife habitat and foraging opportunities.
3. Construct “living shoreline” projects along the river or its tributaries. Shoreline enhancement and modification projects could increase habitat complexity lost in many areas to shoreline hardening. These projects could include construction, enhancement, or modification of saltmarsh or oyster habitat along hardened or eroding shorelines. In many areas, such projects could incorporate emergent vegetation or freshwater submerged aquatic vegetation that otherwise would be excluded due to water depths.
4. Create, restore, enhance, and/or stabilize saltmarsh habitat within the river system. Such projects may serve to mitigate potential impacts to fisheries and a variety of other saltmarsh-dependent wildlife species by increasing foraging areas, protective cover, and spawning or nesting areas. Opportunities may exist adjacent to the Intracoastal Waterway within Timucuan Preserve area.
5. Provide support for FWC fisheries stocking efforts, particularly species such as redbreast sunfish and American shad, which are targeted by anglers. Alternatively, provide funding for stock enhancement in Welaka hatchery, or with technical assistance from FWC staff, identify other fisheries enhancement projects.
6. Explore opportunities for land acquisition of privately owned in-holdings in Sisters Creek and the Timucuan Preserve area.

7. With assistance from FWC staff, seek opportunities to improve access for freshwater anglers, including those who bank fish, from Shands Bridge upstream to Lake George.

The USACE plans to conduct long-term monitoring for 10 years following completion of the project. Should the results of this monitoring indicate that impacts to fish and wildlife resources and their habitats exceed what has been predicted by modeling and assessments, the FWC will provide technical assistance to identify additional, appropriate compensatory mitigation alternatives.

RESPONSE: The USACE has determined that conservation land purchase would offset the minor effects that the environmental modeling and effects assessment have predicted. However, the USACE will continue to coordinate with the FWC on other mitigation options.

Florida Department of State (Division of Historical Resources)

- A review of the Florida Master Site File data indicates that there are two sites located within the proposed project area, DU21117, SB05 and 8DU21118, SB10. Therefore, it is the recommendation of this office that these two sites be avoided by project activities. If avoidance is not possible, further consultation with this office will be necessary.

RESPONSE: Both sites and avoidance of the site at Mile Point have been determined NRHP eligible and have been coordinated with SHPO and Tribes in 2011. Updated coordination on final deepening footprint Mile 0- Mile 13 being sent and determination of no effect to other site as it lies outside of the final TSP footprint.

Northeast Florida Regional Council

- No comment.

RESPONSE: Noted.

U.S. Environmental Protection Agency (EPA)

- The draft SEIS indicates the following investigations are ongoing. The resulting information will be provided to stakeholders as the work is completed and will be provided in the final Supplemental Environmental Impact Statement (final SEIS).
 - Hydrodynamic modeling of the Tentatively Selected Plan with sea level rise
 - Ecological modeling of fish and macroinvertebrate communities
 - Water quality modeling
 - Adaptive Hydraulics Modeling of the TSP
 - Groundwater report prepared by the U.S. Geological Survey
 - Storm surge and coastal modeling

- Tributaries and salt marsh modeling
- Ship wake modeling

We look forward to reviewing these studies as they are completed. We recommend the studies be made available to the public for review prior to publication of the final SEIS.

RESPONSE: All studies have been completed and are available for review.

- Water Quality -*public water supplies*
 - EPA recommends the final SEIS discuss the surficial-aquifer characteristics in vicinity of the proposed action in context of potential impacts to aquifer-dependent drinking-water supplies.

RESPONSE: The USGS groundwater modeling looked at the geologic parameters of the aquifer and several possible geologic scenarios to test the susceptibility of the surficial aquifer to salinity impacts. The geologic scenarios ranged from simple to complex based on uniform subsurface conditions and available information, not actual conditions. However, we know that the rock for the surficial aquifer is not uniformly distributed throughout the area and that the permeability varies. Therefore, the modeling using the simplified geology over estimates the impact compared to actual conditions. Even using the uniform distribution of rock and permeability, the modeling shows a maximum impact that extends an additional 75 feet to the north on USGS section d. This area is adjacent to the channel and has been exposed to high salinity over a very long time so that an increase of 4 ppt is not significant.

In regards to community public water systems, blasting will impact the underlying rock within the immediate vicinity of a given blast hole. Fractures from blasting a well designed and executed blast shot will extend to the free face, not to toward the surficial aquifer along the margin of the channel.

The Floridan Aquifer is located approximately 300 feet below the project depth and is protected from the blasting by the soft, low permeability material that separates the blast zone from the drinking water aquifer. Blast energy will propagate laterally towards the free face along the length of the blast hole, not in a vertical direction.

- The draft SEIS references U.S. Geological Survey's ground-water study to support the USACE determination the proposed action will not significantly increase the surficial-aquifer salinity. Because the study has not been provided in the referenced appendix, EPA requests a copy of this ground-water study when it is available.

RESPONSE: The USGS study has been completed and is available for review.

- EPA recommends the final SEIS describe the proposed action's construction impacts to the surficial-aquifer system. For example, the draft SEIS does not provide information

on how the proposed action will cumulatively affect previous harbor dredging that has already exposed the surficial aquifer's major water-yielding unit directly to the St. Johns River.

RESPONSE: According to surface water modeling of the main channel, there will be minor salinity increase from the project, and the water will be mixed by tidal actions reacting with river discharge. USGS modeling took the surface water model data to run the potential impact to the rock of the surficial aquifer. Under the worst case geologic scenario tested only one area along the project would have increased salinity. This geologic scenario is not plausible because of variability of the occurrence and the lack of uniformity of the geologic materials.

- The draft SEIS does not provide any rock-removal volume estimates. It does not discuss how rock-removal may impact the aquifer's porosity and ability to transmit sea water associated with public water supply well-draw downs.

RESPONSE: The primary public drinking water supply in Jacksonville is the Floridan Aquifer which is found at depths on the order of 300 feet below surface. There is considerable thickness of intervening low permeability material that will protect the public drinking water supply. This aquifer is confined and has an upward gradient. The surficial aquifer is different and in the area of concern, it is found in the 60 to 80 feet below the surface

The USGS report discusses the exposure of additional section of the surficial aquifer rock. In the channel, there has been a significant amount of time for the high salinity water to enter the surficial aquifer even with overburden. The hydrostatic head in the river will not increase after the deepening except from sea level rise, so there should be a minimal impact to the surficial aquifer. The USGS modeling shows an increase of 4 ppt salinity under the worst geologic conditions, and that extends an additional 75 feet from the channel.

- EPA estimated from rock-acreage estimates given in the draft SEIS, a rock volume of 4,309,677 cubic yards to be potentially extracted from the major water-yielding zone of the surficial aquifer system potentially exposing more of this unit's surface area to seawater intrusion.

RESPONSE: Correct, this project potentially exposes more surface area to the open water, but this rock material has been exposed for a long time to increased salinity by infiltration of high salinity river water through overburden. The USGS study shows exposing the rock under plausible geologic conditions will not increase the salinity of the groundwater in the surficial aquifer.

- EPA recommends the final SEIS discuss the proposed action's potential impacts to existing ground and surface water bodies' ability to meet the uses of agricultural, cooling or other industrial/manufacturing uses.

RESPONSE: The USGS study shows exposing the rock under plausible geologic conditions will not increase the salinity of the groundwater in the surficial aquifer. Likewise, there has been modeling of the surface water in the river and its tributaries that shows there is a minimal increase in salinity along the tributaries and in the river itself. Agricultural use of river water must be permitted by the SJRWMD and is strictly regulated. Industry that uses river water would be located primarily in areas where surface water is already high salinity. If they can deal with current salinity levels, the minor increase should not impact those operations.

- Water-Quality Impacts - *Floridan-Aquifer*

- EPA recommends the final SEIS address whether the proposed action may have indirect effects to the sole-source designated areas of this aquifer. EPA has determined the Volusia- Floridan Aquifer as a sole or principal source of drinking water for public water supply systems and individual wells in designated areas of Florida pursuant to the Safe Drinking Water Act.

RESPONSE: The primary public drinking water supply in Jacksonville is the Floridan Aquifer which is found at depths on the order of 300 feet below surface. There is considerable thickness of intervening low permeability material that will protect the public drinking water supply. This aquifer is confined and has an upward gradient which also acts against infiltration of river water.

- Water-Quality Impacts – *Turbidity*

- EPA recommends the final SEIS evaluate the potential turbidity effects to water quality during the estimated five years of dredging and blasting the NED and LP plan.

RESPONSE: Turbidity caused by dredging would be monitored in accordance with state water quality criteria and the state permit. If turbidity exceeds the permit conditions, then the activity causing the exceedence would be stopped until the cause is identified and corrected.

- EPA recommends the final SEIS fully evaluate the long-term turbidity effects associated with larger ships using a deeper navigational channel. Larger ships will create larger wakes, potentially increasing shoreline erosion effects, and potentially disturbing and re-suspending bottom sediments. Additionally the widening effect associated with the proposed deepening will likely expose more surface area of unconsolidated sediments to erosion.

RESPONSE: An analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition (see Appendix A – Engineering).

- At recent public meetings, shoreline erosion has been a significant concern expressed by riparian property owners. EPA recommends the USACE consider avoidance and minimization techniques to reduce these potential environmental consequences and identify appropriate mitigation to address this concern.

RESPONSE: The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor project based on analyses of the predicted changes in current velocities along the project (determined to be negligible), changes to the tide range (average of 2 inches or less), a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact), and an analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition.

- Wetlands Impacts

- The draft SEIS indicates the salinity impacts analysis for the marshes and tributaries are ongoing. This analysis is not included in the draft SEIS and unavailable to EPA for review to determine potential aquatic ecosystem impacts. EPA requests a copy of the marshes and tributaries model details and assumptions supporting the wetlands impacts when it is available.

RESPONSE: Tributary and marsh modeling have been completed and are available for review.

- EPA does not agree with the draft SEIS conclusion *there is no tremendous loss of wetland value* associated with the potential conversion of freshwater wetlands into salt tolerant wetland. Because some aquatic organisms require a fresh-water phase in their life cycle (e.g., anadromous and catadromous species) making them dependent upon a freshwater ecosystems, it is clear freshwater wetlands provide a different and valuable function than saltwater wetlands, which may be lost associated with increased salinity. The draft SEIS states *salinity changes in the LSJR main stem would also affect tributary wetland communities*. These affects include changes in vegetation and increases in sulfate levels in soil leading to soil subsidence, which would alter wetland appearance and function.

RESPONSE: Tributary and marsh modeling have been completed and are available for review. Effects determinations have been revised within the SEIS.

- The draft SEIS indicates the LSJR tidal swamp to marsh transition is following a similar pattern observed in the Cape Fear River navigation channel, where channel modification-induced salinity increases have impacted wetlands. Similar to the Cape Fear River navigation channel, Jacksonville Harbor has a long history of channel modifications. According to the draft SEIS, past deepening effects have already resulted in some upstream salinity movement as river shoreline wetlands show salinity stress within the project area.

RESPONSE: This study is using a method derived from analyses conducted on the Cape Fear River. Field observations suggest that LSJR wetlands have been affected by past or ongoing salinity changes. However, no data or analyses are available to assess how past deepening or other changes in the watershed may have affected wetlands in the study area. The model studies conducted for the harbor deepening assessment predict minimal project-induced salinity changes.

- Hydrodynamic Modeling

- Since the wetlands impacts appear to be defined primarily based upon project-induced salinity changes, hydrodynamic modeling was used to estimate potential salinity changes along the river's edge. Because the final results of the salinity modeling were not provided in the draft SEIS, EPA is unable to determine the proposed action's potential impacts to wetlands at this time and request this information as soon as it is available.

RESPONSE: All studies associated with wetland impacts have been completed and are now available for review.

- The USACE assembled an Interagency Team to assist in conducting a Uniform Mitigation Assessment Method (UMAM) assessment for potential wetlands and sea grass impacts and associated mitigation. While the hydrodynamic modeling results informed the UMAM assessment, the agencies were not given the opportunity to comprehensively review the modeling design and its implementation.

RESPONSE: Modeling design and implementation documents have been completed and are now available for review.

- It is unclear whether the models used for TMDL purposes is appropriate or has been appropriately revised to model the salinity impacts of the proposed action. Modeling harbor deepening impacts is not the same as modeling nonpoint and point-source loadings for the purpose of establishing total maximum daily loads to inform national pollutant discharge elimination system permit limits.

RESPONSE: The EFDC model report describes the application of the EFDC model (Water Supply Impact Study version) to estimate water circulation and salinity for ecological

modeling for with and without project scenarios. The EFDC-TMDL model was not used for ecological modeling.

- EPA requests a copy of the model details and assumptions supporting the wetlands impacts when available.

RESPONSE: All studies associated with wetland impacts have been completed and are now available for review.

- EPA recommends the final SEIS explain how the ground-water component of the area's hydrologic system was factored into the hydrodynamic-modeling efforts sufficiently to reflect Florida's extensive groundwater systems associated with its karst geology.

RESPONSE: The model accounted for groundwater flow into the river as lateral inflow time series input into the model. However, the model does not have a surface water-groundwater interaction component so the model does not simulate potential changes of the groundwater as a result of water level or salinity changes in the river.

- EPA recommends the final SEIS discuss the use of a three dimensional model (EFDC) for the River's main stem and a two dimensional model (MIKE) for its tributaries.

RESPONSE: The rationale for choosing MIKE21 flexible mesh (FM) hydrodynamic (HD) model and transport module rather than the EFDC 3D model used for the main stem is based on two factors. First, one of the initial goals of the salt marsh tributary modeling effort was to evaluate hydrodynamics and salinity in the Timucuan salt marsh area which is part of the National Park Service. This area is not represented in the EFDC model in any detail. The EFDC cells in the Timucuan salt marsh area are used to represent the volume of the salt marsh but don't represent the complex geometry of the tidal creeks and the marsh. The EFDC model's structured grid isn't a very efficient approach to represent the complex geometry of the salt marsh and wet and drying, which is an important process in the marsh and is not reliable in the existing EFDC implementation. The second factor is related to the lack of availability of recent bathymetry and adequate tributary scale flow input and continuous salinity calibration data in these areas. Because of the limits of the input flow and bathymetry data and salinity data for model calibration and validation, the goal of the salt marsh and tributary modeling was to develop a modeling method commensurate with the level of data available.

- EPA recommends the final SEIS discuss how the National Academy of Sciences' concerns with the SJRWMD models used were addressed. Expectations are for a peer-reviewed model to be used to inform and evaluate environmental impacts prior to the ROD with opportunity for public review.

RESPONSE: A National Research Council Peer Review group (NRC) worked with the SJRWMD over a three-year period including six face-to-face meetings with the group, including field trips. A 111 page report was issued. The SJRWMD addressed the NRC comments to the extent possible and practicable. The interested reader may want to view the final report and three interim reports at:

(<http://floridaswater.com/surfacewaterwithdrawals/NRCreports.html>)

The National Academy of Sciences website also provides a final statement concerning the review at <http://dels.nas.edu/Report/Review-Johns-River/13314>.

- Environmental Mitigation – *wetlands*
- EPA recommends the final SEIS appropriately discuss wetland impacts in context of specific mitigation plan defining USACE's commitment to implement.

RESPONSE: All studies associated with wetland impacts have been completed and are now available for review. This includes revised mitigation, monitoring and corrective action plans.

- The draft SEIS describes the interagency team but not the findings because the study is ongoing at the time of the public review of this draft SEIS. The draft SEIS is vague on the wetlands impacts and associated mitigation plan. It states *USACE, in coordination with the interagency team, will ensure that both the NED Plan and LPP contain sufficient mitigation to compensate for effects on ecological resources. The draft SEIS briefly lists five categories of mitigation options are being considered, and refers the reader to Appendix E for [a] more thorough description of the projected effects, assessment methodology, and mitigation proposed are included in Appendix E of this Report.* However, it does not provide any specific mitigation commitments. EPA recommends the specific wetlands impacts described in Appendix E and specific mitigation commitments be provided in the main body of the draft SEIS.

RESPONSE: All studies associated with wetland impacts have been completed and are now available for review. This includes revised mitigation, monitoring and corrective action plans.

- EPA requests a copy of the completed wetlands impacts analysis and proposed mitigation plan commitment as soon as it is available.

RESPONSE: All studies associated with wetland impacts have been completed and are now available for review. This includes revised mitigation, monitoring and corrective action plans.

- Environmental Mitigation - *submerged aquatic vegetation*

- EPA recommends the final SEIS appropriately discuss SAV impacts in context of a specific mitigation plan with specific mitigation commitments defining USACE's commitment implement.

RESPONSE: All studies associated with SAV impacts have been completed and are now available for review. This includes revised mitigation, monitoring and corrective action plans.

- The draft SEIS indicates mitigation opportunities are under consideration to compensation for the proposed action's effects. EPA requests a mitigation plan for review.

RESPONSE: The mitigation plan has been revised in accordance with completed modeling and effects assessments, and is available for review.

- The draft SEIS indicates mitigation in the form of regional storm-water treatment facilities to reduce agricultural nonpoint-source nutrient inputs into the St. Johns River to benefit sea-grass beds by improving water clarity. However, no specific plan is proposed or partners identified to achieve the proposed reduction target. EPA recommends the final SEIS provide a plan with specific commitments and identified partners.

RESPONSE: Nutrient reduction projects have been screened out from further consideration in the base mitigation plan.

- Environmental Mitigation- *adaptive management*

- EPA recommends the final SEIS provide an adaptive management plan that appropriately addresses mitigation deficiencies identified during the proposed monitoring period.

RESPONSE: Adaptive management (now called the Corrective Action Plan) has been revised and is now available for review.

- The draft SEIS states the USACE has prepared a long-term monitoring plan and an adaptive management plan to provide assurance actual effects will be monitored and coordinated. The draft SEIS states [a]s *stated in the adaptive management plan (see Appendix F), the USACE shall re-coordinate with the agencies in the event that monitoring detects deepening induced impacts that exceed the predicted impacts. The adaptive management plan states if the success criteria/or the mitigation, as described in the mitigation plan (Appendix E), are not met then modifications are warranted and re-coordination with the regulatory agencies and the public would occur.* The mitigation plan in Appendix E does not provide success criteria that would trigger appropriate modifications and agency re-coordination. The mitigation plan does not

identify a process for re-coordinating. We recommend the USACE refer to the Central Everglades Restoration Plan and Central Everglades Planning Project's adaptive management plan and procedures as a guide to preparing an appropriate adaptive management plan to be included in the final SEIS.

RESPONSE: Adaptive management (now called the Corrective Action Plan) has been revised and is now available for review. This includes thresholds for corrective action and coordination with agencies.

- EPA recommends the adaptation management plan be appropriately discussed in the main body of the draft SEIS.

RESPONSE: Adaptive management (now called the Corrective Action Plan) is discussed in Appendix F and referenced in the main body of the SEIS.

- EPA requests a copy of the completed adaptation management plan when it is available.

RESPONSE: Adaptive management (now called the Corrective Action Plan) has been revised and is now available for review.

- Offshore Dredged Material Disposal Site (ODMDS) Impacts

- EPA recommends the final SEIS clarify the draft SEIS' statement indicating *total capacity of either 55 million cy or 59 million cy depending on final configuration*” This statement appears inconsistent with the new Jacksonville ODMDS designation draft EIS, which indicates the new ODMDS should have a capacity of at least 65-million cubic yards. Moreover, the USACE has not conducted a detailed capacity analysis for the proposed alternatives being considered.

RESPONSE: This statement has been revised.

- EPA recommends the final SEIS correct the draft SEIS statement *the USEPA estimated an annual maintenance dredging requirement for the harbor* to reflect EPA's reporting of the USACE's estimate. Consequently, the USACE should be cited as the source of this information.

RESPONSE: This statement has been revised.

- EPA recommends the final SEIS clarify whether the placement of the additional dredged material volume associated with the TSP will reduce 1) the existing or 2) the proposed future expanded ODMDS' project life by four years if the full 56 million cubic yards of maintenance dredged material requires placement in the ODMDS.

RESPONSE: Additional discussion has been added.

- EPA recommends the final SEIS correct the draft SEIS' statement *the ODMDS draft EIS identified the following potential material management locations*. EPA reported the USACE findings, but did not conduct any analysis or inventory of dredged material disposal locations.

RESPONSE: The statement has been revised.

- EPA recommends the final SEIS clarify its Fernandina ODMDS discussion. The Fernandina ODMDS does not have a 50-year mission. Additionally, EPA did not reach the conclusion that the Fernandina Beach ODMDS was not a viable solution. EPA did determine it was not an acceptable alternative to the designation of a new Jacksonville ODMDS.

RESPONSE: This discussion has been revised.

- EPA recommends the final SEIS clarify whether the required significant improvements to the berthing area bulkheads and other infrastructure associated with the proposed action is accounted for in the total volume estimates provided or will result in increased dredged material volume requiring disposal.

RESPONSE: The dredging volume does include infrastructure improvements and is discussed in Appendix A (Engineering Appendix; Table 4).

- EPA recommends the final SEIS address the Marine Protection, Research and Sanctuaries Act requirements. All dredged material from this project must be evaluated and determined to be suitable for ocean disposal if it is to be disposed at the new Jacksonville ODMDS, and EPA must concur with the USACE's compliance determinations. EPA also recommends the SEIS discuss what testing is likely to be performed and when. Additionally for material not meeting the ocean disposal criteria, EPA recommends the final SEIS discuss where it will be disposed, including whether the project will maintain its feasibility if a portion of the material fails to meet the ocean disposal criteria.

RESPONSE: These concerns are addressed in the SEIS prepared for the deepening study as well as the draft EIS prepared on the expanded ODMDS.

- EPA recommends the final SEIS clarify ocean disposal is regulated by the Marine Protection Research and Sanctuaries Act not the Clean Water Act. The draft SEIS' discussion of the CWA 404(b) (1) Guidelines evaluation is focused on the dredged-material disposal at the Jacksonville ODMDS.

RESPONSE: The 404 (b)(1) analysis has been revised per the comment.

- EPA recommends the final SEIS identify potential beneficial use sites and provide additional information regarding disposal site options, including for material not meeting ocean disposal criteria, to facilitate factual determinations of short- or long-term effects upon the aquatic environments can be made.

RESPONSE: The Dredged Material Management Plan (DMMP) includes a section on beneficial use sites. Currently the ODMDS is recommended however beneficial use sites will continue to be considered throughout the PED phase.

- The USACE has tested dredged material from the Jacksonville Harbor Channel on a number of occasions (e.g. 2004; 1998). EPA recommends the final SEIS include a summary of these test results with more detail. The additional information should include a summary of sediment chemistry results; elutriate chemistry results, grain size, and biological test results and their applicability to new work material. Additionally, a summary of where and when the sediments were tested should also be included.

RESPONSE: Potential sources of Hazardous, Toxic, and Radioactive Waste (HTRW) within the project area are evaluated in sections 2.2.14 (pg. 34) and 7.2.14 (pg. 192) of the SEIS. USACE has performed two Hazardous, Toxic, and Radioactive Waste (HTRW) Assessments within the project area: the Jacksonville Harbor Mile Point Project (2004) and Jacksonville Harbor Navigation Study (2009). Neither assessment identified contaminants of concern within the Harbor Deepening project area.

- EPA recommends the draft SEIS' statement *these tests indicate that no long-term impacts to water quality have been documented* be re-examined and more fully supported in the final SEIS.

RESPONSE: Additional discussion per the results of the water quality modeling has been added to the SEIS.

- EPA recommends the final SEIS clarify the draft SEIS' statement *these tests indicate that no long-term impacts to water quality have been documented*. Because only dredged material from areas to passing the ocean dumping criteria is permitted to be disposed offshore, the objective is for no water quality impacts to occur. Since the USACE has not yet tested the material to be dredged, it is currently unknown whether any of this material will not meet ocean dumping criteria and require special management practices or a non ocean disposal site. Moreover in the area of the proposed action, there have been incidences of dredged material failing to meet the ocean dumping criteria and consequently unable to be disposed in the offshore ocean disposal site. For example, some dredged material from both Jacksonville Harbor and Mayport Naval Station did not pass the ocean dumping criteria and was not permitted to be disposed offshore. Another example is the new dredged material from Naval Station Mayport required special management practices in order to comply with the ocean dumping

criteria. Consequently, EPA notes a potential for adverse effects on aquatic environments from disposal of dredged material does exist.

RESPONSE: Potential sources of Hazardous, Toxic, and Radioactive Waste (HTRW) within the project area are evaluated in sections 2.2.14 (pg. 34) and 7.2.14 (pg. 192) of the SEIS. USACE has performed two Hazardous, Toxic, and Radioactive Waste (HTRW) Assessments within the project area: the Jacksonville Harbor Mile Point Project (2004) and Jacksonville Harbor Navigation Study (2009). Neither assessment identified contaminants of concern within the Harbor Deepening project area. Additional sediment testing will be performed during the MSRPA Section 103 concurrence process and must be authorized by USEPA prior to disposal into the ODMDS. Additional environmental protection requirements during blasting operations will be coordinated with the appropriate agencies prior to commencement.

- EPA recommends the final SEIS explain the basis for the 20 percent overdepth/bulking factor to the yearly dredging rate, which seems arbitrary because bulking alone can result in 20 percent or more dredged material than *in situ*.

RESPONSE: It is an estimate based on bulking and non-paid yardage. It is not unusual that non-paid yardage results from dredging operations. This estimate was used to conservatively design for disposal capacity.

- EPA recommends the final SEIS define what part of the approximately 18 million cubic yards (TSP) or 13.5 million cubic yards (NED) is expected to be rock removed (i.e., from the surficial aquifer).

RESPONSE: Estimates are that 20% of the excavation volume will be rock.

- EPA recommends the final SEIS clarify whether the estimated average annual increased shoaling volume associated with the proposed action is included in the proposed actions 50-year total dredged material disposal volume projection and the impacts to the proposed future expanded ODMDS service life.

RESPONSE: This discussion can be found in Appendix J (Dredged Material Management Plan). The majority of future maintenance dredged material will not be placed in an ODMDS. This material would be placed in upland locations, the beach or nearshore.

- EPA recommends the USACE use its disposal models, e.g., MPF ATE, to determine the best disposal operation strategy to minimize impacts to the ODMDS and to avoid exceeding the depth limitations.

RESPONSE: Best disposal operation strategies are discussed in Appendix J (Dredged Material Management Plan).

- Sea Level Rise
- EPA recommends the final SEIS discuss the effects of anticipated sea-level rise over the 50-year project life and the need to construct the proposed action to the proposed depth to accommodate the design vessels. Whether sea-level rise may naturally provide some increased water depth to facilitate deep-draft vessel passage without going to the full TSP depth.

RESPONSE: The proposed depth for Jacksonville Harbor channel deepening is referenced to the Mean Lower Low Water (MLLW) elevation developed by NOAA from tide station records for Mayport, FL, a location near the mouth of the St. Johns River. MLLW is a tidal datum that NOAA periodically adjusts (about every 19 years) to reflect observed changes in tidal water elevations. USACE sea-level change (SLC) projections are based on guidance in the National Research Council (NRC) report, Responding to Changes in Sea Level; Engineering Implications dated September, 1987. Future SLC scenarios based on low (historic), intermediate (modified NRC Curve I) and high (modified NRC Curve III) rates of relative sea level change were developed for Northeast Florida per USACE Engineering Circular (EC) 1165-2-212. The SLC projections for each scenario 50 years after completion of project construction (2018 +50 years = 2068) are +0.57 ft., +1.08 ft. and +2.71 ft. for historic, intermediate and high rates of future SLC. While sea level rise will result in changes in water depth relative to the channel bottom elevation, these changes are not expected to be significant for many years. Project economic studies and decisions on construction authorization are based on benefits which accrue from the proposed project depth being available as soon as construction is completed. Any increased project depth which occurs as a result of future SLC will allow increased navigation depths without increased dredging beyond normal maintenance.

- EPA recommends the final SEIS discuss how the proposed action will incorporate any revisions to the USACE's existing guidance, which expires on September 30, 2013, to reflect updated scientific findings over the proposed action's life.

RESPONSE: USACE Engineering Circular (EC) 1165-2-211 expired in 2011, and was replaced with EC 1165-2-212, Sea-Level Change Considerations for Civil Works Programs which officially expired on 30 September 2013. USACE Engineering Circular (EC) 1165-2-212 has been extended to March 31, 2014 to allow additional time to finalize the Engineering Technical Letter (ETL) which will replace it. The EC method for calculating relative sea-level change (SLC) projections for a range of future scenarios is still appropriate based on updated scientific findings and is expected to be carried forward in the ETL without significant changes. However, it is expected that the ETL will recommend future project design studies and alternative evaluations also consider potential SLC adaptation needs for a project service life of up to 100 years where appropriate. Modeling completed for the Draft GRR2 studies addressed a wide range of future scenarios including up to +6 feet of SLC for storm surge modeling which is roughly the high rate SLC projection for the project area to 2110. Future sea level

change scenarios are presented in Appendix A- Engineering as Attachment J, Hydrodynamic Modeling for Storm Surge and Sea Level Change, Attachment K, Hydrodynamic and Salinity Modeling for Ecological Impact Evaluation, and Attachment M, Hydrodynamic Modeling (ADCIRC/ MIKE21) for Salt Marsh and Tributary Salinity and Waterlevel.

- Storm Surge

- EPA requests the final storm-surge modeling results be provided when available. The draft SEIS indicates the storm-surge modeling effort is in progress to provide storm-event surge assessment including USACE sea-level rise rates for the proposed project alternative channel deepening. Additionally, the referenced Attachment J does not appear to contain the ADCIRC boundary conditions for the project design and impact analysis as stated in the draft SEIS.

RESPONSE: The effects of the proposed project on storm surge are based on FEMA's Georgia Northeast Florida storm surge study methodology. The application of the ADCIRC+SWAN hydrodynamic and wind-wave models, refined for the Jacksonville Harbor Deepening evaluations, represents the best available estimate of storm surge changes that may occur due to the proposed project (See Attachment J Hydrodynamic Modeling for Storm Surge and Sea Level Change of Appendix A - Engineering).

- EPA recommends the final SEIS discuss the effects of a deepened channel allowing a greater volume of seawater to penetrate the St. John's River upon the City of Jacksonville, surrounding areas including environmental justice communities, public water supply facilities, wastewater treatment facilities, and other public infrastructure.

RESPONSE: The effects of proposed project alternatives on salinity are based on application of a LSJR hydrodynamic model developed, calibrated, and verified by the SJRWMD. The model, refined for the Jacksonville Harbor Deepening evaluations, provides the best available estimate of salinity changes that may occur with any of the project alternatives.

- Flooding, erosion, and salt-water intrusion through the porous limestone unit of the surficial aquifer are potential concerns associated with storm surges. The proposed action could possibly breach up to eleven feet of the lower part of the surficial aquifer. One substantial environmental concern is the proposed blasting may facilitate increased porosity and transmissivity of seawater into ground-water dependent public water supplies associated with storm events and high tides.

RESPONSE: Public water supply comes from the Floridan Aquifer, not the surficial aquifer. The Floridan Aquifer is protected from surface water by a thick section of low permeability material. There will be no impact to the Floridan Aquifer. Surficial aquifer rock may be blasted, but the blasting will be confined to the channel. Rock permeability

will not be impacted by blasting much beyond the channel margins. A well-designed blast will focus the energy to the free face, not breaking back the channel margins beyond the dredging template. These blasts will be far from the river banks.

Flooding and storm events will be short-lived events that will not have sufficient long-term head increases to drive the higher salinity water more than existing aquifer conditions. There will be a delayed reaction within the sediments based on permeability that will modify flood impacts.

- A concern exists for impacts associated with large, slow moving storm events upon areas already susceptible to storm-surge flooding. It is unclear whether the proposed action may exacerbate the storm-surge impacts and associated flooding risk of smaller storms than under existing conditions. EPA recommends the final SEIS discuss storm-surge impact in context of low and high tides, previous histories of major storm-surge impacts, and sea-level rise.

RESPONSE: The effects of the proposed project on storm surge are based on FEMA's Georgia Northeast Florida storm surge study methodology. The application of the ADCIRC+SWAN hydrodynamic and wind-wave models, refined for the Jacksonville Harbor Deepening evaluations, represents the best available estimate of storm surge changes that may occur due to the proposed project (See Attachment J Hydrodynamic Modeling for Storm Surge and Sea Level Change of Appendix A - Engineering).

- EPA recommends the final SEIS' discuss the effects of a deepened channel allowing a greater volume of seawater to penetrate the St. John's River upon the Timucuan Ecological and Historical Preserve and the Huguenot Memorial Park near the river mouth in context of storm surge. The draft SEIS states, *sections 7. 2. 3 and 7. 2. 6 describe water salinity and elevation changes that may occur in the LSJR following project construction. Public lands-Timucuan Preserve, Huguenot Park, and other parks and preserves along the LSJR and its tributaries - will be subject to the described water salinity and elevation changes.* Sections 7.2.3 and 7.2.6 do not specifically address any public lands impacts as indicate above.

RESPONSE: Comparisons to baseline scenario shows very small changes within (better flushing) the Preserve (see Appendices A and D).

- EPA recommends the final SEIS consider appropriate mitigation measures (e.g., informing the local county's emergency management program to allow them to update their storm surge maps, evacuation procedures, increasing storm-water retention areas, etc.).

RESPONSE: There are no anticipated changes to the mitigation measures mentioned above.

- Shoaling Rates

- EPA requests a copy of the completed shoaling study results when it is available. The draft SEIS indicates the USACE anticipates there will be negligible difference between the NED and LPP shoaling rates but additional sediment transport modeling is underway to confirm.

RESPONSE: The effects of the project on currents and sediment transport, shoaling, and erosion are presented in the AdH hydrodynamic and sediment transport modeling and analysis located in Appendix A- Engineering, Attachment G. Hydrodynamic Modeling for Ship Simulation, Riverine Channel Shoaling and Bank Impacts. The AdH sediment transport model simulated the bed level changes for both existing and with-project (47-ft depth) conditions. The with-project condition results in an overall increase in shoaling volume by approximately twenty percent.

- Air Quality

- EPA requests a copy of the completed air emissions inventory as soon as it is available. While the draft SEIS provides basic information on air quality and general conformity, the emissions inventory was incomplete at the time of the draft SEIS publication for EPA and the public's review. The draft SEIS indicates the data collection process was ongoing.

RESPONSE: The air emission analysis is complete and is available for review.

- EPA recommends the final SEIS clarify the draft SEIS' confusing and uninformative comparative regional air toxics analysis for identifying potential local air-toxic issues.

RESPONSE: The air quality report has been revised as much as possible, given that the EPA did not identify what the EPA found "confusing and uninformative." However, the USACE has revised the air toxics analysis. Since a complex regional sampling and modeling effort to assess air toxics was not undertaken, the USACE believes that at least some reference to regional air quality helps scale the level of toxics.

- Additional site and project characterization efforts are recommended. EPA recommends the final SEIS:
 - Identify near-port' sensitive populations, e.g., day-care facilities, hospitals, nursing homes, schools, and EJ communities located approximately 1,500 feet in context of any current or reasonably foreseeable future air toxics emission sources.
 - Consider prevailing meteorological conditions and relevant topography as part of the preliminary air-toxics assessment phase.

RESPONSE: The USACE has done sensitive populations evaluation using sensitive receptor sites (churches, schools, daycare and eldercare) within 1500 ft of the borders of the JAXPORT properties. One school was found just outside the 1500 ft distance. Note

that the distance was measured not from a specific source but from the edge of the property. We believe that this conservative approach supports the USACE conclusion that the project would not affect sensitive populations.

- Environmental Justice (EJ) and Children's Health EJ
- EPA recommends the final SEIS identify the specific communities that may be located near and potentially affected by the proposed action and associated port facilities.

RESPONSE: The ENJ section has been revised to look at communities within a 1 mile radius of the navigation channel.

- EPA recommends the final SEIS provide the key figures related to EJ concerns for minority and low-income populations at the appropriate scale to identify any potential impacts to these communities. EPA notes that the use of consolidated tract data makes it challenging to determine whether pockets exist along the navigation channels.

RESPONSE: The ENJ section has been revised to show census block data within a 1 mile radius of the navigation channel for population densities and poverty levels.

- EPA recommends the US ACE fully analyze the environmental effects on minority and low-income communities, including human health, social, and economic effects. The final SEIS should provide data and maps for unconsolidated tracts and/or block groups in an effort to identify areas with high minority and low-income populations. EPA is aware of several block groups within the project area having high minority and low-income populations because of our EJ Showcase project in Jacksonville. These areas should be readily identifiable in the data provided and targeted for meaningful public involvement and outreach. Included with these comments, EPA is providing three maps to USACE to assist it with identifying potential EJ areas.

RESPONSE: The ENJ section was revised to show data and maps for unconsolidated tracts around the navigation channel. (EPA did provide maps showing percentages of low income, minority and potential ENJ communities but did not include data to relay how the percentages were obtained or reference a source for their data. Several attempts were made to contact EPA to discuss this issue further but communication was not reciprocated.)

- EPA recommends the EJ assessment be disaggregated from the Children's Health information. It should include a discussion of the potential direct, indirect and cumulative impacts (i.e., air, noise, water quality, aesthetics, health, and subsistence activities) to EJ populations. Public comments on EJ issues and the USACE corresponding responses should be summarized and any efforts to avoid, minimize, and mitigate impacts.

RESPONSE: The census data the COE utilized from the US Census Bureau showed very few people living in the census blocks surrounding the navigation channel. Therefore no disproportionate adverse effects are anticipated to environmental justice communities. No increased impacts are expected with or without the project condition as the tracts surrounding the channel are not highly populated regardless of deepening.

- EJ-Children's Health

- EPA recommends the final SEIS include unconsolidated tract or block group data since the consolidated tract level data appears to indicate there may be individual tracts of block groups within the project area with higher concentrations of children. Additionally, sensitive receptors should be mapped at the appropriate scale. For example, receptors within 1500 feet of the navigation channel/project area should be clearly identified and then additional buffer distances can be added to the appropriate scale maps of the project area to identify any potential risk of impacts to children.

RESPONSE: The ENJ section has been revised to show census block receptors (hospitals, schools/daycares) within 1 mile of the navigation channel.

- EPA recommends the children's health assessment be disaggregated from the EJ section and a discussion of the potential direct, indirect and cumulative impacts (i.e., air, noise, water quality, aesthetics, and health) to children in the vicinity of the project area be discussed. Additionally, efforts to avoid, minimize and mitigate impacts should also be identified.

RESPONSE: The USACE analysis showed no disproportionate affects to children or other ENJ communities as the areas surrounding the construction are not densely populated.

- EPA recommends the final SEIS provide readable and comprehensible maps and figures and clearly describe all potential impacts with the proposed action and associated port activities upon children's health.

RESPONSE: The maps and figures have been revised to clearly show demographic and ENJ data within a 1 mile radius of the navigation channel at the census block level.

- EPA recommends the final SEIS provide readable and comprehensible maps and figures and clearly describe all potential impacts with the proposed action and associate port activities upon children's health. For example, figure 60 depicts institutions like hospitals, schools and daycares and hospitals in the area at a scale so broad it is difficult to determine where the schools are, their proximity to the channel, etc. The final SEIS should identify sensitive receptors, their proximity to channel, and surrounding land-uses including facilities that contribute to the indirect or cumulative impacts to the communities.

RESPONSE: The ENJ section has been revised to show maps and figures, including sensitive receptors, using census block data within a 1 mile radius of the navigation channel.

- Editorial Comments
- EPA recommends the final SEIS address why baseline conditions are considered to the 2018 after construction of the proposed action scenario instead of the 2012/2013 authorized channel depth of 40 feet.

RESPONSE: The 2018 Baseline condition refers to the river channel without the project, not after construction. The other alternatives include different alternative channel depths. The results of modeling the river with different channel depths are compared to the results of modeling the river system without modification of the channel.

- The draft SEIS states *for the 2012 conditions (immediately after construction of the Jacksonville Harbor Deepening Project) and the 2068 (project horizon).*

RESPONSE: We could not locate this statement. It may have already been removed or revised.

- For Main Channel Salinity changes, the draft SEIS states *Table 45 provides the median salinity ... for the 2012 No Action (baseline).*

RESPONSE: We could not locate this statement. It may have already been removed or revised.

- The draft SEIS states *the following tables provide the median salinity ... for the 2068 No-Action (baseline).* Other Water Quality Effects Tables refer to the 2018 conditions as baseline conditions. Table 50 refers to 2012 no-Action (baseline) simulation. Tables 51-53 refer comparison of 2018 baseline and 44, 46, and 50 foot alternative simulations.

RESPONSE: Table numbering has been corrected.

- EPA supports the Corps efforts to integrate the Feasibility Study with the NEPA-required environmental study. However the combination of the two documents should be executed in a clear, organized fashion to facilitate a clear understanding of the proposed action and the comparison of the impacts between the reasonable and feasible

alternatives. EPA recommends the final SEIS explain the Feasibility Study terms in context of the NEPA terminology. This could be accomplished with a brief introductory paragraph explaining the overlap between the Feasibility and NEPA requirements with an explanation of how the Feasibility Study and NEPA requirements are being termed and met. The NEPA document should provide sufficient summary in the main body of regarding environmental impacts and how they were determined, mitigation and adaptive management planning with the technical information including supporting studies, methodologies, data, etc. placed in the Appendices.

RESPONSE: The table of contents will mark sections covered by NEPA with a *.

- EPA recommends the final SEIS clarify the draft SEIS' inconsistencies in project volumes: section 3.1 states 7.6 to 31.5 million cubic yards and section 3.2 states 7.6 to 28.6 million cubic yards.

RESPONSE: Section 7.28 states 7.6 to 31.5, other parts of the report have been edited for redundancies.

- EPA recommends the final SEIS specify a number where the draft SEIS indicates *the 20 year total for Cuts 14-42 is "#####*.

RESPONSE: A total can be found in section 3.6.

- EPA recommends the final SEIS clarify why the Dredged Material Management Plan assumes a new work volume of 18-million cubic yards when the draft SEIS provides volumes of 7.6 to 31.5 million cubic yards.

RESPONSE: 18 million is the estimate for the recommended plan 47 feet. The range was the initial plan formulation range 41-50 feet.

- EPA recommends the final SEIS explain and define its use of abbreviations to facilitate its comprehension. HTR W is not defined where used. FWOP, PWW, and SLR were introduced into the Wetlands Effects discussion without definition. Ppt' is not defined where used.

RESPONSE: Acronyms will be spelled out.

- Inconsistent salinity concentration measurement parameters are used. For example, the draft SEIS cites the USGS' use of *mg/l* while the draft SEIS uses *ppt* when discussing aquatic ecosystem impacts.

RESPONSE: This shall be made consistent.

- EPA recommends the final SEIS address the draft SEIS inconsistency in proposed monitoring costs. The Cost Summary Table provides a cost (\$31, 495,000) for the proposed monitoring program while the Monitoring Plan indicates \$11, 338,000.

RESPONSE: This shall be corrected.

Additional EPA comments received on Nov. 7, 2013

- EPA continues to have concerns regarding the assessment of the proposed action’s potential impacts to a potential public-water-supply source.

RESPONSE: Currently there are no public water supplies (PWS) sourced from the surficial aquifer that are located within a mile of the project as determined from FDEP 2012 registered PWS in Duval County. The PWS that apparently produce from the surficial aquifer are small systems related to churches or convenience stores that have potential to supply water to greater than 25 people, but these are all located well away from the project. The producing depth recorded for these few shallow PWS does not correspond to the depth of the PWS of the Floridan Aquifer, but is slightly deeper than the limestone of the surficial aquifer.

The EPA is concerned about “considerable” surficial aquifer leakage to the Floridan Aquifer, the main source for PWS in Duval County. The reference cited discusses the possibility in western Duval County where the Hawthorne Group is thinner and the potentiometric surface of the surficial aquifer is above the potentiometric surface of the Floridan Aquifer. The Hawthorn Group thickens to the east toward the project area and affords hydraulic separation between the Floridan Aquifer and the surficial aquifer. The Hawthorn intermediate confining layer above the Floridan Aquifer is between 300 and 500 feet thick within the project area and composed of layers of clay, clayey sand, sand and carbonates. The USGS has stated in their description of the Hawthorn Group that these sediments are part of the intermediate confining unit/aquifer system and provide an effective aquitard for the FAS (Floridan Aquifer System) (USGS Mineral Resources, On-line Spatial Data, Florida). There are several small PWS located adjacent to the river that produce from the Floridan Aquifer.

- EPA continues to recommend the SEIS fully evaluate the long-term turbidity effects associated with larger ships using a deeper navigation channel.

RESPONSE: As the ship moves, the changes in velocities are not significant. The velocities decrease at the location of the ship while some small increase in the velocities may occur near the ship at some locations. The variations of small increase and decrease are spatially and temporally dependent as the ship moves along the route at different times. Also, the variations are dependent on the tidal hydrodynamics and timings of the ship movement. Overall, the changes in the velocities are not significant

to cause large changes in the concentration of the suspended sediments. In addition, the short duration of the small increase and decrease in the velocities will not cause notable changes in the sedimentation and re-suspension processes. So, there will be no significant effects on the turbidity.

- EPA continues to recommend the SEIS discuss the use of a three dimensional model (EFDC) for the River's main stem and a two dimensional model (MIKE) for its tributaries.

RESPONSE: The rationale for choosing MIKE21 flexible mesh (FM) hydrodynamic (HD) model and transport module rather than the EFDC 3D model used for the main stem is based on two factors. First, one of the initial goals of the salt marsh tributary modeling effort was to evaluate hydrodynamics and salinity in the Timucuan salt marsh area which is part of the National Park Service. This area is not represented in the EFDC model in any detail. The EFDC cells in the Timucuan salt marsh area are used to represent the volume of the salt marsh but don't represent the complex geometry of the tidal creeks and the marsh. The EFDC model's structured grid isn't a very efficient approach to represent the complex geometry of the salt marsh and wet and drying, which is an important process in the marsh and is not reliable in the existing EFDC implementation. The second factor is related to the lack of availability of recent bathymetry and adequate tributary scale flow input and continuous salinity calibration data in these areas. The stream flow input used in this navigation study was developed by the SJRWMD for their Water Supply Impact Study specifically for the EFDC main stem model domain. These inflows are based on HSPF hydrology modeling and in many tributaries do not have much measured data for comparison. The model domain doesn't extend very far up most tributaries and the inflows applied at the boundaries in many cases, are aggregates of multiple sources. Applying these inflows further up these tributaries is expected to introduce more uncertainty in results within these tributaries because they were not specifically developed for this purpose. Bathymetry data within many of these tributaries is many decades old and is considered less accurate than more recently collected main stem bathymetry. Salinity is the primary parameter of interest and the key calibration parameter for the tributary modeling. However, for the most part, salinity data is limited to monthly water quality monitoring station. Because of the lack of continuous salinity data, the calibration or validation of the hydrodynamic and transport model is limited to monthly minimum and maximum ranges rather than a detailed comparison to measured salinity over tidal cycles. Because of the limits of the input flow and bathymetry data and salinity data for model calibration and validation, the goal of the salt marsh and tributary modeling was to develop a modeling method commensurate with the level of data available. The performance of any hydrodynamic/ transport model is limited by the uncertainties in available input flow, bathymetry, and gauged salinity data. Because of these limitations separate sub-domain models meshes were developed. The boundary conditions used in these sub-domain models were selected from the EFDC main stem model output at the junction between the St Johns River and tributaries and salt marshes. The PDT agrees

that a more robust modeling effort, which includes a common hydrodynamic 3D model for the main stem and tributary and salt marsh areas, would be a more technically sound approach but adequate input and calibration data is required to justify this approach.

- The SEIS' ecological effects analysis did not appear to look at possible impacts to wetlands in the lower St Johns River basin area, where the proposed action is being constructed. According to Figure 18,70 there are freshwater wetlands to the north likely influenced by the upper water-table unit of the surficial aquifer system. The water table unit is in direct contact with the St. Johns River and the area proposing to be dredged. It is unclear from the analysis presented whether the cumulative effects of channel dredging and cone of depression (s) associated with the potential use of the water table unit for irrigation, domestic water supply use, or even future municipal PWS wells may cause impacts to these wetlands.

RESPONSE: The water table is in communication with the St. Johns River, but the freshwater wetlands are by the surrounding higher ground as well at the surface water infiltration/inundation. The surface water salinity model shows very small project impact on salinity transport in the main stem of the river, and the tributary models show smaller effects in marsh areas in the tributaries with increased distance from the main channel. Impacts to freshwater wetlands are tied to the water table, not the limestone of the surficial aquifer. Groundwater in the water table generally flows from areas of higher elevation towards the tributaries where it discharges. The intervening wetlands can be recipients of the flow as it moves down gradient. The surficial aquifer limestone is well below the water table in the project area and is buried beneath approximately 40 feet of sand, silt and clay. Natural sea level rise will impact freshwater water table that feeds wetlands, and the saline water will inundate higher land surfaces that contain freshwater wetlands.

It would be imprudent to locate a surficial aquifer PWS or domestic water supply in a low topographic area adjacent to salt marshes, tributaries or the river channel that are subjected to tidal influences and sea level rise. These low areas are already subjected to daily exposure to salt water from the incoming tides. The limestone unit of the surficial aquifer contained over 2000 mg/L chlorides (Spechler and Stone, 1983, "Appraisal of the Interconnection between the St. Johns River and the Surficial Aquifer, East-Central Duval County, Florida). From these test data it is obvious that the limestone unit of the surficial aquifer contains chloride concentrations that far exceed fresh water levels and make it locally unsuitable for use.

Future placement of PWS wells needs to examine the hydrogeologic conditions at the location where they will be placed to assess the wellhead influence area. Proposed PWS need to assess the potential impact to any nearby wetlands that are within the wellhead influence area.

The USGS model did vary pumping rates in the surficial aquifer model to see what effect domestic groundwater pumping would have on the salinity variation. Pumping rates were increased up to 100 times estimated domestic usage and saw little to no effect on the flow system.

- WSIS study did look at groundwater influence to the MSJR, which this study did not. This study did not discuss potential impacts to the surficial aquifer, either water table or limestone unit, and potential associated impacts to any wetlands systems dependent upon the water table unit. There was no discussion of ground water in the ecological modeling analysis. Ground water data would be useful for delineating the surficial aquifer system's groundwater-circulation pattern and how it could be influenced by any PWS cone of depression(s) in context of the proposed action's construction. EPA notes the USGS determined saltwater intrusion could affect users of the surficial aquifer system east of Dames Point along the northern shore. It is unclear whether there are wetlands located east and north of Dames Point that could also be affected.

RESPONSE: The potential impacts to the tributary surface water and the surficial aquifer were addressed in the report. Tributaries to the lower St. Johns River do not show modeled salinity increases from the project. The USGS modeling does not show any impact to the water table fraction of the surficial aquifer. Groundwater in the water table generally flows from areas of higher elevation towards the tributaries where it discharges. The intervening wetlands can be recipients of the flow as it moves down gradient. Since neither the water table nor the tributaries change in salinity, there will be no impact to the fresh water wetlands from the project.

The effect to the surficial aquifer that the USGS alluded to refers to the limestone at the base of the surficial aquifer, not the water table fraction. The surficial aquifer limestone in the project area is buried beneath approximately 40 feet of sand, silt and clay and is well below the level of the freshwater wetlands.

- EPA recommends the final SEIS address the concerns expressed regarding reliability of using the adaptive hydraulics (ADH) sediment modeling results to estimate of the annual sedimentation rates necessary to establish environmental effects and sediment management requirements. EPA supports the recommendation to validate the ADH model.

RESPONSE: The Jacksonville Harbor AdH hydrodynamic model was traditionally calibrated and validated for water stage and water velocities measured during June 2009 timeframes. The AdH sediment transport function is a module of the hydrodynamic model. In cases where the sediment transport model is the only tool or means of estimating future projected dredging volumes, the model should be traditionally validated by comparing the observed and simulated deposition and erosion rates. Due to the unavailability of frequent time-varying bed data, the current version of the AdH sediment transport model has not been traditionally validated and the

modeling results should not be used as the primary indicator of future dredging volumes. Because of the extensive historical dredging records for the St. Johns River, use of that information is considered more reliable in estimating and/or extrapolating future shoaling rates for the with-project condition. Application of the more recent historical deposition rates estimate that the annual dredging requirement for the with-project condition will increase by approximately 17 percent. Average deposition rates computed at 3-hour output intervals during the AdH 3-month simulation period (May 2009-July 2009) and then extrapolated to a 1-year period indicate that the annual dredging requirement for the with-project reaches will increase between fifteen and twenty percent, depending on the project depth, relative to the existing condition. Thus, the average increase in the deposition rates from the AdH simulation compare favorably and reasonably with the increase in deposition rates computed from historical dredging records. Since the primary purpose of the AdH model was generation of the hydrodynamics to support ERDC ship simulation, ship wake modeling, comparison of currents in the with- and without project condition, quantification of velocity difference maps and dredging requirements, there was an incumbent need to describe the project bathymetry and hydrodynamics in a common platform, high resolution model. The AdH model mesh was much more refined than the coarser mesh used in the Jacksonville Harbor EFDC model used for primary purpose analysis of the environmental effects of the project. The specific use of the AdH sediment transport modeling results were to identify advanced maintenance areas (based on comparison of the average deposition rates generated by the model for the existing and with-project conditions) and to support the shoaling estimates independently developed from a quantitative analysis of historical dredging records.

- EPA recommends the SEIS address expressed concerns regarding the incomplete understanding of the channel-enlargement impacts provided in the draft SEIS' analysis and presentation of the salinity results.

RESPONSE: The USACE has extensively assessed possible salinity changes and related floral and faunal changes. The USACE has developed detailed analyses that use the available information in a variety of evaluations to model salinity changes and model the effects of those changes. The river currently exhibits wide variation in salinities, and the salinity models were calibrated using observed data. The salinity models were then used to assess changes in the wetland, submerged vegetation, benthic macroinvertebrate, and fish communities. The findings are available in the appendices to the SEIS.

The salinity changes in the marsh of the Timucuan Preserve are largely dependent on the changes in the main channel. The marsh flushes twice daily, exchanging marsh water with water from the St. Johns River. Therefore, the river salinity fluctuations and the marsh salinity fluctuations are very closely tied. Small fluctuations in the river mean small salinity fluctuations in the marsh.

The results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition at the mouths of tributaries discharging from the Timucuan marshes. Because the predicted salinity changes at the tributary mouths are small, little salinity change would propagate into the tributaries. Additional modeling of the Timucuan marsh system confirmed the marshes will experience little change in salinity as a result of channel deepening. The results of tributary modeling are presented in Appendix A, Attachment M Hydrodynamic Modeling for Salt Marsh and Tributaries Salinity and Water-level.

- EPA recommends the SEIS address expressed concerns regarding the unclear characterization of the actual ODMDS site as new or existing.

RESPONSE: The ODMDS will be an expansion of the existing site or a new site or some combination of the existing site, expansion of the existing site, and a new site. This is being evaluated by EPA which has regulatory authority concerning the designation of the ODMDS. For additional information, refer to EPA's EIS on a new or expanded ODMDS for Jacksonville Harbor
<<http://yosemite.epa.gov/oeca/webeis.nsf/EIS01/F28CEB5C12546E8E85257BEB001BFFD6?opendocument>>.

- EPA recommends the final SEIS address expressed concerns regarding the adaptive management plan's missing key elements, e.g., trigger thresholds and specific corrective actions. EPA notes the recently revised Appendix F is a significant improvement over the monitoring adaptive management plan provided in the May 2013 draft SEIS.

RESPONSE: As stated in Appendix F, provisional thresholds have been established. An interagency team will determine final thresholds during the detailed design phase of the project.

- EPA is interested in being involved in the coordination regarding wetlands restoration opportunities and participating in the proposed Adaptive Management Team for the life of the proposed action.

RESPONSE: USACE will work with EPA through this process.

- EPA recommends COE resources for the proposed Dame Point station be redirected to add a new monitoring station to the existing monitoring station network operated (or proposed to be operated) by the USGS and the PORTS Awareness Project. This recommendation assumes the USGS continues to fund its Dames Point monitoring site.

RESPONSE: The USACE will take this recommendation under consideration during interagency coordination during the detailed design phase of the project.

- EPA would like to see more specifics on the how this team will be developed, operated, and the role of other agencies on this team. It would like to see the appropriate resource agency involvement should they not be a "regulatory" agency.

RESPONSE: The team would consist of State and Federal regulatory agencies having jurisdiction and expertise on relevant resources. Other persons or groups with expertise and willingness to contribute to the process would either participate or be consulted.

- EPA notes the language used in the Adaptive Management Plan language: The USACE and the agencies agree that this period of time is necessary to evaluate potential salinity effects by the proposed work. EPA is unaware of any formal agreement to any specified period of time and requests this language be removed or appropriately qualified.

RESPONSE: This section will be revised in the Corrective Action Plan, earlier referred to as the Adaptive Management Plan.

- EPA recommends this agreement may be best obtained from the appropriate representation of resource and regulatory agencies on the proposed adaptive management team to allow scientific study to inform the appropriate monitoring period.

RESPONSE: The proposed monitoring plan recommends a minimum of 9 years (4 years construction + 5 years post-construction) of data collection to a maximum of 16 years (6 years construction + 10 years post-construction) paid for by the project. The plan also expects to leverage data from existing monitoring stations funded by other entities. This leveraged data can potentially extend the period of record to greater than 20 years at certain locations. The team has reviewed historic precipitation and flow data and used this information to develop the recommended monitoring periods in the plan. The recommended minimum monitoring period (9 years) is believed to be sufficient to capture wet/dry seasonal fluctuations as well as multi-year El Niño/La Niña cycles as seen in the historic data. Monitoring will not be extended beyond the 10 years post-construction as recommended in the plan.

- Moreover since the assessment did not include impacts to the surficial aquifer and associated impacts to freshwater wetlands potentially affected by an impacted surficial aquifer system, nor include ground water monitoring, the appropriate monitoring period may need to reflect a longer period than proposed.

RESPONSE: The potential impacts to the tributary surface water and the surficial aquifer were addressed in the report. Salinity modeling results for the lower St. Johns River show very small project impact on salinity transport in the main stem of the river and the tributary models show smaller effects in marsh areas in the tributaries. The USGS modeling does not show any impact to the water table fraction of the surficial aquifer. Groundwater in the water table generally flows from areas of higher elevation towards

the tributaries where it discharges. The intervening wetlands can be recipients of the flow as it moves down gradient at the water table. Since the water table does not change in salinity, there will be no impact to fresh water wetlands from project related effects on the water table.

The effect to the limestone of the surficial aquifer that the USGS modeled is located at the base of the surficial aquifer, not the water table fraction. The surficial aquifer limestone in the project area is buried beneath approximately 40 feet of sand, silt and clay and is well below the level of the freshwater wetlands. Modeling shows that under the most highly transmissive conditions, the limestone will increase in salinity only very near the river channel.

- EPA also recommends appropriate ground water monitoring -see above discussion on ground water impacts to the surficial aquifer under the Water Quality-Public Water Supplies section.

RESPONSE: Ground water monitoring will be examined under the detailed design phase of this project, but the limestone in the surficial aquifer is already impacted by saline water (Spechler and Stone, 1983). No salinity changes are anticipated outside of the immediate channel area and those changes are minor to groundwater already impacted where topography is low. No groundwater impact will occur where the topography is high and the groundwater has a steeper gradient to the river/tributary.

Additionally, the ecological assessment did not include Sea Level Rise (SLR) and Public Water Withdrawal (PWW) conditions. This study only looked at a six-consecutive-year period of data to project for a 50-year period associated with the project life (2068) despite the proposed action's construction realizing impacts more permanent.

RESPONSE: The salinity modeling did include PWW and Sea Level Change scenarios. The ecological assessment also include PWW and SLC, however impacts were based on the completion of construction rather than a 50 yr projection.

The six-consecutive-year period, from 1996 to 2001, was selected based on the best available information to use as input to the models and the time period's representation of seasonal and annual variability in river flow conditions.

The various alternatives were evaluated with a six-year model simulation period (1996 – 2001) that included the three driest consecutive years (1999 – 2001) recorded for the LSJR basin. Selection of this period provides a conservative estimate of salinity impacts because the dry conditions should allow increases in salinity farther up the river than under a more typical rainfall pattern. The ecological models applied EFDC model results from 1996 to 2001. The model scenarios for 50 year future conditions included reasonable and consistent estimates of future conditions including the SJRWMD projection of PWW and the USACE Sea Level Change (SLC) guidance and therefore

allows comparison of project-induced changes relative to a with and without-project condition 50 years in the future.

- It is unclear from the ecological assessment whether the proposed action will alter the salinity distribution in the surficial aquifer system and potentially impact any of the fresh water wetlands depicted in Figure 18 of the SEIS.

RESPONSE: The water table is in communication with the St. Johns River, and modeling does not show any impact to the water table. If saline water is introduced within the porous sediment below the water table, it is denser than the fresh water at the water table and tend to sink. This would keep the wetlands exposed to fresh ground water until sea level rise eventually encroaches on and floods wetlands with saline water from tidal exchange. Salinity modeling results for the lower St. Johns River show very small project impact on salinity transport in the main stem of the river and the tributary models show smaller effects in marsh areas in the tributaries.

- EPA notes the Adaptive Management Plan language has proposed examples of provisional thresholds without providing supporting environmental data or study as to their appropriateness, e.g., Section 4.3.1. EPA recommends these thresholds may be best developed from the appropriate representation of resource and regulatory agencies on the proposed adaptive management team to allow scientific study to inform the appropriate thresholds. Moreover, it is unclear whether the language "team of agency experts" refers to the USACE' team or to the proposed Adaptive Management Team, in the discussion on finalizing threshold values.

RESPONSE: As stated in Appendix F, provisional thresholds have been established. An interagency team will determine final thresholds during the detailed design phase of the project.

- EPA re-emphasizes its earlier comment: only dredged material passing the ocean dumping criteria is permitted to be disposed offshore in EPA-designated offshore dredged material disposal sites. It remains unknown whether any of the material proposed to be dredged will meet ocean-dumping criteria, or will require special management practices or a non ocean-disposal site since the material has not been tested.

RESPONSE: Testing has been done on materials up to River Mile 8 and was shown to pass. However, additional testing will be done on the entire project area (Entrance Channel to approximately River Mile 13) during PED.

- EPA reiterates the presence of contaminated sediments likely will increase the cost of the proposed action and potentially negate the use of offshore disposal. The SEIS should address these issues including what will need to be done with contaminated

dredged material and the associated costs of addressing its disposal.

For example, one of the areas with the highest metal enrichment is downtown Jacksonville. Many sites were found to be moderately to heavily polluted by trace metals: chromium, cadmium, mercury, nickel, and zinc were found at Commodore Point, Talleyrand, and the mouth of the Trout River.

Within the area of the proposed action -the Blount Island area, Dames and Moore found enrichment in cadmium, chromium, and mercury. Additionally the Jacksonville Port Authority has noted enrichment in chromium and zinc, while the Coastal Zone Management Section study showed increased mercury levels. Sediment contamination issues -could affect the cost of the proposed action and the use of offshore disposal.

RESPONSE: The sites referenced as “moderately to heavily polluted by trace metals...” by the 1994 SJRWMD Special Publication are not located within the project area. The Dames and Moore report analyzes data collected in 1982 and has three representative samples from the project area. The dry weight levels of cadmium, chromium, and zinc are all below the Threshold Effects Level (TEL) and Effects Range-Low (ERL) for each of the samples. Subsequent testing has been performed and the suitability of maintenance dredged material for ocean disposal was confirmed for material west of Cut 3 station 210+00 through Cut 41 (approximately River Mile 8) by EPA on 23-JUN-2011.

- Air Quality. EPA finds the revised (10/24/13) draft SEIS adequately identified 'near-port' sensitive populations located approximately 1,500 feet in context of any current or reasonably foreseeable future air toxics emission sources including prevailing meteorological conditions and relevant topography. EPA continues to recommend the final SEIS clarify the draft SEIS' confusing and uninformative comparative regional air toxics analysis for identifying potential local air-toxic issues. For example, the earlier analysis regarding additional tons per year of benzene emissions to the design year for the air shed has no context to provide meaningful information to inform the public or decision maker.

RESPONSE: The USACE believes this comment is in reference to Appendix I, Air Emission Inventory. The discussion on air toxics shall be clarified by removal of information on toxic air pollutant loading estimates.

- Environmental Justice (EJ) and Children's Health. EPA appreciates the revisions to the draft SEIS that analyze potential disproportionate effects to minority and low-income communities within a mile of the navigation channel. In addition, juvenile populations were identified along with the locations of hospitals, and schools/child care facilities within one mile of the navigation channel and the area where the proposed deepening would occur. Given the fact that the populations with environmental justice concerns and juveniles are primarily located outside of the 13-mile area proposed for

improvements, disproportionate effects are not anticipated. However, should future improvements occur between river miles 13 and 20 in the navigation channel, then additional targeted outreach and consideration of potential environmental justice and children's health issues may be necessary.

RESPONSE: No response required.

U.S. Department of the Interior (National Park Service)

- **Page viii (and later repeated on p 114)**

States "Sea Level Rise: Stakeholders have expressed concern regarding the rates of sea level rise that are being used in the modeling instead of a greater rate of increase. The U.S. Army Corps of Engineers (USACE) is required to perform these analyses based on provided guidance Engineering Circular, EC 1165-2-211." Did this document expire in July 2011 and, if so, how does this affect the analysis of sea level rise in the DSEIS?

RESPONSE: USACE Engineering Circular (EC) 1165-2-211 expired in 2011, and was replaced with EC 1165-2-212, Sea-Level Change Considerations for Civil Works Programs which officially expired on 30 September 2013. USACE Engineering Circular (EC) 1165-2-212 has been extended to March 31, 2014 to allow additional time to finalize the Engineering Technical Letter (ETL) which will replace it. The EC method for calculating relative sea-level change (SLC) projections for a range of future scenarios is still appropriate based on updated scientific findings and is expected to be carried forward in the ETL without significant changes. However, it is expected that the ETL will recommend future project design studies and alternative evaluations also consider potential SLC adaptation needs for a project service life of up to 100 years where appropriate. Modeling completed for the Draft GRR2 studies addressed a wide range of future scenarios including up to +6 feet of SLC for storm surge modeling which is roughly the high rate SLC projection for the project area to 2110. Future sea level change scenarios are presented in Appendix A- Engineering, Attachment J. Hydrodynamic Modeling for Storm Surge and Sea Level Change, Attachment K. Hydrodynamic and Salinity Modeling for Ecological Impact Evaluation, and Attachment M. Hydrodynamic Modeling (ADCIRC/ MIKE21) for Salt Marsh and Tributary Salinity and Water Level.

- **Page 28, Section 2.2.10**

The last paragraph, last sentence: "The Preserve also includes Kingsley Plantation, a recreation of a 19th century Florida Plantation..." is not accurate. Please revise as follows, "The Preserve includes Kingsley Plantation on the Fort George River, listed on the National Register of Historic Places it is the oldest remaining example of an antebellum Spanish Colonial Plantation and has the largest concentration of tabby slave quarters in the United States. Also included in the Preserve, is Fort Caroline National Memorial which is on the St. Johns River. Fort Caroline National Memorial was established in 1950 in commemoration of the 16th century French settlement of La Caroline, and the Ribault Monument." See the following website for the 2013 The

Preserve's Foundation Document Overview:

http://www.nps.gov/timu/parkmgmt/upload/TIMU_Overview_1113-Final-2-2.pdf

RESPONSE: Revised as requested.

- **Page 33, Section 2.2.10. National Park Partner Preserves**

The listing does not include all of the public sites within the Preserve. Please revise to include the following two sites: Cedar Point and Theodore Roosevelt Area. See the following website: <http://www.nps.gov/timu/planyourvisit/placestogo.htm>

RESPONSE: Revised as requested.

- **Page 37, Section 2.2.13 Noise**

There are two National Park sites, Fort Caroline National Memorial and Ribault Column (reach 6), that are adjacent to the St. Johns River and frequently host events that would be sensitive to noise, such as living history encampments, educational programs, weddings, naturalization ceremonies, bird watching and nature hikes. Some members of the public may use the Fort Caroline boat dock to access these events. Please revise the SEIS to include these activities and provide an analysis of the impacts of the proposed action on these public educational and enjoyment activities.

RESPONSE: Revised as requested.

- **Page 46**

States: "However, the species has not been observed by USACE biologists who have visited the park during the fall and winter months." The text needs to include some quantification of the level of effort involved with these visits. If they are simply site visits with incidental bird observations, then the lack of sightings may not be very informative. If the visits included systematic surveys for the species, then those details should be provided. The statement as written, without additional details, is merely anecdotal and doesn't add much to the background information for piping plovers.

RESPONSE: This information may be more relevant to the proposed Mile Point project. Therefore, this section has been revised.

- **Page 50**

For the loggerhead sea turtle, the DSEIS states: "Critical habitat has not been designated for this species." There is now a proposed rule to designate critical habitat. See <http://www.gpo.gov/fdsys/pkg/FR-2013-03-25/pdf/2013-06458.pdf>

RESPONSE: This section has been revised to include this information.

- **Page 53 2.3.2.7 Kemp's Ridley Sea Turtle**

States: "Personal communication with Bobby Taylor, CPAC District 6 Chair, one Kemp's Ridley Sea Turtle nested at Huguenot Memorial Park this summer (June 2012)." Please confirm and revise to note occurrence of the turtle in the project area.

RESPONSE: This information has been added.

- **Page 65, Table 11, Mammals inhabiting Huguenot Park**

The mammal list in the DSEIS from Huguenot Park is not fully reflective of the range of species occurring in the diverse natural communities of the project area within the Preserve. The Fort Caroline National Memorial and the Theodore Roosevelt Area contain the largest expanse of protected natural area (700+ acres) within the project area. Please revise the list to include those mammals that occur within the Preserve and potential impacts of the proposed project on these species and their habitats within the project area. Included at the back of this enclosure on pages 16 is the Certified Species List for Mammals in the Preserve.

- RESPONSE: Reference will be made to the Species list for Mammals in the Preserve.

- **Page 66, Section 2.3.5 Birds**

The description of species monitoring does not include the efforts of the NPS. The Preserve, through the NPS Inventory and Monitoring Program, collects bird monitoring data. Landbird monitoring data were collected at 26 spatially-balanced random locations at the Preserve using an adaptation of the variable-circular plot (VCP) technique with distance estimation. Sampling activities occurred in April and in May 2010. There were 653 birds representing 50 species detected and the house finch was the only non-native species detected. An evaluation of sampling effort relative to the number of species detected indicated that the sample adequately characterized the bird diversity, and analyses suggest bird diversity is medium at the Preserve. Carolina wren, Northern cardinal, and tufted titmouse were detected at 92% or more sampling locations, and were the most widely distributed species at the Preserve. Please revise the SEIS to include additional discussion of bird monitoring and revise the species list to include the additional species confirmed within the Preserve. Included at the back of this enclosure on pages xxx is the Preserve's bird species list containing over 300 species.

RESPONSE: Reference will be made to the Species list for Birds in the Preserve.

- **Page 66**

Table 12 lists red knot, a bird species that is a Candidate for federal listing under the Endangered Species Act. It would be useful to add red knot to the discussion of federal Threatened & Endangered species. More details on this species' status can be found at: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=BODM>

RESPONSE: This section has been revised to include this information.

- **Page 70, Table 13, Amphibians and Reptiles inhabiting Huguenot Park**

The amphibian and reptile list from Huguenot Park is not fully reflective of the range of species occurring in the within the Preserve. Please revise the list in the SEIS to include those amphibian and reptile species that occur within the Preserve and the impact analysis to account for impacts to these additional upland and freshwater species within the project area. Included at the back of this enclosure on pages 17- 18 is the Certified Species List for Amphibians in the Preserve.

RESPONSE: Reference will be made to the Amphibians and Reptiles Species list in the Preserve.

- **Page 71, Section 2.3.7., Macro invertebrates**

A literature-based benthic macro invertebrate inventory (BMI) was conducted for nine southeastern parks including the Preserve. The results presented in this inventory include: a baseline inventory of BMI abundance and community composition, based on recent studies in or adjacent to mapped park boundaries; the predicted distribution of BMI, according to habitat type and geography; documentation of species occurrences with vouchered museum records; determination of the status of any Species of Concern; and recommendations for continued and future monitoring efforts of BMI in park habitats. An excerpt from this inventory includes the following description of BMI taxa:

- “In the Preserve (TIMU), six stations from EMAP, 27 from the Lower St. Johns River (LSJR) studies and four from a 2003 commissioned study, documented more than 350 BMI taxa. The majority of stations reported moderate to high H', with a low of 1.31 in the western-most LSJR station, to a high of 4.74 from Clapboard Creek, inside TIMU boundaries. Dominant BMI taxa included polychaetes (Sabellaria vulgaris, Tharyx spp., Aphelochaeta marioni, Paraonis fulgens, Caullerilla spp., Streblospio benedicti, Mediomastus spp., Marenzelleria viridis, Podarke spp., Paraprionospio pinnata), gastropods (Boonea impressa, Nassarius obsoletus), bivalves (Pleuromeris tridentata, Tellina versicolor, Gemma gemma, Abra aequalis), amphipods (Rhepoxynius hudsoni, Protohaustorius deichmannae, Apocorophium lacustre), and phoronid worms (Phoronis spp.).”

The studies listed in the EIS need to be updated with more recent investigations as discussed in the following excerpt of the report:

- “Several studies have examined BMI communities in Florida habitats. In 2004, BVA and Continental Shelf Associates, Inc. (CSA) investigated potential sand-borrow areas along the Florida coast, for the MMS. As part of the Monitoring and Event Response for Harmful Algal Blooms (MERHAB) program, Cooksey et al. (2001) conducted BMI surveys along the St. Johns River. Other St. Johns River studies with BMI surveys include Evans (2001), Evans et al. (2004), and Landesberg et al. (2004). Florida sites were also used by Van Dolah et al. (1999)

to develop their B-IBI. In 2003, a study of BMI invertebrates in TIMU was commissioned by park personnel for a site near Sisters Creek and the Ft. George River (Long 2004) The Port of Jacksonville was included in BMI surveys conducted by Power et al. (2006).”

Please revise the SEIS to account for this more recent data and provide an analysis of the impacts of the proposed action. See References below:

- Hymel SN. 2009. Inventory of marine and estuarine benthic macro invertebrates for nine Southeast Coast Network parks. Natural Resource Report. NPS/SECN/NRR—2009/121. National Park Service. Fort Collins, Colorado.
- https://irma.nps.gov/App/Reference/DownloadDigitalFile?code=151519&file=Hymel_2009_Inventory_of_Marine_and_Estuarine_Benthic_Macroinvertebrates_for_Nine_Southeast_Coast_Network_Parks.pdf

RESPONSE: Additional discussion has been added to the SEIS.

- **Page 75, Section 2.3.11, Other Vegetation Communities**

In 2005 a comprehensive floristic survey was conducted for the Preserve. Nine community types were identified in the Preserve, seven of which occur within the project area which includes Fort Caroline National Memorial and the Theodore Roosevelt Area. These include: open beach along the shoreline of the Fort Caroline exhibit; extensive expanses of salt marsh in the northern portion of the Theodore Roosevelt Area and the western side of Fort Caroline; shell middens in the salt marshes of the Theodore Roosevelt Area and integrating with the maritime hammock, which also borders the salt marsh of Fort Caroline; sandhill community in the Theodore Roosevelt Area; freshwater ponds and mixed swamp – maritime hammock at Fort Caroline National Memorial and the Theodore Roosevelt Area; and disturbed habitats which occur around development for facilities and public access. Please revise this section in the SEIS to include a more descriptive discussion of the diverse vegetation communities in the project area so that the impacts can be evaluated based on a more comprehensive understanding of the habitat and associated species occurring within the project area. See Reference:

- Zomlefer WB and Others. 2007. A floristic survey of NPS areas of the Preserve including Fort Caroline National Memorial, Duval County, Florida. Journal of the Botanical Research Institute of Texas. 1(2):1157-1178.

RESPONSE: Additional discussion has been added to the SEIS.

- **Page 80, Section 2.3.13**

In the last paragraph which lists the efforts to control Tamarix please make the following correction: “the Florida Plant Management Team” is called the “Florida/Caribbean Exotic Pest Management Team and the Preserve, ...”

RESPONSE: Revised as requested.

- **Page 81, Section 2.3.13**

Please revise the first paragraph to state: “The annual volunteer effort to remove air potatoes is coordinated by the First Coast Invasive Working Group and includes Duval, Clay, St. Johns, Baker and Nassau Counties.” See <http://www.floridainvasives.org/firstcoast/>

RESPONSE: Revised as requested.

- **Page 109, Section 3.6**

Does the O&M projection include maintenance of the Fort Caroline training wall adjacent to Fort Caroline National Memorial which has been the subject of a Water Resources Development Act 2007 Authorization but has not received appropriated dollars for the rehabilitation work? What measures will be taken to prevent or mitigate the loss of federal investments in visitor facilities at Fort Caroline National Memorial from the impacts of the proposed action? (Note this issue was raised during the Feb 7, 2008, feasibility scoping meeting, and on page 308.)

RESPONSE: The O&M project includes changes to future O&M attributed to the federal project, deepening of the harbor. Maintenance of the Fort Caroline training wall is not a part of this project authorization.

- **Page 112, Public and Agency Concerns**

The NPS has expressed concerns about the rate of shoreline erosion along the St. Johns River at Fort Caroline and impacts to visitor facilities (trails, boat ramp, observation deck and exhibits) and natural resources (loss of mature oak and pine trees to erosion and saltwater intrusion in the root zone). This concern has been shared with the USACE in regards to rehabilitation of the training wall in reach 6. (Note this issue was raised during the Feb 7, 2008 feasibility scoping meeting, and on page 308.) Please revise the report to describe plans to rehabilitate the training walls and alternative measures to prevent or mitigate additional shoreline loss from the proposed deepening, widening and maintenance dredging on NPS resources at Fort Caroline National Memorial in reach 6.

RESPONSE: The USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor Improvement project as recommended in the Navigation Study. This position is based on analysis of the predicted changes in current velocities along the project (determined to be negligible) and a side slope analysis of the predicted channel slopes relative to the existing shoreline (no direct impact). In addition, we have completed a non-dynamic analysis of ship wake height within the channel limits. The results of this analysis indicate that ship wake height will not increase for the with-project design vessel, with vessel speed not increased above that used in the existing conditions channel. Furthermore, ship traffic operations and usage of vessels on the St. Johns River and the Federal navigation project by the general public and shippers is not regulated by the U.S. Army Corps of Engineers, but rather by

the U.S. Coast Guard and various State and local agencies. Changes in types of vessels, frequency of transit, vessel speed, proximity to shoreline and other operational parameters may occur with or without the implementation of the new project. As with any large, dynamic riverine system it is a fact that areas along the St. Johns River shoreline are subject to erosion and/or accretion of material over time regardless of the level of human impact or activity. In other words, the St. Johns River is not a static entity and is very much affected by a wide variability in conditions produced by the natural environment including extreme events such as hurricanes and droughts. Therefore, any increased erosion due to maritime activities or any changes in such activities over time would be extremely difficult to assess as being attributable solely or in part to the proposed channel improvements. Any incident of observed erosion would have to be specifically investigated in order to attempt to determine its cause as every location along the St. Johns River has site specific conditions unique to that exact location.

- **Page 117, Section 4.3.1.1, Study Objectives**

Which reaches have limited one-way constraints and what is the reason for the navigation constraints?

RESPONSE: There are various cuts in the channel that are restricted to one-way traffic by the St. Johns Bar Pilots due to varying channel widths as well as areas of difficult cross-currents. Two areas (Training Wall Reach and St. Johns Bluff Reach) within the project area were determined to allow for two-way traffic if constructed, this is discussed in the Engineering Appendix A under the ship simulation attachment.

- **Page 134, Section 7.3.1,**

In the table on Page 134 at the LPP/TSP (47ft) it states: "Generally slight changes in physical and water quality conditions. However, changes may be greater in specific areas." Please explain these conditions and which areas may see greater changes.

RESPONSE: The USACE has extensively assessed possible salinity changes and related floral and faunal changes. The USACE has developed detailed analyses that use the available information in a variety of evaluations to model salinity changes and model the effects of those changes. The river currently exhibits wide variation in salinities, and the salinity models were calibrated using observed data. The salinity models were then used to assess changes in the wetland, submerged vegetation, benthic macroinvertebrate, and fish communities. The findings are available in the appendices to the SEIS.

The salinity changes in the marsh of the Timucuan Preserve are largely dependent on the changes in the main channel. The marsh flushes twice daily, exchanging marsh water with water from the St. Johns River. Therefore, the river salinity fluctuations and the marsh salinity fluctuations are very closely tied. Small fluctuations in the river mean small salinity fluctuations in the marsh.

The results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition at the mouths of tributaries discharging from the Timucuan marshes. Because the predicted salinity changes at the tributary mouths are small, little salinity change would propagate into the tributaries. Additional modeling of the Timucuan marsh system confirmed the marshes will experience little change in salinity as a result of channel deepening.

- **Pages 133-137, Table 33 - Effects Analysis:**

States: “Deepening would have no effect on Sea Level Rise (SLR). Per USACE guidance, predicted rates of SLR (in 2068) are 0.39 ft. (historic rate) 0.87 ft. (intermediate rate), 2.39 ft. (high rate). Inundation would occur in certain areas.” It is not clear that the text matches the output from the USACE SLR calculator. According to the USACE SLR calculator (<http://corpsclimate.us/ccaceslcurves.cfm>) (Note – curve calculator provides “low” rate but not “historic rate”), the results are as follows: Calculating SLR using the USACE SLR calculator and the data from the tide gauge at Mayport, Fl., the results of the two models (211 and 212) are:

- EC 1165-2-211
- Year 2068: High = 3.11, Intermediate = 1.21, Low = .62
- EC 1165-2-212
- Year 2068: High = 2.71, Intermediate = 1.08, Low = .57

The text provided in Table 33: Summary of Direct and Indirect Impacts provides SLR values different from those obtained on the USACE calculator site. The DSEIS text values are lower than those provided via the online calculator. It is not clear whether or not there is a true discrepancy and, if so, how this would affect the impacts of the alternatives as modeled considering SLR. Additionally, the calculations above were based on predictions to 2068. But, it is not clear why these would not be made for 2065 which would be in agreement with a base year of 2015 followed by a 50 year project length. Please address these discrepancies in the FSEIS.

RESPONSE: USACE Engineer Circular (EC) 1165-2-211 has been superseded. Only sea level change (SLC) projections calculated per EC 1165-2-212 guidance may be used for current USACE studies. Note that the “low” rate is the “historic” rate. The difference between the USACE website values (<http://www.corpsclimate.us/ccaceslcurves.cfm>) using the EC 1165-2-212 sea level changes curves and the Jacksonville DSEIS is that the sea level change values from the website are referenced to 1992 while the Jacksonville DSEIS values are referenced to the estimated project completion year (2018). The Jacksonville DSEIS will be revised to clarify this point. The proposed Jacksonville Harbor channel deepening is currently anticipated to be completed in four to six years after construction authorization and funding. The actual project completion year is one a many uncertainties in evaluating the cumulative and project impacts. The selection of 2018 as the year of project completion is considered a reasonable assumption for

impact evaluations. Variations of 1 to 5 years in the project completion year represent a change in the low sea level change that is less than the uncertainty in the value.

- **Page 139, Section 6.1, Description of the Tentatively Selected Plan (TSP); See also Figure 24**

St. Johns Bluff Reach (approximate River Miles 7-8) is one of the sections of the St. Johns River that is proposed for widening within the Tentatively Selected Plan. Both sides of the channel would be widened by varying amounts up to 300 ft. The Fort Caroline area of the Preserve is located along the south bank of the river in that immediate area. The NPS is concerned that the widening of the south side of the channel, combined with the deepening of the channel will increase shoreline erosion along the southern bank of the St. Johns River and adversely impact the Preserve's natural and cultural resources. Have any of the modeling studies performed to date considered this potential impact? The NPS requests that the USACE address this concern during ongoing project discussions between the two agencies, and as appropriate, in the Final Draft of the GRR II and FSEIS.

RESPONSE: As previously stated, the USACE does not anticipate increased shoreline erosion as a direct result of the construction of the Jacksonville Harbor Improvement project as recommended in the Navigation Study.

- **Page 142**

"Based on historical sea level measurements taken from National Ocean Service (NOS) gage 8720218 at Mayport, Florida, the historic sea level rise rate (e+M) was determined to be 2.29 +/- .31 mm/year (0.0076 ft/year) (<http://tidesandcurrents.noaa.gov/sltrends/index.shtml>). The project base year was specified as 2015, and the project life was projected to be 50 years. The results of equation (3) every five years, starting from the base year of 2015 shows the average baseline, intermediate, and high sea level change rates were found to be +2.29 mm/year (0.0078 ft/year), +4.67 mm/year (0.0174 ft/year), and +12.05 mm/year (0.0479 ft/year), respectively." The data from the tides and currents.noaa.gov website indicates SLR to be 2.4mm/year based on data obtained from the Mayport, Florida, tide gauge. It is not clear whether or not there is a true discrepancy and, if so, how this would affect the impacts of the alternatives as modeled considering SLR.

According to the following website

<http://tidesandcurrents.noaa.gov/sltrends/index.shtml>,

The mean sea level trend is 2.40 mm/year with a 95% confidence interval of +/- 0.31 mm/year based on monthly mean sea level data from 1928 to 2006 which is equivalent to a change of 0.79 feet in 100 years.

RESPONSE: For the Jacksonville Harbor GRR2 studies, the National Oceanic and Atmospheric Administration (NOAA) Tide Station 8720218 at Mayport (Bar Pilots Dock), FL was used as the local reference for sea-level change (SLC) projections. The Mean Sea Level Trend at this station based strictly on local observations is +2.40 mm/yr (0.79 ft/100 years) per NOAA online info available at:

http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8720218 Per NOAA, long term sea level trends observed in tide station records include a component due to oceanographic variables and a component due to local Vertical Land Motion (VLM). The oceanographic component includes the global (eustatic) sea level trend, plus tide station location specific sea level variations acting on different scales (local to regional) and at different frequencies (storm surge to seasonal to decadal scale). In the past, local VLM has been estimated simply by subtracting the global sea level trend from the local mean sea level trend developed from local tide station records. NOAA Technical Report NOS CO-OPS 065, Estimating Vertical Land Motion from Long-Term Tide Gauge Records, dated May 2013 provides improved estimates of local VLM through a process which references regional long-term tide stations and removes regional oceanographic variability. This NOAA report is available online at: http://co-ops.nos.noaa.gov/publications/Technical_Report_NOS_CO-OPS_065.pdf These regionally corrected VLM estimates added to the global sea level trend provide more technically accurate local mean sea level trends. The regionally corrected mean sea level trend for Mayport, FL is +2.29 mm/yr, and this is the value used by the USACE and NOAA to develop SLC projections using the USACE Sea-Level Change (SLC) calculator.

The EC 1165-2-211 SLC projections listed in the comment above are incorrect. Attached are copies of USACE SLC calculator outputs for Mayport, FL for both EC 1165-2-211 and EC 1165-2-212. The differences between the projections are due to updates in the equations used in the EC 1165-2-212 calculations. EC 1165-2-211 has been superseded. Only SLC projections calculated per EC 1165-2-212 guidance may be used for current USACE studies.

- **Page 143**

First paragraph states: “The effect of tides on the river is significant. Tidal influences are prevalent from the mouth of the river to slightly more than 100 statute miles upriver, near Georgetown.” The NPS recommends that the study look at how deepening the channel may affect salinity at various tides (water levels) within the tributaries. This will help us understand the magnitude of potential changes in salinity and impacts on NPS resources.

RESPONSE: The results of salinity modeling of the main stem and tributaries can be found in Appendices A and D.

- **Page 143**

Third paragraph states: “In the St. Johns River, the tidal current consists of saltwater flow interacting with freshwater discharge. According to the U.S. Geological Survey seawater moving upstream from the mouth of St. Johns River mixes with the river water to form a zone of transition.” The mixing of freshwater and saltwater in the transition zone can be caused by forces of rising and falling ocean tides. Tidal fluctuations are also known to cause cyclic fluctuations of ground-water levels (mixing). Animals and plant species may have difficulties adapting to changing and fluctuating tides along with quality of water. Deepening of the channel may impact the surficial aquifers and

indirectly affect the coastal marsh plant community (change community composition and diversity of plants), streams and tidal creeks. Please include a discussion of these potential impacts in the FSEIS.

RESPONSE: According to surface water modeling of the main channel, there will be minor salinity increase from the project, and the water will be mixed by tidal actions reacting with river discharge. USGS modeling took the surface water model data to run the potential impact to the surficial aquifer. Under the worst case geologic scenario tested only one area along the project would have increased salinity. This geologic scenario is not plausible because of variability of the occurrence and the lack of uniformity of the geologic materials.

- **Page 145**

Chapter 6.3.5.2, Confined Underwater Blasting Section: “To achieve the deepening of Jacksonville Harbor from the existing depth of 40 feet to project depth of 47 feet, pretreatment of some of the rock areas may be required. The use of confined underwater blasting as a pre-treatment technique is anticipated to be required for some of the deepening and widening of the authorized Federal project.” The NPS understands that the underwater blasting technique which is proposed in this plan to break up rock prior to the removal of dredge material will likely increase saltwater intrusion into freshwater aquifers and change the quality of fresh ground-water discharge to marshes, streams, and tidal creeks. U.S. Geological Survey, 1999 states, “Groundwater can be a significant source of freshwater to some coastal waters and its role in delivering excess nutrients to coastal ecosystems is of increasing concern because of the widespread nutrient contamination of shallow ground water.” The NPS understands that saltwater has a higher content of dissolved salts and minerals; it is denser than freshwater, causing it to have higher hydraulic head than freshwater. The higher pressure and density of saltwater causes it to move at a faster rate into freshwater aquifers where mixing occurs through dispersion and diffusion. The NPS recommends that the USACE consider developing an alternative plan to break up consolidated rock materials in lieu of the blasting technique as referenced on page 145 of the DSEIS, this would help minimize impacts to ground-water, wildlife and aquatic resources. In addition, we recommend long term modeling for saltwater intrusion in the tidal creeks and marshes.

RESPONSE: Groundwater that discharges to the marshes does not come from the rock that will be pretreated but comes from unconsolidated sediments near the ground surface. Therefore, blasting will not have an impact on the tidal marshes. Surface water in tidal channels along the project will have similar mineral concentrations to river water from which much of it originated. The USACE has not limited rock pretreatment to blasting. Blasting may be required, but other alternatives are available to pretreat the rock. Current rock strengths suggest that not all rock will require blasting or pretreatment.

- **Page 155, Section 6.3.5.2, Confined Underwater Blasting – Protocol**

The NPS is preparing to initiate an interpretive boat tour that will travel between Fort Caroline National Memorial boat dock on the St. Johns River to Sisters Creek Jim King Marina and Kingsley Plantation. This boat tour was approved in the 1996 General Management Plan for the Preserve and should be considered in the future condition for impact analysis on recreational resources. The boat tour is expected to begin in FY14. If the confined underwater blasting impact area include portions of the St. Johns River between Fort Caroline National Memorial and Sisters Creek, we request that notification measures be incorporated into the contract and implemented, to alert the NPS, the Preserve's Superintendent, and boat operator at a minimum of 2 weeks prior to any planned blasting and dredging that would affect the use of the boat dock or tour operation on the river between Fort Caroline and Sister's Creek.

RESPONSE: Notification to all user groups, including NPS, shall be made.

- **Page 162, 6.4 LERRDS Considerations**

Third paragraph, correction: "Timucuan National Park" is not an entity; the proper name is Timucuan Ecological and Historic Preserve and Fort Caroline National Memorial, commonly referred to as Timucuan Preserve. Note, Fort Caroline National Memorial was established in 1950. The Timucuan Ecological and Historic Preserve was established in 1988 and serves as the administrative unit for both parks.

RESPONSE: Revised as requested.

- **Pages 174-175, Section 7.2.2**

States: "The U.S. Geological Survey has studied how the proposed deepening may impact groundwater and their report will be provided in summer of 2013 and referenced in the final SEIS." Please identify data which USACE used to determine that the minimal increase in river salinity resulting from the deepening alternatives demonstrates no increase in hydrostatic head along with no increase in the surficial aquifer salinity. The NPS reserves the right to revise our comments based on the review of U.S. Geological Survey study on groundwater impacts which is to be released summer of 2013. .

RESPONSE: Data from surface water modeling demonstrated that a small increase in river salinity would occur from the project. If the river water is mixed from tidal actions, and there is no increase in head on the surficial aquifer, then there should not be an increased impact to the surficial aquifer. The USGS model supports this assertion.

- **Page 175, Section 7.23, Tides**

Taylor evaluates the tide levels in the EFDC hydrodynamic model for the Jacksonville Harbor Deepening Project GRR-2 at 44ft, 46ft, and 50ft. The DSEIS does not evaluate tide levels at the tentatively preferred alternative of 47ft scenario for deepening the channel. The NPS recommends that the model runs include results for the likely scenario of 47ft. The model lacks the ability to evaluate changes in currents at specific locations. However it would be most advantageous for the NPS, who manages recreational usage within the Preserve, to know the effects of various changes in

currents (velocity). The NPS recommends that the FSEIS include analysis on changes to currents within the Preserve. The analysis will assist the Preserve in identifying the effects on park resources and the effects on recreational usage.

RESPONSE: The hydrodynamic main stem and tributary modeling reports provide information on how the Tentatively Selected Plan (TSP [47 ft]) would impact the preserve. Comparisons to the baseline scenario shows very small changes (better flushing) in the Preserve.

- **Page 176, Section 7.2.4, Currents Affecting Navigation**

What is the anticipated effect of increasing velocity upstream with a decrease in velocity downstream on sediment transport and water quality in the Preserve tributaries? What impact does this have on flushing and residence time within the Preserve tributaries? Please revise the FSEIS to include an evaluation of the change in currents and tidal range within the major tributaries of the Preserve and impacts on sediment transport, water quality, and flushing and residence time.

RESPONSE: The tributary modeling report presents information on how the TSP would impact tides and salinity in marsh areas (including the Preserve). Model results show slightly better overall flushing in the Preserve as the TSP provides a larger conveyance of water that moves saline water faster out of the Preserve during ebb tide. As the TSP does not change the tide phasing but only slightly increases tidal ranges, the area will likely experience faster water movement thus slightly better flushing.

- **Page 178, Section 7.2.6, Water Quality**

An increase in water turbidity within the park during dredging operations is a concern. NPS Management Policy (4.6.3) states that the Service will, “avoid, whenever possible, the pollution of park waters by human activities occurring within and outside the parks.” Increasing turbidity from dredging could re-suspend nutrients and contaminants. Larger ship wakes may cause erosion within the Preserve and increase turbidity. The NPS requests that the USACE develop appropriate mitigation for any increases in turbidity within the Preserve.

RESPONSE: Turbidity caused by dredging would be monitored in accordance with state water quality criteria and the state permit. If turbidity exceeds the permit conditions, then the activity causing the exceedence would be stopped until the cause is identified and corrected. An analysis of ship wake height generated by the design vessel transiting the new channel generally show that the ship wake and affect on water stages at the river banks tend to diminish under the with-project condition.

- **Pages 178-179, Paragraphs discussing 2018 and 2068 Scenarios**

The text in these paragraphs refers to Tables 45 - 49 when discussing main channel salinity values and changes in values for the dredge alternatives. It is difficult to determine which tables contain the data referred to in different text locations. In other words, the data shown in certain tables do not always match up with the discussion in

the text for that table number. Please recheck the discussion and tables on pages 178 – 181 to verify that the correct table numbers are being used in the text in the appropriate paragraphs. On page 179, Table 45 is referenced as showing the median salinity at the top and bottom layer and depth-averaged salinity for the 2018 No-Action (baseline) and 44, 46, and 50 ft. dredge alternatives. The first complete paragraph: Table 45 is referenced as showing differences between the No Action median salinity values and those of the dredging alternatives. The wrong table numbers are referenced. Table 46 shows the median salinity value at the top and bottom layer and depth-averaged salinity for the 2018 No Action and dredge alternatives, and not Table 45 as referenced in the text. In addition, it is Table 47 that shows the salinity differences that would occur between the No-Action and 2018 dredge alternatives, and not Table 45 as referenced in the text.

RESPONSE: These typographical errors are corrected in the latest revision of the DSEIS.

- **Page 181, Section 7.2.6.2, Salinity Changes**

At the time of this review, data were not available on anticipated effects of this project on tributaries within the Preserve. Without this data, we are not able to comment. Our concerns include long-term changes in salinity and turbidity within the Preserve.

RESPONSE: The tributary salinity modeling report is now available for review.

- **Page 182, Section 7.2.6.3, Other Water Quality**

Water residence time in the St. Johns River and its tributaries is a concern for NPS management within the Preserve. Results from past studies suggest that flushing of this system is slow. Because of the protracted flushing time within the Preserve, preventing the inflow of contaminants and excess nutrients is critical to the long-term management and protection of park resources. In the table on Page 133 at the Locally Preferred Plan/Tentatively Selected Plan (47ft) it states: “Deepening would result in...risk to water residence time.” Any increase in water residence time could be damaging to park resources, especially in the case of, for example, a chemical spill or a Harmful Algal Bloom event. The Environmental Fluid Dynamics Code model results do not include results for the LPP/TSP (47ft), only 40ft, 44ft, 46ft and 50ft. NPS requests the model is run with the LPP/TSP depth of 47ft so NPS can understand results for the likely scenario, in particular related to water quality impacts.

RESPONSE: Completed reports on water quality effects, water residence time, salinity are available for review. Tributary and marsh salinity modeling in North Timucuan shows the TSP will slightly decrease salinity which is attributed to slightly better flushing out of the marsh areas during ebb tide.

- **Page 183, Section 7.2.6.3 Other Water Quality Effects**

The analysis assumes that previously authorized projects as with-project condition and the modeling for water age baseline assume 2018. Was there an analysis conducted to evaluate the cumulative impacts of previous deepening impacts on water age and water

quality within the lower basin? How does the proposed deepening contribute to those impacts? What impact does this have on flushing and sediment transport within the Preserve's tributaries?

RESPONSE: There is no available information on how previous deepening projects impacted water age and water quality. For this study, tributary and marsh salinity modeling in North Timucuan shows the TSP will slightly decrease salinity which is attributed to slightly better flushing out of the marsh areas during ebb tide.

- **Page 191, Public Lands Adjacent to the Proposed Construction Area**

Rehabilitation of the Fort Caroline Training Wall has been the subject of discussion between the NPS and USACE since 2003. As a result of the change in elevation of the training wall, we have observed an increase in erosion and subsequent loss of visitor facilities (fort trail has been closed and relocated inland) and the fort exhibit is threatened by frequent overwash and occasional inundation. The natural resource impacts to the mature trees and vegetation along the bluff is ongoing. Impacts to the salt marsh and beach adjacent to the bluff are another area of concern. The NPS requests that these impacts be considered in any proposals for beneficial use of dredged materials to rehabilitate the training wall and restore and prevent further shoreline loss to erosion. Any dredged materials placed along the park shoreline should be free of contaminants and be somewhat compatible with existing shoreline sediments.

RESPONSE: Beneficial use of dredged material alternatives will continue to be considered throughout the PED phase.

- **Page 192, Section 7.2.13, Noise**

Please revise to include an assessment of impacts on public education and public enjoyment of resources and activities at Fort Caroline National Memorial and the Theodore Roosevelt Area. (reference comment re. DEIS Page 37. Section 2.2.13 Noise)

RESPONSE: Section has been revised.

- **Page 195**

The text refers to Appendix L for the Biological Assessment. However, Appendix L is an analysis of Essential Fish Habitat. The location of the Biological Assessment is not apparent.

RESPONSE: This has been corrected.

- **Page 195, Section 7.2.16, Aesthetics**

An increase in the frequency and size of ships passing through the Preserve has the potential to impact the visitor experience and opportunity to experience the natural views from the Preserve. Please revise the FSEIS to include a more thorough discussion of impacts to the visitor experience from the change in the size and frequency of ships in this area.

RESPONSE: Additional discussion has been included.

- **Page 205, Section 7.3.2.6**

Several threatened and endangered (T&E) aquatic species occur within the boundaries of the Preserve that could be injured or killed by confined blasting. Under the NPS Organic Act and the Endangered Species Act, NPS is obligated to “proactively conserve listed species and prevent detrimental effects on these species. “ NPS Management Policy (4.4.2.3) states that the Service will “manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for the recovery of threatened and endangered species.” The Atlantic sturgeon is one example. While there is currently no spawning population in the St. Johns River, the report states that the river is a nursery ground for young sturgeons. In the future, the St. Johns River could be a source for Atlantic sturgeon recovery. The pressure waves and noise from blasting could also affect other fish and marine mammals. The NPS is interested in possible alternatives to blasting that may better protect the Threatened & Endangered species within the Preserve.

RESPONSE: In accordance with the Endangered Species Act, the blasting plan is being coordinated with NMFS and USFWS. An Incidental Harassment Authorization will also be obtained from these agencies for blasting operations. USACE has determined that blasting may be necessary to remove rock, and other alternatives may not be available.

- **Page 217, Section 7.3.6 , Reptiles and Amphibians**

The statement regarding the extensive areas of suitable habitat adjacent to potentially affected habitat for reptiles and amphibians needs to be clarified. Much of the project area adjacent to the river is developed in residential and commercial or industrial uses. Globally reptiles and amphibians are declining across their ranges due to habitat degradation and climate change. Invasive species are also a significant factor in the global decline as through competition or predation. Degradation of habitat from increases in salinities may not be overcome as suitable habitat adjacent to the river is also highly desirable for residential development and commercial development in close proximity to the port facilities. Natural areas such as those found in the Preserve become islands of habitat surrounded by urban development with few natural corridors of protected habitat for maintaining a diverse population and genetic viability for these species. Alterations which reduce habitat diversity and species abundance in the coastal areas could have significant impacts on reptiles and amphibians which utilize these areas for foraging. See the following references:

- Collins, James P and Andrew Storfer. 2003. Global amphibian declines: sorting the hypotheses. *Diversity and Distributions*, 2003, 9, 89-98
- http://www.collinslab.asu.edu/publications/11Collins_Global_amphibian.pdf
- McCallum, Malcolm L. 2007. Amphibian Decline or Extinction? Current Declines Dwarf Background Extinction Rate. *Journal of Herpetology*, Vol. 41, No3, pp. 483-491, 2007
- <http://www.herpconbio.org/McCallum/amphibian%20extinctions.pdf>

- Enge, K.M. 1997. Habitat occurrence of Florida's native amphibians and reptiles. Tech. Rep. No. 16. Florida Game and Freshwater Fish Comm., Tallahassee. 44 pp + vi
- http://fwcg.myfwc.com/docs/Herps_Habitat_Occurance_Enge.pdf

RESPONSE: Based on hydrodynamic and water quality modeling, the USACE has determined that the proposed deepening would cause minor environmental changes within the preserve which are likely to result in insignificant impacts to reptiles and amphibians (other than considerations for sea turtles). The USACE continues to work with interested stakeholders on the eradication of invasive exotics such as Tamarix. There are new regulations which will require the shipping industry to better control the invasive species introduction pathway through the ballasts of ships. The USACE has also determined that deepening would result in fewer deep draft vessel transits through the harbor as compared to the no-action alternative.

- **Page 217, Section 7.3.7, Macro invertebrates including Shellfish**

This analysis addresses impacts from changes within the main stem of the river. The Preserve houses the largest oyster reef communities in the Jacksonville area; the largest beds are located in the salt marsh area (NPS, 1996a). Oyster reefs, or mounds, are estuarine communities that serve as habitat for many organisms. Oyster and clam shells contribute hard substrate for attachment by macro faunal consumers. Oyster reef communities may help to counteract erosion by enhancing sedimentation. Stresses of concern that negatively affect the oyster reef community include sedimentation, increased salinity, eutrophication, toxicants, over-harvesting, and loss of wetlands (Durako et al., 1988). Please revise the FSEIS to include an analysis of effect on oyster reef communities in the tributaries of the Preserve. See the following references:

- Anderson, Sarah M, Christine Katin and William Wise, PhD., 2005. P.E. Assessment of Coastal Water Resources and Watershed Conditions at Timucuan Ecological and Historic Preserve (FLORIDA). Technical Report NPS/NRWRD/NRTR-2005/340. National Park Service. Water Resources Division. Fort Collins. Colorado
- http://www.nature.nps.gov/water/nrca/assets/docs/timu_coastal.pdf

RESPONSE: Additional discussion shall be added to this section.

- **Page 221, Section 7.3.8, Other Wildlife Resources (Fish)**

The ecological modeling report only addressed changes within the main stem of the river. We await completion of the tributary modeling and fish impact analysis to review those reports and reserve the right to submit comments on tributary modeling and fisheries impacts within the Preserve.

RESPONSE: Tributary and salt marsh modeling have been completed and are now available for review.

- **Page 222, Last paragraph following Figure 39**

Please forward the referenced report, Brodie et.al (2013), for our review and comment as the impacts on fish species in the Preserve is a management concern for the NPS as previously identified.

RESPONSE: This report is available for review on the project website.

- **Page 228, Wetlands**

The hydrodynamic modeling report only addressed changes within the mainstem of the river. We reserve the right to review and comment upon the completion of the tributary modeling and impact analysis on wetland impacts within the Preserve.

RESPONSE: The tributary and marsh modeling reports are available for review.

- **Page 228**

The text indicates no direct impacts to wetlands. “Neither the No Action Alternative nor the project alternatives will directly affect the wetlands in the LSJR. Wetlands do not occur within the project dredging templates.” However, the project footprint runs through the Preserve and indirect impacts are possible and likely. These need to be addressed. Direct impacts include potential wave and erosion on the salt marsh on both sides of the LSJR channel through the Preserve. The NPS practices the policy of ‘No Net Loss’ of wetlands as directed by Executive Order 11990. Any loss or permanent change of these wetlands will need to be compensated. Indirect impacts include salinity changes to the waters of the Preserve, specifically in the upper reaches of Clapboard Creek. Accelerated wetland plant community changes are likely with a change in the salinity regime. If changes are too rapid, land loss is possible and compensation will be required. Also, a significant change in the coastal marsh plant community can result in a significant change to the soil matrix in terms of sulfide concentrations, pore water salinities, changes to organic matter concentrations and the structural integrity of these soils. As page 31 of this DSEIS identifies, the Preserve wetlands represent the “largest marsh-estuary system on the east coast of Florida,” and are notable, as a productive fishery and habitat for state and federally listed rare and endangered species. The FSEIS must address these concerns given the importance of this system.

RESPONSE: Tributary modeling to evaluate potential salinity and water level changes that could affect wetlands has been completed. The results, included in the latest project documentation, indicated very little change in salinity or water levels. Nevertheless sufficient mitigation for impacts to wetlands is proposed (see Appendices E and F on mitigation and monitoring).

- **Page 229**

First paragraph states “By altering salinity distribution in the LSJR, the project alternatives will indirectly affect wetland communities, Taylor (3013a). Taylor references Hackney’s 2013 monitoring data following the deepening of the Cape Fear River navigation channel and the indication of an increase in salinity which is associated with increase of tidal flux and rising sea level resulting in transition of wetland communities from a tidal swamp to tidal marsh.” According to Taylor results of the LSJR

salinity models and field observations of tidal wetland vegetation in the LSJR, the tidal swamp to tidal marsh transition in the LSJR appears to follow a pattern similar to that which was documented in Cape Fear River (Hackney, C. T., 2013, personal communication). The NPS recommends evaluating in the FSEIS salinity impacts on wetlands in the tributaries due to the possibility of permanent changes in the functionality (swamp vs marsh habitat) and suitability for fishery, nurseries, and biotic community structure. In addition, an increase in salinity could cause a loss of infrastructure which serves as a buffer against tides and floods.

RESPONSE: Tributary modeling to evaluate potential salinity changes that could affect wetlands has been completed. The results, included in the latest project documentation, indicated very little change in salinity.

- **Page 230**

The second paragraph indicates that increased salinities will increase sulfate content of the soils, increase decomposition of the organic material in the soils and increase shallow soil subsidence. This is only addressed for the upper reaches and not for wetlands within the Preserve. We anticipate similar impacts to the wetlands within the Preserve.

RESPONSE: Salinity concentrations in much of the tributary marsh systems are already high enough to affect soil sulfate concentrations. The very slight salinity changes predicted by the tributary models suggest that only minor effects on soil sulfate would occur in the upper reaches of the marshes.

- **Page 235**

Paragraph 3, indicates that there are no differences between effects at 44ft, 46ft, and 50ft depths. What are the errors associated with these data?

RESPONSE: The ecological models are affected by the errors associated with the salinity modeling. We did not make error estimates for the ecological models. However, in recognition of possible error in model predictions, the USACE will monitor impacts of the proposed deepening and widening. In addition the mitigation plan includes monitoring and corrective action for the mitigation as required by the Water Resources Development Act of 2007 (see part 6.1.1 and Appendices E and F).

- **Page 238**

The text indicates model runs were for the upper portion tributaries of the LSJR. Additional tributary work/studies have been indicated. When can we expect to see the study which addresses the tributaries within the Preserve?

RESPONSE: The tributary modeling report is available for review.

- **Page 238**

The "Purchase of Mitigation Bank Credits" is in opposition to NPS Wetlands policy (PM #77-1 Wetlands Protection). NPS will not agree to the purchase of mitigation bank

credits to compensate for wetland losses at the Preserve. However, the NPS fully supports using NPS managed lands as a recipient of wetland mitigation/compensation projects. See NPS Policy Manual PM 77-1 Wetlands Protection Section 5.8 Wetland Mitigation Banks pages 27-28.

RESPONSE: The USACE has determined that no wetlands would be lost within the preserve. However, the USACE continues to investigate the purchase of conservation lands in close proximity to the Preserve to offset minor adverse impacts to fisheries caused by the proposed deepening.

- **Page 251, Section 7.3.12, Invasive and Exotic Species**

States: “If the deepening project is not completed, then existing aquatic and terrestrial invasive species may expand in distribution and new invasive species may be introduced into the area.” It is unclear how a no-action approach (i.e., not completing the project) will cause the expansion of invasive species ranges or new species to be introduced. Deepening the channel and harbor, promoting increased shipping volume, would increase the probability of species introductions into the lower St. Johns River system. Despite new regulations for offshore ballast water exchange, the likelihood of accidental or intentional ballast water exchanges within the river, and the increased volume of ballast water (due to larger ships) would have the effect of increase propagule size of exotic species releases. Studies have shown that increasing propagule size (i.e., the number of individuals released per event) is positively correlated with invasion success. The NPS is concerned with the likelihood of the project to increase the risk of non-native species being introduced and established within the lower river system, particularly the tributaries within the Preserve. These concerns should be addressed in the FSEIS.

RESPONSE: The USACE has determined that the no-action plan would result in a greater increase in deep draft vessel transits through Jacksonville Harbor as compared to the Tentatively Selected Plan (TSP). The TSP should result in larger, but fewer, deep draft vessels transiting through the harbor. This will be clarified in this section.

- **Page 284, Section 7.23.9**

States: “No designated Wild and Scenic river reaches would be affected by project related activities. This act is not applicable.” Although the NPS does not dispute the conclusion that potential effects to a federally-designated Wild and Scenic River are unlikely, the document should point out that a Wild and Scenic River does exist within the watershed. The Wekiva Wild and Scenic River, administered by the NPS, exists in the upper reaches of the St. Johns River Watershed. Section 7(a) of the Wild and Scenic Rivers Act includes a provision that federal water resource projects “below or above a wild, scenic, or recreational river area or on a tributary thereto” shall “not invade or unreasonably diminish” the resource values for which the river was designated.

RESPONSE: The Wekiva River would not be affected by the proposed work. This will be clarified in this section.

- **Page 286, Section 7.23.21**

Please include NPS policy document Procedural Manual #77-1 Wetlands Protection on this list.

RESPONSE: In regard to wetland protection, the USACE Civil Works Program complies with the US Clean Water Act and EO 11990.

- **Page 308, Feasibility Scoping Meeting – February 7, 2008**

We await the additional evaluations in response to our comments at the February 2008 feasibility scoping meeting, notably impacts of salinity changes on the flora and fauna of the lower basin, salinity regime alterations as a cumulative effect of deepening and sea level rise, impacts to shoreline loss on the mainstem of the river in reaches 5 and 6, impacts on the aquifer, sediment transport in the salt marshes and emergent vegetation along the river, impacts to Chicopit Bay from the cumulative changes with mile point project and the deepening.

RESPONSE: The USACE has provided detailed evaluations of potential salinity changes and ecological changes associated with those potential salinity changes, notable in Appendix D of the SEIS.

- **Appendix D, Section 5 (Fish), Ecological Models**

The intent for this study was to apply the methods developed by St. Johns River Water Management District and described in Miller et al. (2012) to assess potential changes in the fish community resulting from water withdrawals in the middle and upper St. Johns River. The focus of this analysis is the potential effects of salinity change in the mainstem as predicted by the various dredging alternatives. “The available analyses for the fish environment are consistent with similar analyses for benthic macroinvertebrates (Chapter 6) and submerged aquatic vegetation (Chapter 3). However, the analyses are insufficient to provide a clear understanding of potential effects of the deepening alternative on fish populations.” USACE recommends: “Additional analysis of the Fisheries Independent Monitoring dataset (MacDonald et al. 2009) to examine relationships between salinity and fish species and pseudospecies defined for the analysis of the lower river fish community (MacDonald et al. 2009; Miller et al. 2012) would provide direct relationships (if they exist).” The recommendations make sense. Understanding the effects of salinity changes on the distribution and abundance of the fish communities in the mainstem is valuable. There is as much as a 12% shift in the salinity distribution as identified in the DSEIS, and the fish community will likely respond accordingly. It would be of value to identify some key species that may be particularly sensitive to salinity changes. There is some information about what fish utilize the mainstem and there is literature on salinity tolerance for some of these species.

RESPONSE: The revised ecological modeling report evaluates changes in pseudospecies salinity habitat areas (acres) and locations within the river resulting from different channel alternatives. What we found were very small changes (typically less than 5%

area change) with both positive and negative habitat area (acre) changes depending on the pseudospecies tested and the alternative tested. In total, the results suggest that there will be measurable but not important effects on the habitat space of the fish species in the St. Johns river. Note that MacDonald et al 2009, and Brodie et al (2013) discuss the question of estuarine fish species salinity tolerances and provide literature citations.

The species analyzed in the ecological modeling report are important species within the nekton community and commercially and recreationally important species as well. That information is contained in MacDonald et al (2009) and Brodie et al (2013). These reports provided detailed information on the various species. Brodie et al 2013 provided the data used in the analysis of fish salinity habitat changes.

The experts on the fish community of the lower St. Johns River, the FWC, made available to the USACE a dataset focused on the area from about Julington Creek to the Atlantic Ocean. Upstream of that location the project alternatives have very little effect on salinity. The FWC selected that fish community dataset for that area of the river with most of the salinity dynamics. Within the dataset they provided, there were a few freshwater species (largemouth bass and bluegill) but both those species data included no range in the metric we used to assess salinity habitat influences, the 25% to 75% of the salinity habitat range. These sensitive species would move upstream if salinity increased, very slightly decreasing their habitat range, which extends through the entire river upstream of the LSJR.

- Figure 5.2 includes the predicted salinities for the alternatives and the 50 estimated SLR. It would have been of value to include these same categories in Figure 5.3 which depicts the baseline and alternatives with and without the 50 yr SLR estimate. This would provide a direct comparison of effects without the confounding effects of SLR. It would also be of value to include error bars on all histograms to obtain a better understanding of the variance in results. Additionally, this would allow for the opportunity to understand the potential range of effects to better develop potential mitigation actions.

RESPONSE: Figure 5.2 plots the average of the annual maximum area (acres) of each salinity zone that occurred during the six simulated years. The figure shows the average salinity zone acreage for the baseline and each dredging depth alternative for 2018 and 2068 simulations.

Both Figure 5.2 and 5.3 show the same salinity ranges and the same project and simulation periods. Figure 5.3 simply shows the percentage difference of the salinity zone acreages between 2018 and 2068 simulations for each project alternative.

The potential “range of effects” for the alternatives can be seen in Figure 5.1, which displays the inter-annual variability of the 2018 simulations. Noting that the baseline and alternatives were only slightly different in area (e.g. see Figure 5.4, and Figure 5.6)

the interested reader can use the areas shown in Figure 5.1 as a clear indicator of the variability of each of the alternatives in each of the salinity zones.

It is unclear what statistic the commenting agency refers to with “error bars” but for purposes of this response, we will assume the term “error bars” means “95% confidence interval.” We selected to show figures without confounding ‘error bars’ to provide the general reader with greater ability to understand the general trends in and sense of the data.

While the potential for error in model prediction is recognized, using the same underlying assumptions and data allow a fairly reliable estimate of the difference between the with and without project deepening and widening. Simply placing error bars on the data would not help determine the difference between with project and without project (baseline) conditions as many sources of error would tend to drive the estimate of the with and without condition in the same direction. For example, if the with project condition is overestimated, the without project condition would also be overestimated.

- **Appendix D, Section 5 (Benthic Macro invertebrates), Ecological Models**

It would be of value to include error bars on histograms as described previously. As in the description of potential effects on other taxa (e.g. fish), it would be of value to include all categories in the presentation of the Salinity Percent Area Zone Changes (Figure 6.9) to better see the distinction between the effects of the project and the effects of SLR.

RESPONSE: Figure 6.9 shows median percent differences between salinity zones for the 2018 and 2068 conditions. The median differences are small. The areas of the lowest two salinity zones, <0.5 ppt and 0.5 – 4.99 ppt vary greatly including zero in 2001 for the <0.5 ppt area. Other salinity zones vary much less, less than a factor of 10. We had only six datapoints for each of the salinity zones for each simulation condition (2018 and 2068) and had no reason to assume that the errors of such data for all years would follow a normal distribution. Using medians allowed us to avoid that assumption. The lack of error bars also helps the statistically unsophisticated reader see the general trends in the data.

Mean values and error bars on the histograms would at worst mislead the reader, and at best leave them with less information concerning the average annual salinity changes over the six years of simulation. We have no reason to believe that the data are normally distributed, and some reason to believe that the data are not normally distributed. We have a low number of datapoints (six, one from each of the six years of simulation) and the values for the six years vary greatly. Were the data to be provided as mean values and error bars, the reader would see seven histograms (one for each salinity zone) and for a number of the histograms, very wide error bars, and for several other zones very small error bars. The presentation of all the areas of the seven salinity

zones for the six years allows the reader to see the variability in the data without having to guess at the sizes of the zones in different years.

- **Appendices E and F, Water Quality**

We recognize that the DSEIS and associated appendices focus on the mainstem of the St. Johns River. However, we are concerned about the potential water quality impacts to NPS resources both along the mainstem and into the associated tidal creeks. Reviews of water quality within NPS boundary and surrounding waters indicate the presence of several contaminants. These include not only high levels of nutrients from a variety of sources, but toxins such as nickel, copper, lead, etc. We are concerned that dredging will increase exposure of these toxins to plants and wildlife. NPS water quality data summaries are found in the following documents:

- Parman, J. N., J. Petzelka, and M. Williams. 2012. Regional water quality synthesis for southeast coastal parks. Natural Resource Report NPS/NRSS/WRD/NRR—2012/518. National Park Service, Fort Collins, Colorado.
- Anderson, S. M., Katin, C, and W.R. Wise. 2005. Assessment of Coastal Water Resources and Watershed Conditions at Timucuan Ecological and Historic Preserve (FLORIDA) Technical Report NPS/NRWRD/NRTR-2005/340

- Examples of information demonstrating available information include:

- From Anderson 2005 p 90

The sediments in the Saint Johns River are generally classified as fine-textured silts and clays, high in moisture and poorly sorted (Keller and Schell, 1993). To account for differences in the tendency of sediments to accumulate organic matter, sediment data are normalized to TOC and/or grain size (Keller and Schell, 1993; Seal et al., 1994). Tributary sediments have high organic content, making them accumulators for organic contaminants such as PAHs, phthalates, PCBs, and chlorinated pesticides (DDT, benzene hexachloride, and chlordane) (Keller and Schell, 1993). Sediments high in TOC can reduce the bioavailability of contaminants in the water column due to adsorption; however, this can negatively affect benthic organisms (NPS, 1996).

- From Anderson 2005 p 91

The Lower Saint Johns River (LSJR) sediments have been impacted by industrial and residential activities in the area. Several comprehensive studies have documented heavy metal and organic contamination of these sediments, particularly in the vicinity of Jacksonville (Keller and Schell, 1993; Seal et al., 1994). Alexander et al. (1993) generated historical profiles of metal accumulation for the LSJR and

demonstrated that sediments are enriched in cadmium, lead, and zinc near Jacksonville.

- Literature Cited:

- Alexander, C.R., R.G. Smith, F.D. Calder, S.J. Schropp, and H.L. Windom. 1993. The historical record of metal enrichment in two Florida estuaries. *Estuaries* 16(3B): 627-637.
- Keller, A.E., and J.D. Schell. 1993. Lower St. Johns Basin Reconnaissance: Sediment Characteristics and Quality. Volume 5. Technical Publication SJ 93-6. Palatka, Florida: St. Johns River Water Management District.
- National Park Service (NPS). 1996. Water Resources Management Plan, Timucuan Ecological and Historic Preserve, Florida. Jacksonville, Florida: Timucuan Ecological and Historic Preserve.
- Seal, T.L., F.D. Calder, G.M. Sloane, S.J. Schropp, and H.L. Windom. 1994. Florida Coastal Sediment Contaminants Atlas: A Summary of Coastal Sediment Quality Surveys. Tallahassee, Florida: Florida Department of Environmental Protection.

Please include these important references and analysis in the FSEIS. Water quality monitoring included in Appendix F "Draft Monitoring Plan" includes salinity monitoring only. Water quality monitoring included in Appendix E "Ecological Effects Assessment and Compensatory Mitigation Report" does not include a focus on contaminants monitoring. The NPS recommends that water quality monitoring should be increased to include the assessment of the effects of dredging on release of contaminants into the water column and subsequent effects on plants and wildlife.

RESPONSE: Potential sources of Hazardous, Toxic, and Radioactive Waste (HTRW) within the project area are evaluated in sections 2.2.14 (pg. 34) and 7.2.14 (pg. 192) of the SEIS. USACE has performed two Hazardous, Toxic, and Radioactive Waste (HTRW) Assessments within the project area: the Jacksonville Harbor Mile Point Project (2004) and Jacksonville Harbor Navigation Study (2009). Neither assessment identified contaminants of concern within the Harbor Deepening project area.

While there are some notable exceptions, testing of sediment over the years has shown that the material is suitable for placement in the ODMDS. Material destined for the ODMDS is subject to testing if it has a potential to contain an unacceptable level of contaminants. New material from deepening of the channel is typically suitable for disposal in the ODMDS as is maintenance material except from locations (such as some berths) with a history of a discharge of certain contaminant. Some contaminants may be released during the dredging operation but, on the other hand, dredging also results in the removal of contaminants from the system.

- **Appendix F Monitoring Plan**

The monitoring design seems to be based solely on bracketing expected salinity impacts/gradients. By doing so this ignores the possibility of different impacts across space which may not be justified, and given that the lands in the project area have different thresholds for impairment, it doesn't seem appropriate. We recommend a monitoring design that encompasses the whole potential-impact area and implement a design that has inference to that area. The wetlands component is particularly troubling in this respect given the amount of wetlands in the Preserve and the complete lack of any sites there. We recommend that the sampling design for the wetlands section include tributary zones within the Preserve, and the use of sites outside of the impact zone for reference locations.

RESPONSE: The monitoring plan design was based primarily on the results of hydrodynamic and ecological modeling. Tributary modeling to evaluate potential salinity and water level changes that could affect wetlands within the Preserve has been completed. The results, included in the latest project documentation, indicated very little change in salinity or water levels.

- For Vegetation monitoring we recommend to either use the National Oceanic and Atmospheric Administration/National Estuarine Research Reserve protocols for veg (transect based) or the photoplot-based methods included in the Southeast Coast Network salt marsh protocol (currently undergoing review and is anticipated approval by the end of September). The NPS has established rod surface elevation table stations in the Preserve (the largest number in the network), and we are surprised that the vegetation monitoring does not include these stations as there are many examples of them being used for impact assessment in a long-term monitoring context. We recommend revising the monitoring design to incorporate these stations that are operated and maintained by the NPS for the purpose of long-term monitoring to assess the impacts of the proposed action. We also recommend adding at least one more site into the nekton sampling to measure impacts within the Preserve.

RESPONSE: Based on the modeling and analyses, the USACE does not support the monitoring of wetland vegetation in the Preserve. Nekton sampling sites will continue to be coordinated with the Florida Fish and Wildlife Conservation Commission and will be based on the results of modeling and effects assessment.

Additional National Park Service comments received on Nov. 8, 2013

- The NPS recommends that the Final SEIS include an ecological analysis for Timucuan tributaries or an explanation of the process and -data used to determine why the USACE decided not to perform this analysis. This information is critical for the NPS to adequately determine the range of potential impacts to Preserve resources.

RESPONSE: Modeled salinity values were used to infer ecological response in the Timucuan area. Salinity was modeled by the EFDC and various other models in the main

stem and tributaries, one of which included the Timucuan marsh. Salinity values in the main stem were used as input to the EFDC model to generate ecological results. The results of the main stem ecological modeling and the magnitude of change in modeled Timucuan marsh salinity (lesser magnitude than the main stem) were used to infer the ecological response in the Timucuan area described in the report. Specific information can be found in Appendix D, Section 2.0, Ecological Evaluation Framework.

- We expect the plan to ensure that proposed monitoring locations truly reflect the range of variability and potential impacts to Preserve resources. The NPS would be willing to fully participate in future discussions related to the development and refinement of this important monitoring and adaptive management plan. Therefore, the NPS requests to be a participant in the design of this plan, including the process for establishing thresholds and triggers for future adaptive management.

RESPONSE: The NPS will be contacted at the appropriate time to be included in the process for establishing thresholds and triggers for this project.

- The salinity and ecological impacts studies of the main stem of the St. Johns River suggested that ecological effects analysis would be forthcoming for the Timucuan tributaries. This is reiterated in some studies with specific language that suggests this analysis is still to be done and provided. Based on our review of the various studies for impacts to tributaries, it does not appear that this analysis is included as was requested in previous NPS comments on the project. The Final SEIS should include an ecological analysis for Timucuan tributaries or an explanation of the process and data used to determine why the USACE decided not to perform the analysis. This information is critical for the NPS to adequately determine the range of potential impacts to Preserve resources.

RESPONSE: Appendix D, section 4.0 describes the modeling approach for evaluating wetlands in the Timucuan marsh. Page 51 indicates the project will have negligible effects on water levels, hence the project focused on salinity. Modeled salinity values were used to infer ecological response in the Timucuan area. Salinity was modeled by the EFDC and various other models in the main stem and tributaries, one of which included the Timucuan marsh. Salinity values in the main stem were used as input to the EFDC model to generate ecological results. The results of the main stem ecological modeling and the magnitude of change in modeled Timucuan marsh salinity (lesser magnitude than the main stem) were used to infer the ecological response in the Timucuan area described in the report. Specific information can be found in Appendix D, Section 2.0, Ecological Evaluation Framework.

The USACE has extensively assessed possible salinity changes and related floral and faunal changes. The USACE has developed detailed analyses that use the available information in a variety of evaluations to model salinity changes and model the effects of those changes. The river currently exhibits wide variation in salinities, and the salinity

models were calibrated using observed data. The salinity models were then used to assess changes in the wetland, submerged vegetation, benthic macroinvertebrate, and fish communities. The findings are available in the appendices to the SEIS.

The salinity changes in the marsh of the Timucuan Preserve are largely dependent on the changes in the main channel. The marsh flushes twice daily, exchanging marsh water with water from the St. Johns River. Therefore, the river salinity fluctuations and the marsh salinity fluctuations are very closely tied. Small fluctuations in the river mean small salinity fluctuations in the marsh.

The results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition at the mouths of tributaries discharging from the Timucuan marshes. Because the predicted salinity changes at the tributary mouths are small, little salinity change would propagate into the tributaries. Additional modeling of the Timucuan marsh system confirmed the marshes will experience little change in salinity as a result of channel deepening.

Tributary Salinity Modeling for Jacksonville Harbor GRR-2 Deepening Project and Appendix A. Attachment M Hydrodynamic Modeling for Salt Marsh and Tributaries Salinity and Water-level.

- Page 8, Section 2.4 In the first paragraph, please identify the Timucuan Ecological and Historic Preserve (TIMU) as a unit of the NPS.

RESPONSE: This will be revised as suggested.

- Page 8. Section 2.4 Second paragraph states: "Clapboard Creek connects on the northern side of the St. Johns River approximately eight river miles from the Atlantic Ocean and is the major waterway that conveys saltwater from the St. Johns River into the western portion of the Timucuan marsh. Upstream freshwater inflows and tides strongly affect flows at Clapboard Creek, Cedar Point Creek and nearby smaller creeks. The Florida Department of Environmental Protection (FDEP) STORET data shows salinity in the Clapboard Creek marsh ranges approximately 1-30 ppt." TIMU marsh provides a host of services including serving as a nursery habitat for juvenile fishes and critical habitat for endangered species. The NPS recommends that the Final SEIS evaluate the responses of soil microbial communities to physical and chemical disturbances or at a minimum include elements in the monitoring and adaptive management plan to address this critical ecosystem function. The proposed dredging events could result in a new microbial community that is less stable and functions in a different way as well as possible changes in the quality of soil. This would help us understand how soil microbial communities along with enzyme activities respond to long-term dredging manipulations. In addition, NPS recommends evaluating a variety of freshwater wetland

soils. Historical studies have shown that not all wetlands will respond the same to saltwater intrusion and fluctuating tides.

RESPONSE: The USACE interprets this comment as a concern about changes to wetland soil function as a result of changes in salinity. As previously stated, the results of EFDC hydrodynamic model simulations of the 47-ft TSP indicate that the deepening will cause very small changes in salinity relative to the baseline (without project) condition at the mouths of tributaries discharging from the Timucuan marshes. Because the predicted salinity changes at the tributary mouths are small, little salinity change would propagate into the tributaries. Additional modeling of the Timucuan marsh system confirmed the marshes will experience little change in salinity as a result of channel deepening. This analysis suggests that there would be no significant change in the microbial community. Based on this, the USACE does not recommend monitoring of soil microbial communities.

- Page 20. Section 3.5 The second paragraph states: "Taylor Engineering did not find available regularly observed water level data in the marsh areas and the LSJR tributaries were recorded data consist (at best) of water depths at select non-permanent locations at intermittent times. National Parks Service (NPS) tide station CC _ 04 in Clapboard Creek provides hourly water depth data for 2004-2009." Due to the lack of current water level data in the marsh areas, it is very difficult to correlate salinity variability and establish current baseline data prior to dredging of the St. Johns River. It is critical to understand current conditions prior to dredging events in order to evaluate seasonal changes (trend analysis). The NPS continues to have concerns about the lack of data in the tributaries to substantiate impact determinations for this project. The NPS recommends that the monitoring plan be developed to include adequate sampling locations to provide water level data in these areas to be able to determine salinity and other impacts in the future.

RESPONSE: The USACE used best available data including continuous depth and salinity at the Clapboard Creek gage which provides adequate information to produce numerically modeled hydrodynamic and salinity transport processes from which to base relative project impacts.

- Pages 21-23. Section 3.6 There are no salinity measurements and therefore no model validation for any portions of Sister's Creek within TIMU. The NPS recommends that the Final SEIS include any existing records for this portion of the study area.

RESPONSE: The only continuous record of salinity in the vicinity of Sister's Creek is the Kingsley Plantation gage. There are monthly salinity monitoring stations at Shell and Sister's Island.

- Page 47. Figure 4.12 Modeled and measured salinities sometimes disagree by as much as 5ppt in this figure, though they are sometimes the same. A difference of 5ppt could be biologically significant for both plants and animals. This occurs for several dates. Given this degree of variability and uncertainty, the NPS recommends that the Final SEIS discuss model variability and the extent to which this uncertainty is factored into some of the conclusions related to predicted impacts on biological resources.

RESPONSE: The large difference in measured and modeled salinity is likely due to localized flow conditions occurring upstream or on the marsh area. As there are no available direct measurements of upstream flow and lateral inflows into the Timucuan marsh, hydrologic models provided estimates of these unknown flows. The hydrologic models used rainfall data from various rainfall stations to estimate surface flow. The flow estimates can sometimes vary from actual flows as the rainfall data applied in the hydrologic model may not truly represent the actual rainfall in the small catchment area of the Timucuan marsh.

- Page 71. Table 5.1 Both the baseline and TSP models do not appear to take sea level rise (SLR) into account. It is anticipated that SLR will likely increase or exacerbate impacts relative to the dredging project. The NPS recommends that the Final SEIS address SLR and ensure that model runs appropriately consider this variable as part of model outputs and conclusions.

RESPONSE: No salinity simulations with Sea Level Change were conducted in the Timucuan marsh and tributaries. However the EFDC main stem model results give some indication of the Sea Level Change effect on salinity in the Timucuan marsh. The EFDC main stem model does anticipate Sea Level Change and water withdrawal. EFDC model results with several sea level rise scenarios — historic rate (0.39 ft by 2068), medium rate (0.87 ft by 2068), and high rate (2.39 ft by 2068) generally shows that the TSP impact on salinity and water level is greatly overshadowed by the impact of any of the sea level rise scenarios. The model results show that with or without the TSP, the sea level rise will elevate water levels in the main river by almost the same amount as the increase in the sea level. Similarly, the increase in salinity from sea level rise overshadows the very small increase in salinity attributed solely to the TSP. Contrary to the anticipation “that SLR will likely increase or exacerbate impacts relative to the dredging project”, EFDC model results show the TSP impacts on water level and salinity diminishes relative to the impacts of increasing sea level rise. In general the effects of sea level rise and water withdrawal overwhelm the impacts of the project deepening and widening. In addition, Appendix A, Attachment J Storm Surge and Sea Level Change, includes an evaluation of project and SLR induces changes to the MHW and MLW in the Timucuan marsh area.

- Pages 72-80 Section 5.3.2. The salinity discussion and model outputs in this section are difficult to relate to the ecological components of the natural system. The presentation of Percent of Time Model Results Exceed Select Moving Average Salinity for 2018

Baseline Condition in North Timucuan" does not easily inform the reader of the metrics of duration or frequencies of exceedances. Those metrics would allow us to determine potential acute or chronic impacts from salinities outside of the normal range for any particular community, whether plant or animal, in North Timucuan marshes. For example, if salinities were outside of normal ranges for 10 days out of the year, the impacts would be very different if those 10 days were 10 separate events spaced out or one single event. The more sensitive an organism is, the more profound the impacts would be for an acute impact. The NPS recommends that the Final SEIS present this data differently, maybe through additional tables and discussion, to allow a better determination of saltwater and/or freshwater impacts to this marsh ecosystem.

RESPONSE: Although not meant to present the whole picture for every species in the area, duration curves present very insightful summary of project-induced changes. Figure 5.3 does give an indication of the salinity changes for the 30 day moving average. It is difficult to provide within the limited space available in this report the various ways to present differences in water level and salinity for baseline (without project) and TSP scenarios. There are potentially hundred of ways the difference between baseline and TSP scenarios can be presented — the manner of presentation is usually dictated by the objective of the analysis and the species under consideration. The model output is available with hourly output frequency. Future users can post-process these model results for different types of analysis for specific species.

- Page 76 The last sentence in the paragraph states: "This slight decrease in salinity occurs as the 2018 TSP likely provides a more efficient flushing during ebb flow." This sentence refers to the model results that show decrease in durations for salinity greater than 20 ppt for several points (locations) including those in smaller more interior North Timucuan tributaries. The NPS has concerns that a more efficient flushing during ebb flow in the smaller tributaries in North Timucuan may also indicate an increase in flow velocity into these tributaries, which could be expected to result in increased erosion along the banks of the tributary channels, and lead to loss of salt marsh area and increase in open water areas. The NPS recommends that the Final SEIS discuss the potential for this increase in velocity and potential tributary erosion.

RESPONSE: More efficient ebb flow is due to a small increase in water level and tide range. These small increases results in small velocity increase and are not expected to cause significant erosion along marsh banks. In addition, Appendix A, Attachment J Storm Surge and Sea Level Change, includes an evaluation of project and SLR induces changes to the marsh platform in the Timucuan marsh area. The model does not show significant velocities that will result in increased erosion along marsh banks. TSP impact shows only very small increases in water levels and tidal range which will translate to very small changes in flow velocity. These flow velocity changes are not expected to increase erosion along the marsh banks. Text has been added to Section 5.3.2 indicating this.

- Pages 76-78. Table 5.6 The NPS is concerned about the predicted changes in salinity for points 7 and 8 as indicated by the data provided in Table 5.6 and Figure 5.3. The data indicate reductions in salinity at the highest ends of the salinity regime for these creeks. Table 5.6 indicates that there may be a 4 to 6.0% decrease in the duration for salinity greater than 30 ppt at point 7 with the 2018 TSP, and a 4.5 to 7.1% decrease in the duration for salinity greater than 30 ppt at point 8. Table 5.6 indicates that this decrease in salinity may be somewhat more pronounced along smaller tributaries that are located a greater distance from a larger tributary or the main stem of the LSJR such as point 7 and especially point 8. The NPS is concerned that potential effects to the existing salt marsh community structure, including nekton communities, in these areas from the decrease in salinity may be possible, but the extent of these effects are not known at the present time. No potential effects are discussed in Appendix A, Attachment M. See previous comments related to the completion of additional study or description related to this impact topic.

RESPONSE: The DSEIS main report and Appendix D, Ecological Modeling for Jacksonville Harbor Deepening GRR-II indicates that tributary salinity models of the Timucuan marsh, Cedar/Ortega rivers and Julington/Durbin creeks showed that the Recommended Plan would cause only very small changes in salinity relative to the 2018 Baseline. The proposed project would likely have negligible effect on fish populations and wetlands in these marsh and tributary systems.

Please see Brodie et al (2013) "Salinity Effects due to Channel deepening on Estuarine-Dependent Nekton in the Lower St. Johns River Estuary" Appendix 3 Table 1. The discussion below refers to details within that table, which user might find useful to review in addition to the response below.

The referred table reported (among other statistics) 95% confidence intervals of density weighted salinity distributions of a large number of nekton pseudospecies in the lower St Johns River mainstem and, tributary sampling locations. Few of the pseudospecies reported had density weighted 95% confidence interval for salinity that exceeded 30 ppt.

Data for species with 95% CI of 30 ppt or above (considering mainstem and tributary sampling locations):

Gambusia holbrooki, 21.3-M Seine / 18-21 SL / March / location mainstem / 95% CI -6.3 ppt– 31.3 ppt, maximum salinity 31 ppt. Note that for tidal tributary data (of most interest for this response) the salinity 95% CI for this pseudospecies was -0.5 – 4.8 ppt with a maximum of 12 ppt.

Orthopristis chrysoptera 21.3m Seine / 15-24 SL / May / location Tidal Tribs / 95% CI = 16.9 – 31.0 ppt / max Salinity = 34 ppt.

Cynoscion complex 6.1-m Otter Trawl/ 10- 19 SL / May / location: Tidal Trib. / 95% CI = 14.14 – 29.6 ppt,/ maximum salinity – 29 ppt.

Symphurus plagiusa 21.3-m Seine / 20-34 SL / Nov./ Tidal Trib 95% CI = 17.5 – 37.4 ppt / Maximum Salinity – 32 ppt. Note the skew in the 95% confidence interval, extending the upper salinity value beyond the maximum salinity of the collection sites for this pseudospecies.

The Brodie et al. (2013) table also contains a number of pseudospecies where at least one sample was taken in water with salinity > 30 ppt. However, the majority of the data for each pseudospecies with this statistic strongly suggest that in almost all cases the pseudospecies' presence in water > 30 ppt was atypical. Only a few of the pseudospecies collected where salinity exceeded 30 ppt showed 90th percentile salinity values of 30 ppt or above. See the statistics for pseudospecies of *Menidia menidia*, *Orthopristis chrysoptera*, *Bardiella chrysoura*, and *Leiostomous xanthurus* to find examples of pseudospecies having 90th percentile and maximum salinities above 30 ppt.

The results discussed above indicate that reduction in salinities of the type described might more likely benefit than harm the nekton analyzed by Brodie et al. 2013. That benefit would accrue from expansion of waters with less than 30 ppt, where the pseudospecies were more common, or the reduction in the amount of time at the measured stations where water remains above 30 ppt, conditions under which most pseudospecies were rare or absent.

Regarding the ability to generalize potential effects from the reported findings: It seems likely that most or almost all of the species making up of the community structure in the marshes were captured in the 10-year sampling effort reported in Brodie et al 2013. Thus, the results of that report provide sufficient information to conclude that the potential decreases in durations of salinities in excess of 30 ppt at some locations in the marsh will not cause harm to the nekton community.

Appendix D. Ecological Modeling {or Jacksonville Harbor Deepening GRR II

- Page 76 Table 5.6 includes the modeled predictions of the percentage of time that changes in salinity will occur at specific points based on a 1, 7, and 30 day moving average. It is not clear from the table how or when these changes occur. For example, if there is a 1% change in the duration of 20ppt at point 1, it is not clear whether this occurs over several days or months. Rather, it is simply projected as a total. The duration and intensity of a change in salinity (e.g. a "pulse" versus a small duration over a longer period of time) would be expected to have different effects on different taxa. Additionally, the percentages are provided without any information on potential range of results. The NPS recommends that the Final SEIS include a range of output, including any error bars or standard deviations.

RESPONSE: This comment references Appendix A, Attachment M, Hydrodynamic modeling (ADCIRC/MIKE21 FM) for Salt Marsh and Tributary Salinity and Water-level. Appendix A, Attachment M, Figure 5.3 provides some indication of the duration of salinity changes. Because continuous measured salinity data is sparse in the marsh and tributaries it is not possible to calculate valid error analysis. We elected to show figures without confounding 'error bars' to provide the general reader with greater ability to understand the general trends in and sense of the data. While the potential for error in model prediction is recognized, using the same underlying assumptions and data allow a fairly reliable estimate of the difference between the with and without project deepening and widening. Simply placing error bars on the data would not help determine the difference between with project and without project (baseline) conditions as many sources of error would tend to drive the estimate of the with and without condition in the same direction. For example, if the with project condition is overestimated, the without project condition would also be overestimated.

- Page 91, Section 5.5 The report states, "The discussions above deal with potential effects of salinity changes on fish distribution in the main stem of the LSJR. Fish in tributary systems could also respond to salinity changes if main stem salinity changes propagate into the tributary systems. Salinity distribution modeling in three LSJR tributary systems -Timucuan marsh, Cedar/Ortega Rivers, and Julington/Durban Creeks - for the 2018 Baseline and 2018 TSP conditions is on-going. Results of the tributary analysis will be included in this report when completed." Figure 5.2 (page 93) and Figure 5.10 (page 100) provide valuable information related to potential changes in acreages of habitat as defined by salinity and the percent habitat change for pseudospecies, respectively, in the main stem. The NPS recommends that the Final SEIS include similar figures for the tributaries in the Timucuan boundaries. The NPS also recommends that these figures include error bars. See previous comments related to the completion of additional study or description related to this impact topic.

RESPONSE: Modeled salinity values were used to infer ecological response in the Timucuan area. Salinity was modeled by the EFDC and various other models in the main stem and tributaries, one of which included the Timucuan marsh. Salinity values in the main stem were used as input to the WSIS model to generate ecological results. The results of the main stem (Mill Cove segment) ecological modeling and the magnitude of change in modeled Timucuan marsh salinity (lesser magnitude than the main stem) were used to infer the ecological response in the Timucuan area described in the report. No ecological model results are available to generate graphics similar to Figures 5.2 and 5.10 for the Timucuan area.

The potential "range of effects" for the alternatives can be seen in Figure 5.1, which displays the inter-annual variability of the 2018 simulations. Noting that the baseline and alternatives were only slightly different in area (e.g. see Figure 5.4, and Figure 5.6)

the interested reader can use the areas shown in Figure 5.1 as a clear indicator of the variability of each of the alternatives in each of the salinity zones.

While the potential for error in model prediction is recognized, using the same underlying assumptions and data allow a fairly reliable estimate of the difference between the with and without project deepening and widening. Simply placing error bars on the data would not help determine the difference between with project and without project (baseline) conditions as many sources of error would tend to drive the estimate of the with and without condition in the same direction. For example, if the with project condition is overestimated, the without project condition would also be overestimated.

- Page 134. Section 6.5. The report states, "The discussions above deal with potential effects of salinity changes on BMI communities in the main stem of the LSJR. Salinity distribution modeling in three LSJR tributary systems -Timucuan marsh, Cedar/Ortega Rivers, and Julington/Durban Creeks -for the 2018 Baseline and 2018 TSP conditions is on-going. Results of the tributary analysis will be included in this report when completed." See previous comments related to the completion of additional study or description related to this impact topic.

RESPONSE: Appendix A, Attachment M, Hydrodynamic modeling (ADCIRC/MIKE21 FM) for Salt Marsh and Tributary Salinity and Water-level and Appendix D, Ecological Modeling for Jacksonville Harbor Deepening GRR-II present results of salinity modeling and ecological effects in the Timucuan marsh, Cedar/Ortega Rivers, and Julington/Durban Creeks -for the 2018 Baseline and 2018 TSP conditions.

Modeled salinity values were used to infer ecological response in the Timucuan area. Salinity was modeled by the EFDC and various other models in the main stem and tributaries, one of which included the Timucuan marsh. Salinity values in the main stem were used as input to the WSIS model to generate ecological results. The results of the main stem ecological modeling and the magnitude of change in modeled Timucuan marsh salinity (lesser magnitude than the main stem) were used to infer the ecological response in the Timucuan area described in the report. Specific information can be found in Appendix D, Section 2.0, Ecological Evaluation Framework.

Salinity Effects due to Channel Deepening on Estuarine-Dependent Nekton in the Lower St. Johns River Estuary.

- General Comment. This document does not provide an analysis of salinity effects. It is merely a summary of salinity and fish distribution obtained by the Fisheries Independent Monitoring (FIM) program. The data appear sound, but to analyze the effects of modeled salinity changes on species distribution requires a concerted effort to take the modeled data and associate it with these data. This analysis will take a fair bit of time and coordination with the authors of this document and possibly the consultants

modeling salinity. The report states, "The objective of this data analysis was to document the abundance and distribution of nekton in the LSJR and its tidal tributaries between the mouth and river-kilometer 64 (approximately Julington Creek confluence). We analyzed existing FIM data to assess nekton species composition and to define nekton distribution and abundance along salinity gradients in LSJR. This information can then be integrated with hydrologic, ecological, and water quality modeling data from other sources to provide an assessment of the potential effects of channel dredging on nekton populations in the LSJR." The NPS agrees with this approach and recommends that the USACE seek to conduct the integrated analysis described above. The NPS would appreciate the opportunity to participate and work closely with researchers, particularly those from the state agencies. As described in this report and in previous comments, the NPS is concerned about potential changes in nekton community structure at the very highest and very lowest salinities especially in the tributaries.

RESPONSE: The FIM data was used to help evaluate salinity effects to nekton potentially caused by the project. Please refer to the fish model in Appendix D for a detailed discussion.

Appendix F. Draft Environmental Monitoring and Adaptive Management Plan.

- Page 6. Section 2.1 The section states, "The duration of the construction is estimated to be between 4 and 6 years. Monitoring would occur throughout this 4 to 6 year period, and for a minimum of 5 years and up to 10 years post construction to detect actual project effects. Based on its review of flow data, the USACE has determined that this period should contain sufficient variability in flow, or wet and dry years during the baseline and then post-project construction to detect any changes due to the project. The USACE and the agencies agree that this period of time is necessary to evaluate potential salinity effects caused by the proposed work." If there is insufficient variation during the proposed monitoring duration, is there a guarantee that monitoring will continue? The NPS recommends structuring the monitoring effort and duration to allow for the opportunity to continue monitoring based on the actual variance experienced to get a sense of the true range of impacts and environmental conditions.

RESPONSE: The proposed monitoring plan recommends a minimum of 9 years (4 years construction + 5 years post-construction) of data collection to a maximum of 16 years (6 years construction + 10 years post-construction) paid for by the project. The plan also expects to leverage data from existing monitoring stations funded by other entities. This leveraged data can potentially extend the period of record to greater than 20 years at certain locations. The USACE has reviewed historic precipitation and flow data and used this information to develop the recommended monitoring periods in the plan. The recommended minimum monitoring period (9 years) is believed to be sufficient to capture wet/dry seasonal fluctuations as well as multi-year El Niño/La Niña cycles as seen in the historic data. Monitoring will not be extended beyond the 10 years post-construction as recommended in the plan.

Pages 6 and 7. Section 2.2. Only one water quality monitoring station is designated for Clapboard Creek and none are designated for Sisters Creek. The NPS recommends expansion of the monitoring stations in these locations due to the complex nature of tidal creeks as well as the high value of these creeks to the overall estuarine ecosystem. In addition, the water quality monitoring includes only DO and salinity. It is anticipated that the dredging operation could increase sediment and potentially disrupt the presence of contaminants trapped in the bottom of the river. A baseline assessment of some key contaminants would be of value. The NPS recommends that sediment also be monitored at key sites throughout the process.

RESPONSE: The issues of existing sediment contaminant load and its potential impact on water quality as a function of dredging is an issue that will be addressed during the Water Quality Permit process. Baseline assessment information will be gathered as part of the Section 103 Dredge Material Evaluation. Both of these actions will occur during the detailed design phase of the project. No additional monitoring is recommended at this time.

- Page 7. Section 2.2. Paragraph 1 The section states, "These main stem and tributary sites were selected because they bracket the predicted salinity effects induced by the deepening project." No data is presented to demonstrate how these locations serve to "bracket" the range of predicted effects. The NPS has strong interests in ensuring that the proposed monitoring locations truly reflect this range of variability and potential impacts to Preserve resources. Therefore, the NPS recommends that this be addressed in the Final SEIS or updated monitoring plan.

RESPONSE: Text added to report referencing Appendix D, Figures 5.4 and 5.5 and clarifying how spatial extent was determined.

- Page 9, Section 2.3.2, Wetland Monitoring The report states, "Bi-annual sampling would be conducted, and would occur during the beginning portion of the growing season (April-May) and again towards the end of the growing season (September- October). Sampling twice a year is expected to yield more complete data on species composition." Changes in species composition can take several years; and, depending on plot size can be extremely difficult to detect and quantify statistically. It is not clear that the sampling regime outlined here is sufficient to guarantee that changes in wetland composition will be detected. Also, due to the slow nature of composition change, it may be of value to consider additional parameters such as growth rate that may provide more immediate information in the shorter-term. The NPS recommends that this be addressed in the Final SEIS or updated monitoring plan.

RESPONSE: As previously stated, the proposed monitoring plan recommends a minimum of 9 years (4 years construction + 5 years post-construction) of data collection to a maximum of 16 years (6 years construction + 10 years post-construction). The

USACE will consider additional wetland parameters.

- Page 10. Section 2.3.3 Fish and Macroinvertebrate (Nekton) Monitoring The report states, "An extended period of sampling post dredging will be important for assessing recovery from any direct impacts from the dredging and allow for the nekton assemblages to stabilize before assessing final effects that are directly related to the actual deepening." The NPS supports utilization of the long-term data collected under the FIM program. However, it would also be of value to confirm that analyses of these data validate that the protocols are capturing sufficient data to be able to detect potential change in species composition following the dredging. It is also unclear from the text what the duration of the "extended period of time" is. If the existing FIM data indicate some areas are more critical than others (e.g., nursery habitat), these areas should be targeted during the sampling. It also would be of value to know if the same sites are to be sampled each time or if the sampling varies within the site. The NPS recommends that this be addressed in the Final SEIS or updated monitoring plan.

RESPONSE: The USACE will continue to coordinate with FIM biologists regarding future sampling design.

- Page 11. Section 3. Modeling Task 2. The report states, "Establish a baseline evaluation period of 5 to 10 years which ends in the last complete year before construction. This includes the development of all required model input for the simulation period, model simulations, and evaluation of the 5 -10 year period." How will the duration of the baseline evaluation period be determined? The Final SEIS should discuss the methodological approach to establishing appropriate baseline, existing conditions.

RESPONSE: The baseline evaluation period will be determined by the availability of suitable data for model calibration and input. Suitable data is defined as data that is representative of the LSJR system and captures the variability inherent in this system. The final Corrective Action Plan targets, triggers, data, and analyses will be determined by the interagency Jacksonville Harbor Corrective Action Team, where the NPS is a welcome member, during the detailed design phase of the project. The Team will establish/determine thresholds, triggers, data sources, and data analyses for this project.

- Page 11. Section 3, Modeling Task 3 The report states, "Dependent on the salinity measures exceeding the adaptive management thresholds, setup the hydrodynamic model to include surveyed post construction channel depths and simulate the 5 - 10 year period to evaluate the contributions of various cumulative effects that cause changes in salinity in the LSJR estuary. Modeling the cumulative effects of sea level rise, other climate changes (e.g., changes in freshwater input due to changes in precipitation); water withdrawals and dredging is extremely complicated. What data sources will be utilized to complete this task? For example, are downscaled precipitation models available for the area or will they have to be created? This could greatly affect

the time it takes to create these models and evaluate effects. The Final SEIS should discuss in greater detail the approach to complete this task.

RESPONSE: Water level, salinity, rainfall, flow and wind will be used in the hydrodynamic modeling effort to evaluate contributions to increased salinity. This is a complex evaluation which can only be accomplished using a three dimensional hydrodynamic model with wetting and drying. A key input for this effort is tributary scale hydrology which will be derived from tributary scale rainfall and hydrology modeling.

It is envisioned that additional refinements will be made to the existing tool box of models to incorporate non-project effects into these models. This will allow the Corrective Action Team to better determine project vs. non-project effects on salinity and subsequently, ecology. Additional refinements will be determined and overseen by the interagency Jacksonville Harbor Corrective Action Team, where the NPS is a welcome member, during the detailed design phase of the project. This comment will be provided to the Team for consideration during monitoring plan development. Additional text added to Appendix F, Section 3, Modeling Task 3 to clarify this point.

- Page 16. Paragraph 1 The report states, "The timeframe in which the attributes listed below will be able to measure changes as function of the Project range from a minimum of 7 days (surface water flow) to a maximum of 5 years (pink shrimp, blue crab, and fish species such as bay anchovy). Estimated timeframes are listed below in parentheses." Throughout the document, a maximum of 10 years is identified as an endpoint monitoring timeframe. The Final SEIS should clarify why five years are the maximum duration for this portion of the plan.

RESPONSE: The 5 years refers to how long after the initiation of sampling we will be able to detect change in that particular ecological indicator as a function of the project, not to how long the monitoring plan will be implemented. The text states "The timeframe in which the attributes listed below will be able to measure change as a function of the Project...".

- Page 16. Paragraph 1 The report states that the attributes to be measured, along with the timeframe in which changes are expected to be measureable in parentheses, are:
 1. Riverine Salinity (1 years)
 2. Estuarine Submerged Aquatic Vegetation (5-10 years)
 3. Pink Shrimp and Associated Riverine Macroinvertebrates (5-10 years)
 4. Estuarine/Riverine Fish (5-10 years)
 5. Surface water Flow (7 days)Wetlands and water quality appear to be excluded from this list? The NPS recommends inclusion of wetlands and water quality on this list, as described previously as a monitored resource. Also, it is not clear that given the anticipated variance of confounding effects such as water withdrawals, that these timeframes are sufficient.

Were these timeframes developed while considering the other factors affecting the monitoring targets? The Final SEIS should clarify the assumptions made in establishing these timeframes.

RESPONSE: Wetlands are on this list (please see p.15). Based on our analysis, salinity is the primary water quality parameter that will be monitored.

The purpose of the Jacksonville Harbor Monitoring and Corrective Action Plan is to ensure there are no additional effects to the LSJR ecosystem by the project beyond what is proposed in the Mitigation Plan. The Plan is not to determine the effects of water withdrawals on the system, only to consider them to determine if any changes in salinity are due to the project. The list of ecologic and hydrologic indicators shows the anticipated response time of these indicators based on known life histories of the individual indicator. It is not meant to show the anticipated response time based on confounding factors.

- Page 16, Paragraph 3 The report states, "Ecological monitoring sites will collect information either quarterly (seagrass, pink shrimp, blue crab, fish) or bi-annually (wetland vegetation) on changes in the coverage of Vallisneria densities and community diversity in the main stem nearshore areas and select tributary wetland fringe; changes in the spatial distribution of wetland habitat types of select tributary wetland communities; and changes in the species composition, densities, and spatial distribution of ecological indicator (e.g. eelgrass, white shrimp, blue crab, and fish such as bay anchovy) species in the associated tributaries." This section is unclear. It is difficult to determine what will be monitored on what time cycle. The NPS recommends that the sampling schedules be made clear in the Final SEIS or updated monitoring plan focusing on the specific monitoring targets.

RESPONSE: This paragraph is a summary of the monitoring plan. Details can be found in Section 2 of Appendix F. Text was added to paragraph referencing the reader to Section 2 for more detail.

- Page 16. Numbered List. The report states: a. If less than 30%* of the thresholds exceed their values, no adaptive management action is needed. b. If at least 30%* of thresholds exceed their individual values, additional data mining (tributary flow and precipitation) and analysis along with additional hydrodynamic modeling to determine if the exceedance of the thresholds are directly attributable to the project. The term "thresholds" is not defined until page 17. The NPS recommends defining thresholds earlier in the document before it is discussed how they will be utilized. Also, it is unclear how the 30% of thresholds was developed as a trigger for further adaptive management. Is the 30% a provisional exceedance that will be refined later by a group of scientists? Does it apply to all thresholds or certain ones? It seems possible that a smaller percentage of "thresholds" may have a greater effect, depending on the threshold. To this end, it may not be the percentage of the thresholds but the

magnitude of some and a simple percentage exceedance may not be sufficient. The NPS recommends that this be addressed in the Final SEIS or updated monitoring plan.

RESPONSE: Threshold has been added to the definition list in Section 4.1. As stated in the draft text, all thresholds are provisional and will be determined by an interagency team during the detailed design phase of the project. The 30% was an arbitrary number chosen to illustrate the threshold concept and should not be interpreted as the final threshold for that indicator.

- Page 17, Paragraph 4 The report states, "All thresholds listed below are to be considered PROVISIONAL. The threshold values will be finalized with a team of agency experts and scientists familiar with the indicators during the detailed design phase of the project." The NPS requests to be a participant in the development of the detailed design of the monitoring and adaptive management plan, including the process for establishing thresholds and triggers for future adaptive management.

RESPONSE: The NPS will be contacted at the appropriate time to be included in the process for establishing thresholds and triggers for this project.

- Pages 17 and 18. Provisional Thresholds If these provisional threshold values are based on observed or predicted changes in species composition from the published literature then the relevant literature should be cited. Generally, there are several areas throughout the document where references to published or grey literature should be included to substantiate the selection of a specific threshold. As stated earlier in comments, it is not clear that the sampling schemes are sufficient to determine a statistically significant decrease in a certain metric (e.g., population density). A power analysis would reveal at what percentage loss a significant reduction can be determined. For example, it may be the case that a statistically significant loss (under the proposed sampling scheme) will not be detected until 50% of the habitat is lost or changed, for example. It is not clear that the monitoring outlined here is appropriate to ensure that data will be sufficient to determine whether or not changes in the environment are due to the dredging project.

RESPONSE: Citations will be added to text where appropriate. The USACE will ensure the final monitoring plan components and frequency is sufficient to support the statistical analyses required to determine exceedences with established triggers and thresholds.

Miscellaneous Monitoring Comments

- The question under the plan that is asked (Figure 5) is "Can the threshold exceedances be attributed to the project?" and, if the answer is yes, then the next step is "Run ecological models to determine spatial impacts and magnitude." Ideally, the empirical data would provide sufficient information to determine the spatial impacts and the

magnitude. It is not clear what or why "ecological models" would be run. Are there specific models identified that can utilize the data being collected? There is potential for long-term effects of this project that will not be detected under a five-year sampling regime. A more detailed explanation of why sampling regimes were chosen is necessary.

RESPONSE: The models assist the project effects analyses by filtering out non-project effects. Empirical data collected by the monitoring plan will be input into the models where certain variables can be held static to aid in "filtering out" non-project effects that may confound trends seen in the empirical data. The ecological models also assist the project effects analyses by providing a landscape scale estimate of potential ecological effect that individual point data cannot do. The model results will also be used to provide supporting information to the effects analysis used to determine if any additional mitigation is warranted. The comment by the NPS that the monitoring plan encompasses a 5-year sampling regime is incorrect. The proposed monitoring plan recommends a minimum of 9 years (4 years construction + 5 years post-construction) of data collection to a maximum of 16 years (6 years construction + 10 years post-construction) paid for by the project. The plan also expects to leverage data from existing monitoring stations funded by other entities. This leveraged data can potentially extend the period of record to greater than 20 years at certain locations. The USACE will ensure the final monitoring plan components and frequency is sufficient to support the statistical analyses required to determine exceedences with established triggers and thresholds.

- For example, the use of two transects for eelgrass. Where did this come from? Is it based on what others have published in the scientific literature? Sizes of plots and transects should be identified. Some type of power analysis should be used to confirm that statistical significance can be determined. The eelgrass monitoring will focus on species composition, canopy height and percent cover; however, other values such as growth rate, shoot densities, and production, might also be appropriate. It may be of value to consider a "tiered" approach to monitoring that incorporates more extensive monitoring in the first year or two, followed by an analysis of how much effort is actually needed.

RESPONSE: The "two transects" was suggested by senior scientists at the St. Johns River Water Management District who have extensive experience in monitoring eelgrass in the St. Johns River. This information was previously coordinated with agencies, including the NPS.

- There are various references to monitoring targets throughout the document. However, they need to be organized so the reader can focus on specific targets and determine whether or not the monitoring is sufficient. For example, there is a section briefly discussing eelgrass monitoring (page 8), but later (page 16) that refers to blue crabs, shrimp, etc.

RESPONSE: All provisional thresholds are listed starting on page 17 under the heading "Thresholds that indicate the need for adaptive management action". Page 8, Section 2.3.1, Eelgrass Monitoring) describes the proposed eel grass monitoring plan. Page 16 bullets the measured attributes, of which eelgrass is included under Estuarine Submerged Aquatic Vegetation, and the timeframe in which changes are expected to be measureable. The author is unsure of what changes need to be made as the text on Page 8 and 16 are not describing the same concept. The text "Eelgrass" has been added to the descriptive list referenced in the comment.

- The purpose of this action is to evaluate the effects of the dredging project on the monitoring targets. However, there are several confounding effects (e.g. water withdrawal). To this end, the ability to distinguish between effects of the project and effects of these other factors depends highly on the data available about the other effects. There are not references to this issue or to the availability of these other data.

RESPONSE: On page 15, Bullet 1b of the section titled "Methodology for testing each expectation or hypothesis (including frequency of monitoring) and for reporting" states "...additional data mining (tributary flow and precipitation)...". This statement was intended to indicate other confounding effects should be taken into account to determine why the indicator has exceeded the established threshold. It is anticipated the project would leverage SJRWMD and NOAA stream and atmospheric gages and that data from these gages would be available in the future.

- There should be a greater emphasis on selected aquatic species. For example, commercial and recreational fisheries are not highlighted. There is no mention of oysters as habitat or as a fisheries species. This is a critical habitat type throughout the estuary and in both Clapboard and Sisters Creeks. This habitat should be monitored throughout the process. The NPS recommends that these questions and issues be addressed in the Final SEIS or updated monitoring plan.

RESPONSE: The nekton monitoring does include several commercially and recreationally important species. As there is no currently active routine monitoring of oyster spat/recruitment or historic monitoring programs of this type in the project's area of effect, the USACE did not recommend this particular indicator to be included in the suggested monitoring and corrective action plan. The USACE selected indicators that had existing or historic monitoring programs to leverage information from. USACE will ensure the final monitoring plan components and frequency is sufficient to support the statistical analyses required to determine exceedences with established triggers and thresholds.

- The NPS would be willing to fully participate in future discussions related to the development and refinement of this important monitoring and adaptive management plan.

RESPONSE: The NPS is a welcome member of the Jacksonville Harbor Corrective Action Team. The NPS staff will be contacted at the appropriate time to be included in the process for establishing thresholds and triggers for this project.

U.S. Department of Interior (Fish and Wildlife Service)

- The project occurs within the range of the endangered West Indian (Florida) manatee (*Trichechus manatus latirostris*). According to the DEIS confined underwater blasting may be limited to periods of the year in which manatees are not commonly present. Please specify the times of the year that confined underwater blasting will NOT occur. We would like this spelled out in the blasting plan.

RESPONSE: The USACE continues to evaluate a blasting window. We recognize the potential reduced risk to the manatee if blasting were restricted to the winter months. However, such a restriction may result in the construction taking longer.

- Please provide an estimate of the number of days blasting will be needed.

RESPONSE: Attached is a copy of the graphics provided by e-mail of March 18, 2013. These show the occurrence of rock and potential blasting including the duration. It is possible that more than one contractor and blasting crew would be working different reaches of the project simultaneously. Reach 8 contains the most rock and about 254 days with blasting (one event per day) would be required. Depending on the equipment available, the duration of dredging would be 4-6 years.

See also response July 31, 2013 to National Marine Fisheries Service in Appendix O. http://www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/JAXDGRR2_O_Pert.pdf.

- We recommend the use of a small “warning” blast prior to the main blast to drive any local aquatic wildlife and fishes away from the main blast area.

RESPONSE: Information on warning blasts is discussed in Section 6.3.5.2 of the main report and Appendix A, Sub-Appendix D. A warning blast will be used, and this will be clarified in the blasting plan.

- Page 196-199 describes the Effect Determination for manatees, however it does not provide adequate detail about the blasting precautions that will be taken, such as the number of manatee observers for each blast and the period of the year in which blasting will not occur due to the greater presence of manatees in the area. Please discuss these precautions within this section or refer to another section in which this is described.

RESPONSE: This information is discussed in the blasting plan, SEIS Appendix A, Sub-Appendix D as well as in section 6.3.5.2 of the main report. Note that the blasting plan does call for a blasting window (December through February). As stated earlier, this

window is being reevaluated to determine how the window may affect the duration of the project. Appropriate references to this section and plan will be made in the main report.

See also response July 31, 2013 to National Marine Fisheries Service in Appendix O. http://www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/JAXDGRR2_O_Pert.pdf

- On pages 196-199 please discuss any areas frequently used by manatees and where submerged aquatic vegetation (SAV) may be impacted by salinity changes due to the project. The report indicates that the impact is only a small fraction of the available SAV habitat. What is this percentage and how many of these areas are frequently used by manatee? Or if no impacts are expected to occur to SAVs based on the new information found in the salinity modeling report, please clarify this on these pages.

RESPONSE: SAV modeling indicates that the proposed deepening (to 47') would cause a slightly greater frequency (1 to 3 percentage point increase) of salinity stress in eelgrass beds (180.5 acres of eelgrass) relative to the baseline conditions. This would occur between the Fuller-Warren Bridge and just upstream of the Buckman Bridge. In coordination with the agencies, we have determined this to be a minor impact and should not result in the loss of any of these beds. Additional information can be found in Appendices D and E.

- On page 198 under the 46ft and 50ft alternatives it is indicated that 32 and 43 acres of SAV may be impacted per day. Can you translate that into total impacts? On page 255 there is mention of 296.6 acres of impacted SAV. Is this the number associated with the page 198 numbers? Please describe your proposed mitigation for this acreage in this section or indicate where this information can be found. If these numbers have changed based on the new salinity modeling reports, please indicate this in these sections.

RESPONSE: See above response for impact information. The USACE proposes to purchase conservation lands (328.18 acres) to offset minor impacts to SAV. We also will continue to coordinate with regulatory agencies regarding future SAV restoration projects. The mitigation plan has been revised and will include this information.

- How much essential fish habitat is expected to decrease? What percentage will remain?

RESPONSE: The proposed action would not decrease the amount of essential fish habitat. However, the character of such habitat may be slightly altered by deepening and widening. Additional information can be found in Section 7.3.3.2 and Appendix L.

- Please update the DEIS with the latest information regarding salinity changes and mitigation.

RESPONSE: Subsequent revisions to the Draft GRR2/EIS are posted on the internet at <http://www.saj.usace.army.mil/About/DivisionsOffices/Planning/EnvironmentalBranch/EnvironmentalDocuments.aspx#jaxdgrr2>.

- The draft Fish and Wildlife Coordination Act Report (DCAR) submitted to our office for review has minimal information about the actual effects of this project on endangered species, essential fish habitat, wetlands, and sea grasses. If it is the Corps intention to refer to the EIS for this information, please revise the DCAR to reflect this. Please indicate in each appropriate section where the information can be found within the EIS.

RESPONSE: The DCAR will reference relevant sections of the SEIS. The DCAR has also been updated to include information on salinity effects.

- There is a map showing a spoil deposit over open water that is not addressed at all in the DCAR (Bartram Island expansion). Please update the DCAR map if this is no longer going to be used as a spoil site. Otherwise, address the potential impacts to fish, wildlife, and endangered species within the DCAR.

RESPONSE: This map has been updated.

U.S. Department of Agriculture (Forest Service)

- We encourage the USACE to reconsider including removal of the Kirkpatrick Dam as mitigation for the Jacksonville Harbor Navigation Study.

RESPONSE: Removal of the dam has been screened out from further consideration.

Seminole Tribe of Florida

- We request an electronic copy of an archaeological survey for the proposed project's Area of Potential Effect.

RESPONSE: Copies of submerged cultural resources survey report and diver identification report have been sent, as of last month.

Jacksonville Department of Parks and Recreation

- We request that some manner of armament be included in the scope of work to provide a permanent solution to the eroding river shoreline and continued road wash-outs at Huguenot. We also request that Joe Carlucci Sisters Creek Park and Boat Ramp be considered for shoreline armament as well.

RESPONSE: Beneficial use of dredged material is discussed under the existing DMMP Appendix J; however, construction and maintenance dredging of Federal navigation projects shall normally be accomplished in the least costly manner possible. Beneficial use of dredging material may be further explored during the design phase.

NON-GOVERNMENTAL ORGANIZATION COMMENTS
ON JACKSONVILLE HARBOR NAVIGATION STUDY
DRAFT INTEGRATED GENERAL REEVALUATION
REPORT II AND SUPPLEMENTAL ENVIRONMENTAL
IMPACT STATEMENT



October 24, 2013

Mr. Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District
Jacksonville, FL 32202

RE: INTEGRATED GENERAL REEVALUATION REPORT AND SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT JACKSONVILLE HARBOR NAVIGATION STUDY DUVAL COUNTY, FLORIDA

Dear Mr. Stodola,

St. Johns Riverkeeper (SJRK) has reviewed the numerous versions of the Draft Supplemental Environmental Impact Statement (DSEIS) for the Jacksonville Harbor Navigation Study presented by the U.S. Army Corps of Engineers (USACE).

The following comments were developed in partnership with the following members of our volunteer review team:

- Dr. Kevin Bodge – Senior Vice-President of Olsen Associates, Inc
- Dr. David Jaffee – Professor of Sociology at the University of North Florida
- Dr. Quinton White, Jr. – Executive Director of the Marine Science Research Institute and Professor of Biology and Marine Science at Jacksonville University
- Dr. Jeremy Stalker – Assistant Professor of Biology and Marine Science at Jacksonville University

Previously, as stated on July 31, 2013, St. Johns Riverkeeper had the following concerns that the proposed DSEIS:

- Underestimated the environmental impacts
- Overstated the economic impacts
- Proposed a mitigation plan that was woefully inadequate
- Denied the public of the opportunity to engage in meaningful public participation due to the lack of detail, depth of analysis, and critical information and data that is missing from the DSEIS
- Had not completed numerous studies required for a thorough evaluation

Unfortunately, the above mentioned concerns have still not been fully resolved. In fact, we believe that the DSEIS has gone from bad to worse in an attempt to simply meet an unrealistic deadline for what many USACE personnel believe is an “unachievable project” due to an outrageous price tag that will certainly approach or exceed \$1 billion.

Hundreds of pages of newly revised documents were released over several months that did not track or date modifications and revisions, making it extremely difficult for the public to identify and follow changes during the evolution of the evaluation process. As a result, the unmarked version of the main DSEIS report discourages public review and minimizes the opportunity for our community to have a productive dialogue.

The bottom line is that:

- Changing the river depth by nearly 18% will have a negative impact on the St. Johns River and its tributaries.
- Dredging will increase salinity in the St. Johns, damaging hundreds of acres of wetlands, submerged aquatic vegetation and trees along the banks of our river and tributaries.
- Dredging will increase bank erosion, turbidity, sedimentation and the effects of nutrient pollution, including the frequency and possible duration of toxic green algal outbreaks.
- Dredging will alter dissolved oxygen dynamics in the St. Johns and area waterways.
- Dredging will threaten endangered species and important fisheries that live in our river.

As of October 24, 2013, St. Johns Riverkeeper has serious concerns that the U.S. Army Corps of Engineers:

- Significantly underestimates the environmental impacts, now to an even greater degree than in previous drafts
- Continues to overstate the economic benefits while failing to address the local cost/benefit analysis
- Slashed an already woefully insufficient mitigation plan from \$80 million to \$27 million
- Denies the public of the opportunity to engage in meaningful public participation due to the piecemeal release of critical and often inconsistent information without tracking and clearly dating revisions or following conventional protocol
- Fails to provide a thorough and complete analysis of the potential impacts or to sufficiently answer and resolve outstanding questions and concerns voiced by stakeholders and other state and federal agencies

As the rightful “owners” of the St. Johns River, the public expects a thorough and honest assessment of the potential benefits, impacts, and costs of the proposed deepening of the Jacksonville Harbor and a transparent and open decision-making process. We cannot afford to roll the dice with the future health of our river or invest a billion dollars in a risky and highly speculative mega-project that has not been fully vetted.

The purpose of the DSEIS is to “examine whether navigation improvements to the existing Federal navigation project at Jacksonville, Harbor, Jacksonville, Florida are warranted and in the Federal interest.” (p. 1) and to address the potential environmental impacts of the deep dredge of the St. Johns River from 40 to 47-feet, which is the Locally Preferred Plan (LPP).

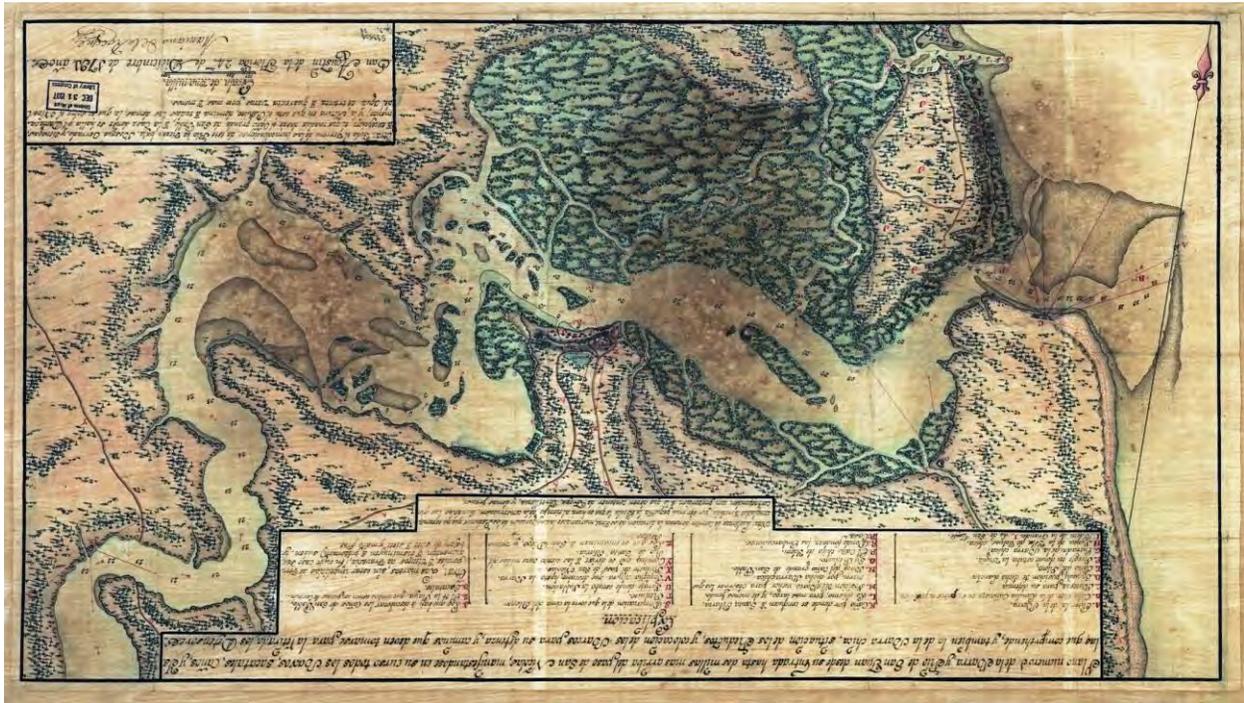
Thirteen miles of the river would be deepened, from the mouth of the St. Johns River to just west of the Dames Point Bridge near Blount Island, and two areas of the channel close to Chicopit Bay and Ft. Caroline National Memorial would also be widened. This would result in the removal of 18 million cubic yards of dredged material. In addition, up to 56 million cubic yards of dredge material would be removed from annual maintenance dredging over the 50-year life of the project. The report estimates the cost of the dredging project at \$733 million, including only \$27 million for mitigation of anticipated environmental impacts. However, this fails to take into account the cost of annual maintenance dredging or infrastructure upgrades that will be required.

History of Unintended Consequences

“Major river systems have been dammed and dammed again: waterways have been dredged beyond practical need; and too many estuaries have been lost. Most politically advantageous projects have been completed and pork-barrel money is more tainted than ever.” The River Killers (1974)

The pre-development historic river channel from the river mouth to downtown Jacksonville was naturally shallow and allowed a much smaller volume of tidal flows than the current channel. Navigation maps circa 1886 show that prior to channel deepening efforts the historic river was broad, generally shallow, and had a winding, relatively narrow channel that ranged in depth from 3-4 fathoms (18-24 feet at mean lower low water). The location of the channel at the mouth of the river was subject to frequent changes due to shifting sand bars where the river reaches the coast.

Navigation maps warn of these changes and encourage use of local pilots to help ships navigate the changing river channel. The depth and width of the river mouth varied according to constant sand movement up and down the coastline. The changing sand bars at the mouth of the river, plus the winding relatively shallow river depth substantially limited upstream tidal movement of high salinity ocean waters. This was a key influence in establishing the pre-development shallow marine and tidal ecosystems in the river (sea grasses and related habitat for fish, shell fish, wading birds, etc.). Historic pre-development low salinity conditions starting from near the river mouth also strongly influenced adjacent near shore upland ecosystems.



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Navigation channel dredging and urban development along the St. Johns River over the past 100+ years have resulted in a deeper and wider channel to downtown Jacksonville, a distance of more than 20 miles upriver from the river mouth. The winding, relatively narrow and often changing natural channel in the river has been replaced with a straighter, much wider and much deeper channel varying in depth from around 34 to 60 feet.

The "cumulative impacts" of these changes have resulted in greatly increased tidal exchanges much further upriver with substantial increases in the range and level of salinity in the lower St. Johns River basin. These increased salinity levels have progressively increased stress on the natural ecosystems in the river and on the natural and human environments that depend on them.

"I do not know how much more we can do and still expect to see fish, shrimp, manatees and dolphins in the St. Johns River. And I hope we don't have our grandchildren asking "Why did they do that? Didn't they know it was harmful to the river?"

- Dr. Quinton White, Florida Times-Union, 9/26/13

Underestimates the Environmental Impacts

Unfortunately, the proposed DSEIS suggests we repeat mistakes of our past. On page 173 of the DSEIS, the USACE acknowledges the inevitable and unavoidable harm that will occur to the St. Johns River as a result of the deep dredge:

"The deepened channel will allow a greater volume of seawater to penetrate up the St. Johns River. This could result in:

- Increased tidal amplitude within the river and adjacent marshes
- Increases in salinity within the estuary which could:
 - Impact freshwater wetlands and submerged aquatic vegetation in areas of increased salinity.
 - Change community composition and diversity of plant and animal communities in areas of increased salinities.
 - Shift the location of optimal salinities for those species with salinity preferences.
- Change water residence times, which in conjunction with salinity changes could:
 - Alter plankton species composition and growth patterns.
 - Alter dissolved oxygen dynamics in the river main channel” (p. 173)

Unfortunately, the DSEIS uses averages, subjective assumptions and high-risk models to downplay the impact of the deep dredge.

- “The evaluation of the project alternatives’ effects on natural communities as a result of the movement of higher salinity water upstream in the LSJR and tributaries relies on the use of hydrodynamic and ecological models. The hydrodynamic model reports (Taylor 2011, 2013b, 2013c) present error statistics for the EFDC and CE-QUAL-ICM models. Similar error statistics cannot, however, be calculated for the ecological models. *This represents an uncertain risk associated with evaluation of the ecological model results.*” (p. 285)
- “Recorded conditions for streamflow, rainfall, land use, and other factors during a six-year period (1996 – 2001) provide input data for the hydrodynamic models. Future condition hydrodynamic model simulations further rely on assumptions about the rate of sea level rise, quantity of water withdrawal from the middle St. Johns River, patterns of land use, and other factors. Actual conditions will deviate from those used to drive the models. *These deviations introduce additional uncertainty in the models’ ability to predict future conditions and impacts.*” (p. 285)

Lack of Confidence in the Models

Water Supply Impact Study (WSIS)

To determine the potential ecological effects of possible salinity changes in the St. Johns River, USACE used the St. Johns River Water Management District’s St. Johns River Water Supply Impact Study (WSIS) and model. This study was produced to specifically evaluate the effects of surface water withdrawals, focusing primarily on water quantity while largely ignoring water quality concerns and impacts.

The National Resource Council (NRC) identified the following limitations of the WSIS and recommended a variety of additional, specific analyses that must be completed.

- The Ocklawaha River, the largest tributary of the St. Johns River, was not included in the study despite the fact that the Ocklawaha River contributes 1/3 of the total flow of the St. Johns River.

- The omission of the Ocklawaha from this study prevents or severely limits the opportunity to draw meaningful ecological conclusions from the Water Supply Impact Study.
- The NRC recommends that the District develop minimum flows standards for the Ocklawaha River before any decisions are made.
- Due to the lack of previous data, 1995 was established as the baseline year. Historical impacts that have decreased fresh water flow were not considered.
- The Water Supply Impact Study was not designed to address all the outstanding issues related to water withdrawals that are beyond the District's control like:
 - Future sea level rise
 - Increased storm water runoff
 - Pollutant loading due to urban growth
 - Potential dredging
 - Back to back extreme events

In a 7/31/13 letter to USACE, the U.S. Environmental Protection Agency stated the following regarding the WSIS:

“EPA recommends the final SEIS discuss how the National Academy of Sciences’ concerns with the SJRWMD models used were addressed. Expectations are for a peer-reviewed model to be used to inform and evaluate environmental impacts prior to the ROD with opportunity for public review.”

Environmental Fluid Dynamics Code (EFDC)

The USACE also used the numerical hydrodynamic model Environmental Fluid Dynamics Code (EFDC) to assess the direct impacts of channel modifications to salinity and water circulation.

The EFDC results reported based on the 10th and 90th percentile of water level duration curve for tide range changes and based on the 50th percentile duration curve, the top layer, bottom layer and depth-average salinities.

The consistent use of the 10th, 60th and 90th percentiles to create an average for predicated changes in parameters (i.e. salinity, residence time) is unconventional and confusing. It appears that upper and lower predicted data is ignored. Why not average all the percentiles to a mean, or find a median?

This practice is poor statistics at best. The upper and lower 10th percentiles include very important information, especially in light of extreme events. The changes to the predicted values are probably large in the upper 90-100th percentiles. These extreme time/salinity events present the most harm. Even in an undisturbed natural system, times occur when salinities in estuaries become very high. In some areas they have been linked with seagrass die-off and general ecological decline for the duration of the event and for a time after (Zieman et al., 1999, Carlson et al., 1994)

These events may be naturally occurring and rare, but an increase in the frequency or duration that may occur from a dredging depth of only a few ppt or occurrences/decade

can be catastrophic to a mixed brackish system. This information is buried in that top 91-100th percentile. Ignoring it is unconventional and irresponsible.

The EFDC model of the St. Johns River main stem was also used to provide boundary conditions for the MIKE21 hydrodynamic and salinity model used to determine the potential impacts of a 47' deep dredge in the North Timucuan marsh area, Julington Creek, Durbin Creek, Ortega River, and Cedar River. The ADCIRC model of the river main stem provided the input data to the modeling of marsh response to sea level change.

On page 58 of the Attachment M – Hydrodynamic Modeling for Salt Marsh/Tributaries, USACE acknowledges shortcomings of the EFDC hydrodynamic model:

“The model underestimation of the salinity measurements at Station NSJ200015 is due to the low salinity input provided by the USACE EFDC model at the mouth of Ortega River. The model estimates well the very low salinity regime at the Ortega River Upstream Stations OR434 and 20030349 but underestimates the episodic salinity spikes in the range of 4-6 ppt. The underestimation is likely due to a lack of more accurate and more recent river bathymetry and lateral inflow data.”

“Notably, the absence of more frequent and detailed lateral inflow, water level, and salinity measurements limits validation of the model to calibration and verification to observed salinity range.”

Uniform Mitigation Assessment Method (UMAM)

There are well-documented concerns regarding the use of UMAM to determine the value of wetland loss.

The following was published by the Southwest Florida Regional Planning Council:

- If UMAM is to be continued to be utilized, an additional set of weighing factors need to be employed to attain a more accurate functional assessment than what is being achieved currently.
- The use of UMAM in the field proved, by the end of the study, to be the most time consuming and subjective of the methods.
- In 62-345.100(1) F.S., Florida law states that “The intent of this rule is to fulfill the mandate of subsection 373.414(18) F.S., which requires the establishment of a uniform mitigation assessment method to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters and to award and deduct mitigation bank credits.” Paragraph (2) goes on to state that “the methodology in this Chapter provides a standardized procedure for assessing the functions provided by wetlands and other surface waters, the amount that those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset that loss.” From these two paragraphs, *it is clear that the primary intent of the Chapter is to determine mitigation requirements and that assessing wetland function is secondary to that goal.*

USACE published the following UMAM concerns on their website:

- UMAM has not been approved for regional or nation-wide application due to pending issues concerning the model and its documentation.
- UMAM relies heavily on professional judgement.
- UMAM assumptions should be well-documented.
- UMAM utilizes non-policy compliant lag-time and risk factors.

DSEIS UMAM Problems:

UMAM does not have the capacity to accurately and precisely quantify damaging impacts. However, that does not mean that negative impacts will not occur, raising serious concerns about the shortcomings of the overall project analysis and the likelihood of damage to occur beyond the quantifiable threshold identified in the DEIS

- The interagency UMAM functional analysis did not identify any functional units of compensation that would be required to replace or substitute for unavoidable losses of wetlands as the effects would be less than the quantifiable threshold. In order to cause a functional loss in one of the three effect categories in UMAM, the effect must be on a 10% order of magnitude, or at least a 1 on a scale of 0 to 10. The effects on wetlands would not be of this magnitude. (p. 237)
- The effects to SAVs were “determined too small to quantify using the Uniform Mitigation Assessment Methodology (UMAM) tool. However, increase in moderate to extreme stress frequency to SAV would range from 0% to 3% within the project effects area. Changes of the predicted magnitudes would only cause extremely minor changes in SAV bed abundance and composition. SAV beds downstream that already experience multiple stressors such as existing salinity, littoral development, and high water flow could experience additional minor effects to the SAV that occupy that area.” (p. 252)
- The UMAM functional analysis did not identify any functional units of compensation that would be required to replace or substitute for unavoidable losses of SAV as the effects would be less than the quantifiable threshold. In order to cause a functional loss in one of the three effect categories in a UMAM analysis, the effect must be on a 10% order of magnitude.” (p. 252)

In the 7/31/13 EPA letter to USACE, EPA also expresses concerns regarding the use of UMAM in the DSEIS:

“It is unclear whether the models used for the TMDL purposes is appropriate or has been appropriately revised to model the salinity impacts of the proposed action. Modeling harbor deepening impacts is not the same as modeling nonpoint and point-source loadings for the purpose of establishing total maximum daily loads to inform national pollutant discharge elimination system permit limits.”

Salinity

The DSEIS fails to adequately account for the impact associated with salinity increases that will occur upstream of the channel deepening. The DSEIS minimizes the ecological

shift in species, populations and communities that will occur. The DSEIS contains inconsistencies and questionable statements regarding the potential impacts, calling into question the accuracy of the models used to make the predictions. For instance, the DSEIS projects the exact same acreage of wetlands and Submerged Aquatic Vegetation (SAV) that will be impacted by the changes in salinity for every depth analyzed from 44 to 50 feet, despite acknowledgement that “the magnitude of upstream movement increases with increase in project depth.”

- “The deepened channel will result in the movement of higher saline water farther upstream. The magnitude of upstream movement increases with increase in project depth. The change in salinity will shift the northern boundary of SAV upstream. **Sections 7.3.7 -7.3.12** discuss the magnitude of these effects for different project alternatives.”(p. 282)

The DSEIS dismisses project-related increases in salinity as being much smaller than those natural variations in salinity that the river naturally experiences. While it is true that salinity levels naturally change by drought, etc., these changes are acute and the river biota is adapted to them. The project-related increases are chronic; i.e., long-term. They shift the baseline condition to a higher-saline regime such that acute, short-term natural changes in salinity have greater impact. In addition, forested wetlands are impacted by very small changes in salinity and those impacts may take years to see.

It is not scientifically acceptable or dutifully responsible to normalize the dredging’s long-term predicted changes by natural short-term changes, particularly in regard to salinity and water levels.

The DSEIS states the following:

- “Based on hydrodynamic modeling performed to evaluate salinity changes associated with deepening the navigation channel, the recommended plan may cause average salinity levels in that portion of the St. Johns River affected by the project to increase slightly, resulting in an upriver shift of salinity breakpoints. The expected effect of such changes would be a shift in wetland species composition and changes in distribution of wetland communities, *although uncertainty exists about the magnitude of both the effect of deepening on salinity and the ecological response to changes in salinity*. Such changes may also affect other ecological resources, including fish and invertebrate species found in the river.” (p. vi)
- “To identify and offset these unavoidable effects on riverine ecological communities, the USACE will monitor impacts and create mitigation habitat, or enhance existing habitats, or a combination of the two.” (p. 283)
- “Salinity modeling suggested that channel construction for design depths of 44 ft to 50 ft (NAVD) will alter salinities to one extent or another as far upstream or slightly farther than the Shands Bridge near Green Cove Springs (river mile 50). (p. 271)
- “Salinity changes may modify the biological community, altering or eliminating vegetative composition (i.e. SAV or wetlands) and thus altering or eliminating

habitat for species using those communities. Species composition may in general shift to more salinity tolerant species. Species that depend on specific salinities in specific habitats may encounter inappropriate salinities in otherwise acceptable habitat or if using salinity as a cue to seek specific habitats, move away from appropriate habitat if salinity optimum for the species under consideration occurs in less of the optimum habitat. Changes in the length of time water remains in the river system may change phytoplankton dynamics and may slightly increase the potential for algal bloom development.” (p. 195)

- “Fishes and macroinvertebrates likewise will see an upstream shift towards higher salinity levels in the area of effect. It is conceivable that there would be a reduction in habitat utilization for freshwater fish and macroinvertebrates in the future with a near equal increase in habitat utilization for those that are adapted to estuarine conditions. This change would likely occur regardless of the proposed project, with SLR likely being the major contributor towards the upstream shift to higher salinity levels. **Cumulatively, however, there could be some intensification caused as a result of the project.** Assessment of potential salinity – fish population relationships, when completed (June-July 2013), may provide a more detailed evaluation of potential long-term effects. “ (p. 272)
- “Potential fisheries impacts to freshwater species may occur due to salinity changes that reduce freshwater and low salinity zones and increase higher salinity zones. Losses of SAV from increased salinity would result in lower quality habitat for a wide variety of fish species. Changes in circulation patterns may result in potential for phytoplankton blooms and resultant declines in dissolved oxygen (SJRWMD Chapter 12).” (p. 218-219)
- “Predicted indirect effects due to salinity change would impact an estimated 296.60 acres of SAV. Mitigation and monitoring would be performed...Predicted indirect effects due to salinity change would impact an estimated 448.95 acres of wetlands.” (p. 134) *The exact same impacts are anticipated for 44, 45, 46, 47, and 50 feet.*
- “As detailed in Section 7.3.10 and Taylor (2013a), analysis of LSJR salinities simulated for the period 1996 – 2001 indicated that changes in salinity would impact distribution of submerged aquatic vegetation (SAV) in the LSJR upstream of the project area and increase salinity stress to SAV in the northern part of its range. The anticipated SAV impact areas include Important Manatee Areas as well as designated critical habitat for the manatee. In comparison to the No Action Alternative, the 46-ft and 50-ft alternatives would increase the total moderate/extreme stress categories by 32 and 43 acres of potential SAV habitat per day, respectively. The ecological model developed by the SJRWMD (Dobberfuhr et al. 2012) and applied by Taylor Engineering (2013a) define moderate to extreme stress categories as those that result in obvious decline in SAV bed coverage (moderate) to loss of most or all of above-ground SAV biomass (extreme). The proposed deepening would decrease the amount of potential SAV habitat available to manatees for foraging; however, the conservative estimates of impact acreage represent a very small fraction of the total available SAV habitat in the LSJR.” (p. 199)

- “Expansion of habitats for estuarine and marine plant and animal species will occur at the expense of salinity intolerant species.” (p. 282)
- “The EFDC hydrodynamic and salinity model, validated for the Jacksonville Harbor Deepening project area, provided the means to assess the direct impacts of channel modifications to tides, salinity, and water circulation in the main stem of the Lower St. Johns River for the 2018 conditions (immediately after construction of the Jacksonville Harbor Deepening Project) and 2068 (project horizon). Model results show the tide range increases as much as 0.3 ft (2018 scenarios) and 0.3 ft (2068 scenarios) and flow velocity changes as much as ± 0.3 ft/s for both scenarios. Results also show median salinity increases as much as 0.5 ppt (2018 scenarios) and 0.6 ppt (2068 scenarios).” (p. 188)

When discussing predicted salinity changes, no detail is provided on the changes in salinity in the layers of the stratified system or the ultimate depth and shape of the salt wedge present in the St. Johns River. It is simply stated that the surface salinities will change by far less than 1ppt. We wouldn't expect the top layer of water to change that much in any major shift in the system.

Is the salinity change predicted an average of all depths?

Is it the change at the surface?

Does the salt wedge remain static through the model, or are there changes in the salinity at the base of the riverbed/water interface?

It is unclear in the summary, and not specified in the provided data.

An increase of several ppt of salinity in the bottom layer would not change the salinity in the surface of the river, but could have dramatic effects on sessile benthic life.

The model used has the ability to be a three dimensional flow model, yet no three dimensional analysis is available, and the third dimension is simply averaged. That is uninformative. If there truly is no change in the layers in the stratified river, then state that. If not, then provide the temporal and spatial shifts in the salt water wedge as it interacts with a deeper channel. If the modelers are simply treating the river as a volume with one set of properties as an initial modeling state, that is an oversimplification of a salt-wedge estuary.

In addition, we have concerns regarding the following inconsistency. The stated change in the surficial aquifer system, as modeled by the USGS indicates an increase of 4ppt in the highly conductive zones of the aquifer. Yet changes in the river stated in the report are less than 0.1ppt. How is this possible?

If the river water is increasing by less than 0.1 ppt, one would expect a lower salinity change in the connected surficial aquifer. We understand that the river water is stratified, and the more saline portion of the river is in contact with the riverbed/aquifer material. However, this relationship is never addressed, rather it is simply implied that these changes are small.

Was the USGS considering a stratified river volume, where the bottom of the river increases 4ppt? This would be a significant increase to benthic flora and fauna that are sessile and cannot move with the shift in the river salinity. If the salinity on the bottom has the possibility to increase by 4ppt in this portion of the river, what are the true possibilities for this bottom salt layer in the rest of the river?

Residency Time

The St. Johns River has recently experienced a rash of algal blooms with toxin levels detected as high as 200 times the World Health Organization's recommended recreational use threshold. Increases in residency time will create additional health risks due to the potential increase and duration of toxic Harmful Algal Bloom events.

- "Increases in water age may encourage algal bloom development." (p. 137, 160)
- "Changes in the length of time water remains in the river system may change phytoplankton dynamics and may slightly increase the potential for algal bloom development." (p. 195, 218) "Evaluation of algal bloom metrics – chlorophyll-a and dissolved oxygen – with a numeric model is currently in progress. This DSEIS will be updated with the model results when available." (p. 251, 273)

The National Parks Service also raises this concern in a July 2013 letter to USACE:

"Page 182, Section 7.2.6.3, Other Water Quality

Water residence time in the St. Johns River and its tributaries is a concern for NPS management within the Preserve. Results from past studies suggest that flushing of this system is slow. Because of the protracted flushing time within the Preserve, preventing the inflow of contaminants and excess nutrients is critical to the long-term management and protection of park resources. In the table on Page 133 at the Locally Preferred Plan/Tentatively Selected Plan (47ft) it states: "Deepening would result in...risk to water residence time." Any increase in water residence time could be damaging to park resources, especially in the case of, for example, a chemical spill or a Harmful Algal Bloom event."

Shoreline Erosion

Greater shoreline erosion will damage natural habitat and increase turbidity and sedimentation in the St. Johns and its tributaries. The sedimentation ultimately settles toward the lower energy tributaries, further exacerbating shoaling of those feeder water channels.

The DSEIS conclusion that there will be no significant increase in ship wake or shoreline erosion from the proposed project is incorrect. It is based upon the use of a predictive model that is not typically used by the USACE for such analysis, nor considered standard practice for such analysis. The model also fails to properly consider changes in the with-project design vessel.

The USACE analysis is described in Appendix A, Attachment G (AdH – Hydrodynamic Modeling for (Riverine) Channel Shoaling Addendum; August 2013).

It relies upon a hydrodynamic model that is otherwise used to evaluate tidal currents and water elevations. It was not calibrated for the evaluation of ship wakes, and there is no indication of the model's ability to accurately predict ship wake.

In contrast, traditional and accepted engineering analysis predicts the size of ship wake (akin to wave height) from empirical formulae that describe the vessel characteristics, speed, and the channel dimensions – such as USACE utilized in its evaluation of the Savannah Harbor deepening project. These include formulae developed by the US Naval Academy. (D. Kriebel & W. Seelig, “An empirical model for ship-generated waves”. Proc., Fifth Int'l. Symposium on Ocean Wave Measurement and Analysis. 2005. *Need to properly place in the final document.*)

For the DSEIS, the USACE analyses considered only a single design vessel of 1140-ft length with draft of 37-ft (existing conditions at 40-ft depth) and 44-ft (with-project conditions at 47-ft depth). For this vessel, moving at 7 knots at various tidal regimes, the DSEIS concluded that “the ship wake and affect [sic] on water stages at the river banks tends to diminish under the with-project condition” and that both increases and decreases in ship wake, water stages, and near-bank currents are predicted for the with-project condition. Very large increases in predicted with-project currents (over 3 ft/sec) were shown to be very sensitive to sampling locations within the model. (App. A, Att. G., final two pages).

The larger and deeper ship sizes accommodated by the project will result in larger (not diminished) ship wakes; and a ten-fold difference in predicted water velocities within a very short distance along the riverbank is not consistent with natural observations.

Instead, for the single 1140-ft design vessel moving at a speed of 7 knots, traditional analysis predicts that the size of the ship wake would increase by 16% from the without- to with-project conditions. This is not an insignificant change. *Further, traditional analysis predicts that the ship wake would increase between 50% and 90% when comparing a typical existing vessel (about 950-ft length) with post-Panamax vessels (1150- to 1200-ft length) for the without- and with-project conditions.* The size of the ship wake increases dramatically – as does the effect of larger vessel size upon ship wake – for vessel speeds greater than 7 knots. The USACE analysis, however, considered only 7-knot vessel speeds (relative to the tidal current), whereas the Savannah Harbor evaluation considered 10 knot speeds. Selection of a 10-knot speed at Savannah was based upon ship observations, but no justification is given for the selection of a smaller 7-knot speed at Jacksonville.

The approach used by USACE in the DSEIS to calculate the increase in ship wake due to the deep dredge appears to severely underestimate the actual threat of shoreline erosion, sedimentation, loss of habitat and turbidity.

The National Parks Service expressed similar concerns regarding shoreline erosion in their July 2013 letter:

“Page 112, Public and Agency Concerns

The NPS has expressed concerns about the rate of shoreline erosion along the St. Johns River at Fort Caroline and impacts to visitor facilities (trails, boat ramp, observation deck and exhibits) and natural resources (loss of mature oak and pine trees to erosion and saltwater intrusion in the root zone). This concern has been shared with the USACE in regards to rehabilitation of the training wall in reach 6. (Note this issue was raised during the Feb 7, 2008 feasibility scoping meeting, and on page 308.) Please revise the report to describe plans to rehabilitate the training walls and alternative measures to prevent or mitigate additional shoreline loss from the proposed deepening, widening and maintenance dredging on NPS resources at Fort Caroline National Memorial in reach 6.”

“Page 139, Section 6.1, Description of the Tentatively Selected Plan (TSP); See also Figure 24

St. Johns Bluff Reach (approximate River Miles 7-8) is one of the sections of the St. Johns River that is proposed for widening within the Tentatively Selected Plan. Both sides of the channel would be widened by varying amounts up to 300 ft. The Fort Caroline area of the Preserve is located along the south bank of the river in that immediate area. The NPS is concerned that the widening of the south side of the channel, combined with the deepening of the channel will increase shoreline erosion along the southern bank of the St. Johns River and adversely impact the Preserve’s natural and cultural resources. Have any of the modeling studies performed to date considered this potential impact? The NPS requests that the USACE address this concern during ongoing project discussions between the two agencies, and as appropriate, in the Final Draft of the GRR II and FSEIS.”

The EPA also expressed concerns in their July 2013 letter:

“EPA recommends the final SEIS fully evaluate the long-term turbidity effects associated with larger ships using a deeper navigational channel. Larger ships will create larger wakes, potentially increasing shoreline erosion effects, and potentially disturbing and re-suspending bottom sediments. Additionally, the widening effect associated with the proposed dredging will likely expose more surface area of unconsolidated sediments to erosion.”

Sedimentation

In addition to the above, the proposed deepening – be it at 45-ft or 47-ft -- will clearly have a significant impact upon the river’s hydraulic and sedimentation patterns which is not adequately discussed in the DSEIS. For example, by increasing the hydraulic efficiency of the channel in the center of the river, both the tidal and riverine flow become increasingly concentrated to the middle of the river, further changing the flow patterns along the banks and side-channels. This effect is not adequately examined or described in the DSEIS. The cell size of the numerical models is, as admitted in DSEIS, too large to discern changes in currents at specific locations. Also, the report

principally considers changes in sedimentation and flow that affect navigation – not the overall condition of the river, particularly the banks and streams.

Rising Sea Levels

USACE implies in the DEIS that sea level rise (SLR) is occurring more quickly than previously thought, yet the USACE primarily evaluates the effects of the minimum value for SLR and never considers either the Intermediate or the worst-case scenario. The DEIS should be evaluating the worst case and most likely scenarios, and yet the USACE instead focused on the most optimistic scenario that might be expected. The DEIS also uses outdated values for the Baseline, Intermediate, and High SLR estimates, since the version of EC 1165-2-212 used in the DEIS expired September 30, 2013. By using these lower values instead of those in the updated version, the USACE further underestimates the potential impacts from SLR in the DEIS. This also further minimizes the overall projected impacts, since the impacts from the dredging are expected to exacerbate and expedite the inevitable affects of SLR.

Offshore Dredged Material Disposal

The proposed offshore disposal area is not clearly defined in the DSEIS. The present offshore disposal area has less than 4 million cubic yard capacity, yet the project requires disposal of about 18 million cubic yards. A proposed expansion of the offshore disposal area is not yet approved, and its draft design is sited very close to the existing offshore sand borrow area for the Duval County federal shore protection project.

"The use of another, new ODMDS in the Atlantic Ocean off the Jacksonville coast will also result in potential impacts as the site is used repeatedly to dispose of dredged material from maintenance operations. These impacts can be avoided and minimized by using best management practices defined by the federal agencies responsible for these resources, including seasonal avoidance of site use and ship operation to avoid impacts with threatened and endangered species." (p. 271)

EPA made multiple comments in their July 2013 letter regarding ODMDS Impacts including:

"EPA recommends the final SEIS address the Marine Protection, Research and Sanctuaries Act Requirements. All dredged material from this project must be evaluated and determined to be suitable for ocean disposal if it is to be disposed at the new Jacksonville ODMDS, and EPA must concur with the USACE's compliance determinations. EPA also recommends the SEIS discuss what testing is likely to be performed and when. Additionally for material not meeting the ocean disposal criteria, EPA recommends the final SEIS discuss where it will be disposed, including whether the project will maintain its feasibility if a portion of the material fails to meet the ocean disposal criteria... In the area of the proposed action, there have been incidences of dredged material failing to meet the ocean dumping criteria....Consequently, EPA notes a potential for adverse effects on aquatic environments of dredged material does exist."

We remain concerned about the lack of sufficient information regarding the disposal methods, locations, and testing of the dredge material and the potential for adverse impacts on the St. Johns River and its wildlife.

Threatened and Endangered Species

The DSEIS recognizes that the following threatened and endangered species may occur in the study area:

- West Indian (Florida) Manatee
- Piping Plover
- Wood Stork
- Red Knot
- Loggerhead Sea Turtle
- Green Sea Turtle
- Leatherback Sea Turtle
- Kemp's Ridley Sea Turtle
- Gopher Tortoise
- Short-nosed Sturgeon
- Atlantic Sturgeon
- Smalltooth Sawfish
- Northern Right Whale

We are concerned about the potential adverse impacts to threatened and endangered species and essential fish habitat, as a result of the deep dredge blasting and larger ships.

- “Critical habitat was designated for the manatee in 1976 (50 Code of Federal Regulations [CFR] Part 17.95(a)) and encompasses the St. Johns River, including a portion of the proposed project construction area (i.e., the entrance channel and federal navigation channel). Like other Atlantic coast counties where manatees occur, Duval County has an FWC approved manatee plan, regularly updated, that provides extensive detail on the manatee activities in the river and the various manatee zones in the river.” (p. 42)
- “The southern critical habitat area widens near the Georgia-Florida boundary where the highest concentrations of individual whales gather during their winter calving season (typically December through March, with peak calving in December and January). During this time, the population consists primarily of mothers and newborn calves, some juveniles, and occasionally some adult males and noncalving adult females (<http://www.neaq.org>). Sightings of North Atlantic right whales within waters off Florida are limited to late fall to early spring months. Sightings are concentrated near northeastern Florida and southeastern Georgia; however, sightings of individual whales have been reported as far south as Palm Beach County, Florida. In 2011, two individuals were spotted in the St. Johns River.” (p. 52)

- “The U.S. Fish and Wildlife Service have recently stated that the potential use of confined blasting techniques to deepen the Federal channel is a concern. Also, in early scoping, the Florida Fish and Wildlife Conservation Commission stated that the no-action alternative should be selected because they felt that threatened and endangered species could not be adequately protected during blasting operations.” (p. 109)
- “Increased number of larger ships could result in: Greater risk of ships in the federal channel colliding with whales, manatees and other marine mammals.” (p. 172)

Air Quality Degradation

We are concerned that the DSEIS may have underestimated the potential impacts to air quality, in particular ozone concentrations. Currently, the City of Jacksonville is just under the EPA limits of 75 parts per billion (ppb) at approximately 73 ppb, with the number one source of this pollutant coming from mobile sources. However, the EPA is considering the lowering of these limits to 65 or 70 ppb in the near future. These changes would make it extremely difficult for Jacksonville to remain in compliance, especially with a significant increase in trucks entering and leaving our county as a result of projected increases in cargo. Noncompliance could jeopardize federal funding for local transportation projects, in addition to water and sewer infrastructure that is important for protecting the St. Johns River and our aquifer. Any increase in air pollutants resulting from the larger post-Panamax ships and the increase in cargo truck traffic could have an adverse impact on the water quality of the St. Johns, its tributaries, and residents of the Greater Jacksonville area.

Aquifer Impacts

On page 14 of the DSEIS, USACE acknowledges that the confining layer protecting our public water supply may leak.

“The intermediate confining unit consists of beds of relatively low permeability sediments that vary in thickness and areal extent. The unit may be breached by sinkholes, fractures, and other openings. The Floridan aquifer system is composed primarily of limestone and dolomite. The rate of leakage through the intermediate confining unit is controlled by the leakage coefficient of the intermediate confining unit and the head difference between the Upper Floridan aquifer and the surficial aquifer system. The Cedar Keys, Oldsmar and Avon Park Formations and the Ocala Limestone are part of the Floridan aquifer system. The Upper Floridan aquifer is contained primarily in the Ocala Limestone. The Hawthorn Group is the principal confining unit that covers the Floridan aquifer in much of the basin (SJRWMD 1994).”

It is unclear how USACE addresses the potential of breaches in the confining layer that may lead to saltwater intrusion in the Floridan aquifer system.

On page 130, USACE states the following in regards to groundwater:

“No significant salinity increase is anticipated within surficial aquifer. No effect to Floridan Aquifer. “

However, “**the USGS study does not necessarily simulate actual conditions**, but employed a range of plausible hypothetical conditions to determine the risk to the surficial aquifer from saline water intrusion caused by deepening the channel. Simulations have determined that the minimal increase in river salinity resulting from any of the proposed deepening alternatives, and no increase in hydrostatic head, will not significantly increase the surficial aquifer salinity except at the boundary of the river channel where the surficial aquifer is likely already impacted from exposure to the high river salinity.”

“The Floridan Aquifer is the primary drinking water supply in Duval County and was determined to be safe from salinity influence from the deepening. There is sufficient low permeability sediment separating the channel from the Floridan Aquifer to avoid salinity impact from the channel deepening. There are water-bearing zones within the upper Hawthorn Group above the Floridan Aquifer that have not been fully defined laterally, but they are protected by low permeability material overlying these water-bearing zones that separate them from the channel.”

Without simulating actual conditions, how can the USACE be sure that our public water supply is not at risk?

National Environmental Protection Act (NEPA)

NEPA requires federal agencies to thoroughly and objectively investigate, evaluate, and disclose environmental consequences associated with any major federal action to foster informed decision-making. NEPA also requires the environmental impact statement to serve as an “environmental full disclosure law so that the public can weigh a project’s benefits against its environmental costs.” Nat’l Audubon Society v. Hoffman, 132 F. 3d 7, 12(2d Cir. 1997)

If the DSEIS does not fully consider all reasonably foreseeable, significant, and adverse impacts of the proposed deep dredge, the USACE is shortchanging this community and the river is in violation of NEPA and its regulatory obligations.

Overstates the Economic Impacts

“The idea that the Panama Canal will instantly bring more business to the Eastern Seaboard is an ‘urban myth.’ Whatever business the Atlantic ports could easily take from Los Angeles and other Pacific cities has already moved east”. (John Martin, JAXPORT’s Consultant - The Dallas Morning News, Feb, 2012).

Even though the economic component of this project is not SJRK’s primary focus, the potential economic benefits that could be reasonably expected must be accurately assessed, if we, the community, are to adequately assess the pros and cons and make an informed decision.

Deepening navigation channels does not increase world trade. To propose an over-abundance of deepened navigation channels along the U. S. East Coast, given the very substantial costs and environmental impacts associated with deepening, is not a well-developed strategic position. The USACE planning process includes no consideration of broad regional economic or environmental issues. It seeks to evaluate deepening at every port on an individual basis in the absence of any regional or national strategy. This will lead to aggressive competition that will drive port fees below a point to achieve a possible return of investment.

SJRK has concerns that the projected economic benefits by JAXPORT may be significantly overstated. The USACE has already determined that minimal economic benefits would be gained at a substantial cost by going from 45 to 47-feet, and the DSEIS does not address on-going maintenance costs.

“Under the future with-project condition as compared to the future without-project condition the USACE National Economic Development (NED) analysis for this project predicts a slight decrease in the number of ships calling JAXPORT, see **Appendix B.**” (p. 272)

Job Numbers Overstated

The May 2013 DSEIS incorrectly stated, *“The increased traffic with deepening at JAXPORT is expected to provide RED benefits as follows: Create 22,748 for the 45 foot NED plan or 34,508 for the 47 foot LPP new private sector port jobs in Jacksonville.”* The actual numbers for new port jobs according to JAXPORT’s consultant Martin Associates are:

- 45 foot = 841 jobs in 2035 (not 22,748 as previously quoted by USACE)
- **47 foot = 5,587 jobs in 2035 (not 34,508 as previously quoted by USACE)**

In addition, JAXPORT’s numbers provided by Martin Associates have not been peer-reviewed or subject to independent assessment as to their validity.

In the September 2013 DSEIS, USACE simply deleted the above reference to local job projections instead of correcting this inaccuracy.

USACE Determined Minimal Economic Benefit at 45 feet

USACE determined that the 45-foot depth provides the greatest net benefit. USACE determined that the National Economic Development (NED) plan is 45-feet, the “depth where the net benefits are the highest.” The non-federal sponsor, JAXPORT, requested a locally preferred plan (LPP) of 47 feet. The estimated average annual benefits would increase by \$2.1 million by going from 45 to 47-feet, while the estimated average annual costs would increase by \$9.6 million.

Ignores On-going Maintenance Costs

The DSEIS does not describe the projected future maintenance costs of the project, and in particular, it does not describe the anticipated federal versus non-federal future

annual maintenance costs. These costs are said to be included in the Economic Appendix, but they are not. A generic description of the federal and non-federal cost-share percentages is presented in the report, but it is not clear how these will specifically apply to the NED, LPP and TSP alternatives. There is no fiscal description of the existing approximate annual costs to the Government or the Local Sponsor in the without- and with-project conditions.

Similarly, it is not clear whether sediment that shoals the bottom 2-feet of the Locally Preferred Project (LPP) would be a total non-federal fiscal responsibility – given that the LPP is 2 feet deeper than the NED project. For example, when an authorized military channel is deeper than an authorized civil-works channel, the military is responsible for the costs of dredging its channel that is deeper than the civil-works channel. The report does not clarify if this is, or is not, the case; and as described above, it gives no projection as to future maintenance costs and their specific assignment, by numeric estimated value, to the federal and non-federal interests.

Mitigation Plan is Woefully Inadequate

The DSEIS still estimates that nearly 450 acres of wetlands and 300 acres of submerged aquatic vegetation (SAVs) are expected to be impacted from changes in salinity, but, as stated above, we believe the extent of the damage may be much worse.

Much uncertainty exists as stated in the DSEIS Executive Summary:

“Based on hydrodynamic modeling performed to evaluate salinity changes associated with deepening the navigation channel, the recommended plan may cause average salinity levels in that portion of the St. Johns River affected by the project to increase slightly, resulting in an up-river shift of salinity break-points. The expected effect of such changes would be a shift in wetland species composition and changes in distribution of wetland communities, although uncertainty exists about the magnitude of both the effect of deepening on salinity and the ecological response to changes in salinity. Such changes may also affect other ecological resources, including fish and invertebrate species found in the river.” (p. vi)

“Recognizing this uncertainty, the project delivery team adopted a conservative approach in both the evaluation of impacts and developing a mitigation plan offsetting the predicted impacts. The recommended plan includes mitigation measures such as land preservation. Monitoring will be conducted to assess impacts and mitigation projects will be adaptively managed to ensure success. Collectively, these measures insure that adverse effects resulting from project implementation will be offset by improvements in the St. Johns River watershed.” (p. vi)

The May 2013 mitigation plan to offset the anticipated damage to the river was woefully inadequate. The previously proposed mitigation plan would simply not have reversed the harm that will result from the dredging nor provide a net benefit or improvement to the St. Johns River.

Now, the USACE has slashed the mitigation budget from \$80 million to \$27 million with \$23 million focused on monitoring. The new DSEIS does propose an Adaptive Management Plan. However that plan will only be triggered and implemented if it is proven that damage results from the dredging project, and not sea level rise or other influencing factors, which USACE admits would be extremely difficult to discern.

In addition, the DSEIS should address cumulative impacts and unintended consequences of past projects.

Lack of Review of Cumulative Impacts

Previous dredging and navigational changes to the St. Johns River have progressively increased the salinity levels, degraded water quality and accelerated shoreline erosion. These unintended, long-term "cumulative impacts" have not been adequately considered in past studies. The USACE DSEIS must address cumulative impacts on the river system and potential mitigation options, not just the incremental difference between the existing channel and the proposed deeper channel.

The USACE has worked to identify and correct the unintended consequences that South Florida flood drainage canals and related land development efforts have had on the Florida Everglades ecosystem. A comparable effort is needed to help maintain important tidal and freshwater ecosystem functions in North Florida and the St. Johns River.

NEPA Requires a Full Assessment of Cumulative Impacts

Under NEPA, USACE is required to thoroughly assess the cumulative effects of the proposed deep dredge. NEPA's implementing regulations define cumulative effects as "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." 40 C.F.R. §1508.7

DSEIS Fails to Consider Alternatives

The DSEIS is fundamentally deficient in consideration of other engineering alternatives for project design. It is acknowledged that the overall length of the considered deepening project was initially decreased from about 20 miles to 13 miles at the outset of the evaluation. However, there is no discussion of other possible, shorter project lengths that may further reduce environmental impacts and costs while achieving optimum benefits. There is no discussion of alternative construction methods that may mitigate long-term environmental impacts. Overall, the engineering analysis was limited to a narrow range of alternatives: i.e., deepening to various depths along a fixed channel and quasi-fixed methods of dredge disposal.

It is not clear whether the existing clearance under the Broward (Dames Point) Bridge, between the Dames Point and Blount Island terminals, was considered for the report's projected vessel transits and cargo volumes. It is our understanding that after the Bayonne Bridge at the Port of New York & New Jersey is raised, Jacksonville's Dames

Point Bridge – with less than 175-ft underspan clearance -- would be the lowest span for the major East Coast ports. The air draft (height) limitations for most of the Post-Panamax ships are 190 ft. Light-loading of Post-Panamax ships to accommodate the proposed 45- to 47-ft channel depth at Jacksonville, or awaiting passage at high tide, increases the probability that the larger vessels may not clear under the Dames Point Bridge.

Risky Fast-Tracking

A major reason that the analysis has so far been inadequate and incomplete is because President Obama issued a "We Can't Wait Initiative" in July of 2012 that expedited the study for Jacksonville Harbor. This decision dramatically reduced the study schedule by more than a year, providing the Corps with much less time to sufficiently evaluate this complex issue and jeopardizing the reliability and thoroughness of the analysis. We believe the President has made a significant mistake by fast tracking this critical decision when so much is at stake for the St. Johns River and the communities of Northeast Florida.

The DSEIS states the following:

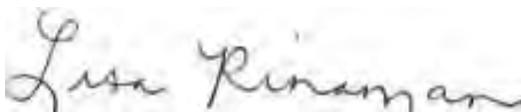
“The six step planning process was modified with incorporation of the 3x3x3 SMART Planning Charette and the President’s “We Can’t Wait Initiative” which resulted in an accelerated study process requiring detailed evaluation of remaining activities and the associated risks in reducing the level of detail evaluated during the feasibility study phase.” (p. 7)

This fast tracking combined with the recent federal government shutdown puts the St. Johns River and the communities of Northeast Florida at risk.

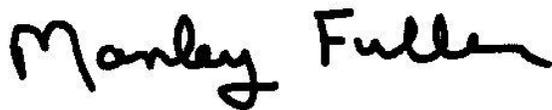
We urge the Army Corps of Engineers to resolve our stated concerns and those of agencies and other stakeholders and to request an extension to provide adequate time to complete a thorough and sufficient analysis. If the above issues are not adequately addressed and resolved, St. Johns Riverkeeper may be forced to take legal action to avoid potential harm to the St. Johns River due to the inadequacies of the DSEIS.

We can wait. We must get it right.

For the River,



Lisa Rinaman
St. Johns Riverkeeper



Manley Fuller
President
Florida Wildlife Federation



July 31, 2013

Mr. Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District
Jacksonville, FL 32202

RE: Draft Supplemental Environmental Impact Statement for the Jacksonville Harbor Navigation Study

Dear Mr. Stodola,

St. Johns Riverkeeper (SJRK) has reviewed the Draft Supplemental Environmental Impact Statement (DSEIS) for the Jacksonville Harbor Navigation Study conducted by the U.S. Army Corps of Engineers (USACE). The following comments were developed in partnership with the following members of our volunteer review team:

- Dr. Kevin Bodge – Senior Vice-President of Olsen Associates, Inc
- Dr. David Jaffee – Professor of Sociology at the University of North Florida
- Dr. Quinton White, Jr. – Executive Director of the Marine Science Research Institute and Professor of Biology and Marine Science at Jacksonville University

St. Johns Riverkeeper has serious concerns that the U.S. Army Corps of Engineers:

- Underestimates the environmental impacts
- Overstates the economic impacts
- Proposes a mitigation plan that is woefully inadequate
- Denies the public of the opportunity to engage in meaningful public participation due to the lack of detail, depth of analysis, and critical information and data that is missing from the DSEIS
- Has not completed numerous studies required for a thorough evaluation

If the above concerns are not sufficiently addressed, St. Johns Riverkeeper will be forced to take legal action to avoid potential harm to the St. Johns River due to the inadequacies of the DSEIS and the significant uncertainties that still remain. Unfortunately, due to the expedited time-frame established by the "We Can't Wait Initiative", we are concerned that the USACE may not have enough time to resolve these deficiencies and the shortcomings of the DSEIS analysis.

The purpose of the DSEIS is to address the potential environmental impacts and economic vitality of the proposal to dredge the existing channel of the St. Johns River from 40 to 47-feet, which is the Locally Preferred Plan (LPP). Thirteen miles of the river would be deepened, from the mouth of the St. Johns River to just west of the Dames

Point Bridge near Blount Island, and two areas of the channel close to Chicopit Bay and Ft. Caroline National Memorial would also be widened. This would result in the removal of 18 million cubic yards of dredged material. In addition, up to 56 million cubic yards of dredge material would be removed from annual maintenance dredging over the 50-year life of the project. The report estimates the cost of the dredging project at \$733 million, including nearly \$80 million for mitigation of anticipated environmental impacts.

Unfortunately, the fast-tracked DSEIS fails our river and our community in the following ways:

Underestimates the Environmental Impacts

Salinity

The DSEIS fails to adequately account for the impacts associated with salinity increases that will occur as a result of the channel deepening. The DSEIS minimizes the ecological shift in species, populations and communities that will occur. The DSEIS contains inconsistencies and questionable projections regarding the potential impacts, calling into question the accuracy of the models used to make the predictions. For instance, the DSEIS projects the exact same acreage of wetlands and Submerged Aquatic Vegetation (SAV) that will be impacted by the changes in salinity for every depth analyzed from 44 to 50 feet, despite acknowledgement that "the magnitude of upstream salinity movement increases with increase in project depth."

The DSEIS mostly dismisses the predicted increases in salinity as "not significant" with little or no justification. Instead, the results are presented in manner and graphics by which the impacts are difficult to discern or appear negligible. For example, future without- and with-project salinity levels are described in approximate ¼-mile long average blocks that segregate the frequency of high-tide saline levels in 2% to 5% occurrence-bins. In this way, small changes are not discerned -- such as an increase in salinity occurrence from, say, 21% to 25%, which can be very significant to local biota. Indeed, comparison of the >1 part-per-thousand salinity frequency between the No-Action and 50-Ft Project scenarios suggests essentially no change, excepting three cells in the general vicinity of Shands Bridge. In contrast, it is improbable that an increase of channel depth from 40-ft to 47-ft -- and the consequent increase in the upstream saline wedge -- would not increase the saline levels at Black Creek and Julington Creek, located closer to the dredging project. No such increases are clearly identified or explained in DSEIS. However, despite downplaying and minimizing the impacts of salinity, the DSEIS does acknowledge that significant uncertainties remain: "With any of the project alternatives, the southern boundary of wetlands with FLUCCS classification 'saltwater marshes' should shift upstream, but the magnitude of change cannot be reliably predicted."

The DSEIS also dismisses project-related increases in salinity as being much smaller than those natural variations in salinity that the river naturally experiences. While it is true that salinity levels naturally change by drought, etc., these changes are acute and the river biota is adapted to them. The project-related increases are chronic; i.e., long-term. They shift the baseline condition to a higher-saline regime such that acute, short-term natural changes in salinity have greater impact. The DSEIS report even

acknowledges that forested wetlands are impacted by very small changes in salinity and those impacts may take years to see.

It is not scientifically meaningful or publicly responsible to normalize the dredging's long-term predicted changes by natural short-term changes, particularly in regard to salinity and water levels.

- “The deepened channel will result in the movement of higher saline water farther upstream. The magnitude of upstream movement increases with increase in project depth. The change in salinity will shift the northern boundary of SAV upstream.” (p. 279, PDF p. 302)
- “Salinity changes may modify the biological community, altering or eliminating vegetative composition (i.e. SAV or wetlands) and thus altering or eliminating habitat for species using those communities. Species composition may in general shift to more salinity tolerant species. Species that depend on specific salinities in specific habitats may encounter inappropriate salinities in otherwise acceptable habitat or if using salinity as a cue to seek specific habitats, move away from appropriate habitat if salinity optimum for the species under consideration occurs in less of the optimum habitat. Changes in the length of time water remains in the river system may change phytoplankton dynamics and may slightly increase the potential for algal bloom development.” (p. 195, PDF p. 218)
- “Potential fisheries impacts to freshwater species may occur due to salinity changes that reduce freshwater and low salinity zones and increase higher salinity zones. Losses of SAV from increased salinity will result in lower quality habitat for a wide variety of fish species. Changes in circulation patterns may result in potential for phytoplankton blooms and resultant declines in dissolved oxygen (SJRWMD Chapter 12).” (p. 221, 244)
- “Predicted indirect effects due to salinity change would impact an estimated 296.60 acres of SAV. Mitigation and monitoring would be performed...Predicted indirect effects due to salinity change would impact an estimated 448.95 acres of wetlands.” (pp. 136-137, PDF pp. 159-160) The exact same impacts are anticipated for 44, 45, 46, 47, and 50 feet.
- When potential water withdrawals and anticipated sea level rise are also factored in, “there would be a substantial shift of the salinities further upstream in the St. Johns River, converting approximately 4 miles of transitional zone into salt marsh. Additionally, a considerable area of freshwater swamp, from River Mile 50 to 55, would experience higher salinity frequencies, causing changes to the soil substrate, vegetative composition, and habitat utilization among others.” (p. 236, 259)
- “Taylor Engineering Sub-Contractor: Forested wetlands are impacted by very small changes in salinity, and may take years to see. RESPONSE: The USACE concurs and will continue to evaluate how the proposed deepening may affect wetlands.” (p. 315, 338)

In a 2008 Deposition (DOAH Case No.: 08-1316, 08-1317, 08-1318), St. Johns River Water Management District's Dr. Peter Sucsy stated the following:

The results, to date, indicate that a proposed channel deepening of five feet has a greater increase in salinity than the full withdrawal.

The channel dredging of five feet... had a larger effect of increasing salinity in the river.

This is contrary to the assessments of the DSEIS that indicates that water withdrawals would result in a much more significant impact on salinity than dredging.

Residency Time

The St. Johns is already plagued with excessive nutrient loading and frequent algal blooms. Harbor deepening could exacerbate this problem, making it more difficult to restore the balance of flora and fauna in the river. As stated in the DSEIS: "Increases in water age may encourage algal bloom development." (p. 137, 160) "Changes in the length of time water remains in the river system may change phytoplankton dynamics and may slightly increase the potential for algal bloom development." (p. 195, 218)

The National Parks Service also raises a similar concern:

Page 182, Section 7.2.6.3, Other Water Quality

Water residence time in the St. Johns River and its tributaries is a concern for NPS management within the Preserve. Results from past studies suggest that flushing of this system is slow. Because of the protracted flushing time within the Preserve, preventing the inflow of contaminants and excess nutrients is critical to the long-term management and protection of park resources. In the table on Page 133 at the Locally Preferred Plan/Tentatively Selected Plan (47ft) it states: "Deepening would result in... risk to water residence time." Any increase in water residence time could be damaging to park resources, especially in the case of, for example, a chemical spill or a Harmful Algal Bloom event.

Threatened and Endangered Species

"The U.S. Fish and Wildlife Service have recently stated that the potential use of confined blasting techniques to deepen the Federal channel is a concern. Also, in early scoping, the Florida Fish and Wildlife Conservation Commission stated that the no-action alternative should be selected because they felt that threatened and endangered species could not be adequately protected during blasting operations." (p. viii, 10) The DSEIS acknowledges that dredging to 47 feet "would take longer to construct and may require more blasting, which would increase the risk to threatened and endangered species." However, we believe that the report goes on to downplay and potentially underestimate the potential impacts to threatened and endangered species, such as the West Indian Manatee, and other wildlife.

Sedimentation

The proposed deepening – be it at 45-ft or 47-ft -- will clearly have a significant impact upon the river's hydraulic and sedimentation patterns which is not adequately discussed in the DSEIS. For example, by increasing the hydraulic efficiency of the channel in the center of the river, both the tidal and riverine flow become increasingly concentrated to the middle of the river, further changing the flow patterns along the banks and side-channels. This effect is not adequately examined or described in the DSEIS. The cell size of the numerical models is, as admitted in DSEIS, too large to discern changes in currents at specific locations; and the report principally considers changes in

sedimentation and flow that affect navigation – not the overall condition of the river, particularly the banks and streams.

Storm Surge

The DSEIS does not describe the increase in water levels associated with storm surge. It indicates that tide range within the river may increase up to 0.4 feet in select locations. The DSEIS states that these storm-surge model results will be provided separately and “preliminary results indicate ...no significant increase in peak storm surge elevations”. With no results provided, it is not possible to judge the meaning of “significant”. Even slight increases in storm water elevation beyond ambient conditions will increase flooding and damage along the low elevation lands that bound much of the river and its tributaries. The suggestion that a significant increase in hydraulic efficiency of the channel (from 40 ft to 47 ft) would not increase storm surge elevation is wholly counter-intuitive to those with practical knowledge of the river.

Aquifer Impacts

The DSEIS's claims that the proposed deepening will not affect the surficial aquifer is based upon a study conducted by the USGS in 1981 – thirty two years ago – which is claimed to be included in the report, but it is not. An update of the study is said to be in preparation, but neither its scope nor findings are available. The National Park Service (NPS) also expressed concerns that “deepening of the channel may impact the surficial aquifers and indirectly affect the coastal marsh plant community (change community composition and diversity of plants), streams and tidal creeks.” NPS continues stating that “saltwater has a higher content of dissolved salts and minerals; it is denser than freshwater, causing it to have higher hydraulic head than freshwater. The higher pressure and density of saltwater causes it to move at a faster rate into freshwater aquifers where mixing occurs through dispersion and diffusion.”

Shoreline Erosion

The DSEIS claims that there will be no increase in ship wake or riverbank erosion. This is based upon the “design vessel” which apparently was not changed to reflect the deeper channel. Indeed, if a primary purpose of the dredging is to allow larger ships to navigate, then larger ships and larger ship wake should be predicted. For all other factors remaining essentially the same (such as draft-to-depth ratio, speed, etc.), a 30% increase in ship length will likely result in a 60% to 80% increase in ship wake. This will be a substantial increase in ship wake and consequent bank erosion and property damage. The erosion will lead to further increases in riverbank armoring – which further decreases natural habitat. None of this is described in the DSEIS. This is a major shortcoming of the DSEIS which testifies clearly to the inappropriate speed -- and consequent lack of due diligence – applied to the preparation of this report. SJRK concurs with the following concerns stated by the National Parks Service:

Page 112, Public and Agency Concerns

The NPS has expressed concerns about the rate of shoreline erosion along the St. Johns River at Fort Caroline and impacts to visitor facilities (trails, boat ramp, observation deck and exhibits) and natural resources (loss of mature oak and pine trees to erosion and saltwater intrusion in the root zone). This concern has been shared with the USACE in regards to rehabilitation of the training wall in reach 6. (Note this issue was raised during the Feb 7, 2008 feasibility scoping meeting, and on page 308.) Please revise the report to describe plans to rehabilitate the training walls and alternative measures to prevent or mitigate

additional shoreline loss from the proposed deepening, widening and maintenance dredging on NPS resources at Fort Caroline National Memorial in reach 6.

**Page 139, Section 6.1, Description of the Tentatively Selected Plan (TSP);
See also Figure 24**

St. Johns Bluff Reach (approximate River Miles 7-8) is one of the sections of the St. Johns River that is proposed for widening within the Tentatively Selected Plan. Both sides of the channel would be widened by varying amounts up to 300 ft. The Fort Caroline area of the Preserve is located along the south bank of the river in that immediate area. The NPS is concerned that the widening of the south side of the channel, combined with the deepening of the channel will increase shoreline erosion along the southern bank of the St. Johns River and adversely impact the Preserve's natural and cultural resources. Have any of the modeling studies performed to date considered this potential impact? The NPS requests that the USACE address this concern during ongoing project discussions between the two agencies, and as appropriate, in the Final Draft of the GRR II and FSEIS.

Offshore Disposal Expansion

The proposed offshore disposal area is not clearly defined in the DSEIS. The present offshore disposal area has less than 4 million cubic yard capacity, yet the project requires disposal of about 18 million cubic yards. In addition, up to 56 million cubic yards of dredge material would be removed from annual maintenance dredging over the 50-year life of the project. A proposed expansion of the offshore disposal area is not yet approved, and its draft design is sited very close to the existing offshore sand borrow area for the Duval County federal shore protection project.

Air Quality

We are concerned that the DSEIS may have underestimated the potential impacts to air quality, in particular ozone concentrations. Currently, the City of Jacksonville is apparently just under the EPA limits of 75 parts per billion (ppb) at approximately 73 ppb, with the primary contributions coming from mobile sources. However, the EPA is considering the lowering of these limits to 65 or 70 ppb in the near future. These changes would make it extremely difficult for Jacksonville to remain in compliance, especially with a significant increase in trucks entering and leaving our county as a result of projected increases in cargo. Noncompliance could jeopardize federal funding for local transportation projects, in addition to water and sewer infrastructure critical to the protection of the St. Johns River and our aquifer. Any increase in air pollutants resulting from the larger post-Panamax ships and the increase in cargo truck traffic could also adversely impact the water quality, fish, and wildlife of the St. Johns and its tributaries.

Overstates the Economic Impacts

Even though the economic piece is not SJRK's primary focus, we must get an accurate picture of the economic benefits that could be reasonably expected, if we, the community, are to adequately assess the pros and cons.

SJRK has concerns that the projected economic benefits by JAXPORT may be overstated, the USACE has already determined that minimal economic benefits would

be gained at a substantial cost by going from 45 to 47-feet and that the DSEIS does not address on-going maintenance costs.

Job Numbers Overstated

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The actual numbers for new port jobs according to JAXPORT's consultant Martin Associate are:

- 45 foot = 841 jobs in 2035
- 47 foot = 5,587 jobs in 2035

USACE accepts and restates JAXPORT numbers provided by Martin Associates even though the job estimates:

- Are not peer-reviewed or subject to independent assessment as to their validity
- Are not backed up by a detailed economic study – *no report is available providing the techniques used to derive these estimates*

USACE Determined Minimal Economic Benefit at 45 feet

USACE determined that the 45-foot depth provides the greatest net benefit. USACE determined that the National Economic Development (NED) plan is 45-feet, "depth where the net benefits are the highest." The non-federal sponsor, JAXPORT, requested a locally preferred plan (LPP) of 47 feet. The estimated average annual benefits would increase by \$2.1 million by going from 45 to 47-feet, while the estimated average annual costs would increase by \$9.6 million.

On-going Maintenance Costs Ignored

The DSEIS does not describe the projected future maintenance costs of the project; and in particular, it does not describe the anticipated federal versus non-federal future annual maintenance costs. These costs are said to be included in the Economic Appendix, but they are not. A generic description of the federal and non-federal cost-share percentages is presented in the report, but it is not clear how these will specifically apply to the NED, LPP and TSP alternatives. There is no fiscal description of the existing approximate annual costs to the Government or the Local Sponsor in the without- and with-project conditions.

Similarly, it is not clear whether sediment that shoals the bottom 2-feet of the Locally Preferred Project (LPP) would be a total non-federal fiscal responsibility – given that the LPP is 2-feet deeper than the NED project. For example, when an authorized military channel is deeper than an authorized civil-works channel, the military is responsible for the costs of dredging its channel that is deeper than the civil-works channel. The report does not clarify if this is, or is not, the case; and as described above, it gives no projection as to future maintenance costs and their specific assignment, by numeric estimated value, to the federal and non-federal interests.

Mitigation Plan is Woefully Inadequate

The DSEIS estimates that nearly 450 acres of wetlands and 300 acres of submerged aquatic vegetation (SAVs) are expected to be impacted from changes in salinity, but, as stated above, we believe the extent of the damage may be much worse.

However, the mitigation plan to offset the anticipated damage to the river is woefully inadequate and practically non-existent. The suggested mitigation plan will simply not undo or offset the harm that will result from the dredging nor provide a net benefit or improvement to the St. Johns River.

Instead, the plan recommends monitoring without required corrective actions, nutrient removal projects that fulfill a small percentage of existing regulatory obligation mandated in 2008, the purchase of mitigation bank credits resulting in a net loss of wetlands, and the purchase of some conservation lands of unknown quality or location.

- Monitoring is not mitigation and no amount of monitoring can replace the functional loss of wetlands and SAVs.
- USACE proposes to provide funding for 5% of the agriculture allocation of the reduction of nutrients mandated by the 2008 Lower St. Johns River Basin Management Action Plan which is an existing regulatory obligation to counter nutrient pollution not the negative impacts of dredging. The DSEIS also states "A direct correlation between nutrient reduction and the benefits to *V. americana* (SAV) has not been determined."
- Buying into a mitigation bank does not adequately offset the environmental impact and loss of ecological function and ultimately results in a net-loss of wetlands.
- Purchase of upland conservation lands can be beneficial to the community as a whole but does not provide any functional replacement of wetlands lost as a result of this project. In addition, potential conservation lands have not yet been identified, limiting our ability to evaluate the effectiveness of this component of the plan.

Restoration of the Ocklawaha River has the potential to provide meaningful mitigation. However, the USACE has elected to avoid restoration in favor of ineffective options. We strongly recommend the USACE to reconsider the restoration of the Ocklawaha River as a cost-effective mitigation tool that has numerous studies demonstrating the significant potential benefits to the St. Johns River system.

Critical Information is Missing for the DSEIS/Undermines Public Participation

- Modeling of fish and macroinvertebrate communities
- Water quality modeling
- Tributaries modeling
- Salt marsh modeling
- Groundwater report prepared by the U.S. Geological Survey
- Hydrodynamic modeling
- Storm surge modeling
- Coastal modeling
- Ship wake modeling

The DSEIS lacks critical analysis and data that is essential to the decision-making process. This missing information strips the public of the opportunity to engage in meaningful public participation.

In addition, the DSEIS is fundamentally deficient in consideration of other engineering alternatives for project design. There is no discussion of alternative construction methods that may mitigate long-term environmental impacts. These methods might include disposal of dredged material to restore riverbanks, create habitat islands, infill older and unused dredged channels, or possibly create sills upstream of the deepening to reduce saltwater wedge propagation. It is suggested that sills may have been considered, but probably within the vertically mixed waters upstream of the downtown area where sills may be of little benefit. Overall, the engineering analysis was limited to a narrow range of alternatives: i.e., deepening to various depths along a fixed channel and quasi-fixed methods of dredge disposal from about 20 miles to 13 miles at the outset of the evaluation; however, there is no discussion of other possible, shorter options.

It is not clear whether the existing clearance under the Broward (Dames Point) Bridge, between the Dames Point and Blount Island terminals, was considered for the report's projected vessel transits and cargo volumes. It is our understanding that after the Bayonne Bridge at the Port of New York & New Jersey is raised, Jacksonville's Dames Point Bridge – with less than 175-ft underspan clearance -- would be the lowest span for the major East Coast ports. The air draft (height) limitations of the Panamax ships are 190 ft. Light-loading of post-Panamax ships to accommodate the proposed 45- to 47-ft channel depth at Jacksonville, or awaiting passage at high tide, increases the probability that the larger vessels may not clear under the Dames Point Bridge.

Risky Fast-Tracking

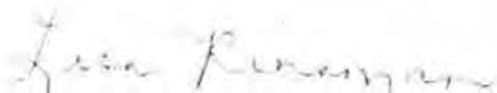
A major reason that the analysis has so far been inadequate and incomplete is because President Obama issued a "We Can't Wait Initiative" in July of 2012 that expedited the study for Jacksonville Harbor. This decision dramatically reduced the study schedule by more than a year, providing the Corps with much less time to sufficiently evaluate this complex issue and jeopardizing the credibility of the analysis. We believe the President has made a significant mistake by fast-tracking this critical decision when so much is at stake for the St. Johns River and the communities of Northeast Florida.

This fast-tracking puts the St. Johns River and Northeast Florida at risk.

We urge the Army Corps of Engineers to address and resolve our stated concerns. If the above issues are not resolved, St. Johns Riverkeeper will be forced to take legal action to avoid inevitable harm to the St. Johns River due to the inadequacies of the DSEIS.

We can wait. We must get it right.

For the River,



Lisa Rinaman
St. Johns Riverkeeper

June 27, 2013



Mr. Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District
Jacksonville, FL

RE: St. Johns River Proposed Dredging

Dear Mr. Stodola,

The Army Corps of Engineers (ACOE) has been studying the proposal to dredge the existing channel of the St. Johns River from 40 to 47-feet. Thirteen miles of the river would be deepened, from the mouth of the St. Johns River to just west of the Dames Point Bridge near Blount Island, and two areas of the channel close to Chicopit Bay and Ft. Caroline National Memorial would also be widened. This would result in the removal of 18 million cubic yards of dredged material. In addition, up to 56 million cubic yards of dredge material would be removed from annual maintenance dredging over the 50-year life of the project.

On May 31, the Corps released the Draft Environmental Impact Study addressing potential impacts, such as increased salinity farther upstream, shoreline erosion, more algal blooms, and the loss of wetlands and habitat. The report estimates the cost of the dredging project at \$733 million, including nearly \$80 million for mitigation of anticipated environmental impacts.

St. Johns Riverkeeper has serious concern that ACOE is stripping us of the opportunity to engage in meaningful public participation due to the amount of critical information missing from the DEIS including:

- modeling of fish and macroinvertebrate communities
- water quality modeling
- tributaries modeling
- salt marsh modeling
- groundwater report prepared by the U.S. Geological Survey
- hydrodynamic modeling
- storm surge modeling
- coastal modeling
- ship wake modeling

The report lacks critical analysis and data that is essential to the decision-making process. In addition, some conclusions are vague, some concerns are not even addressed.

St. Johns Riverkeeper, Inc.
2800 University Boulevard N.
Jacksonville, Florida 32211
904.256.7591
www.stjohnsriverkeeper.org

The information this is included in the DEIS underestimates the environmental impacts, overestimates the local economic impacts and does not mitigate for any long-term damage that may happen to our river.

St. Johns Riverkeeper has serious concerns about the harm that may occur to the St. Johns from the dredging and blasting that will be necessary to remove rock along some of the river bottom.

The Corps report estimates that nearly 500 acres of wetlands and 300 acres of submerged aquatic vegetation (SAVs) are expected to be impacted from changes in salinity, but we believe the extent of the damage may be much worse. The U.S. Fish and Wildlife Service also recently weighed in expressing concerns regarding potential impacts to threatened and endangered species from the blasting that will take place to deepen the river.

In addition, the mitigation plan to offset the anticipated damage to the river is woefully inadequate. The suggested mitigation plan will simply not undo the harm that will result from the dredging nor provide a net benefit or improvement to the St. Johns River. Instead, the plan recommends monitoring without required corrective actions, nutrient removal projects that fulfill a small percentage of existing regulatory obligations mandated in 2008, the purchase of mitigation bank credits resulting in a net loss of wetlands, and the purchase of some conservation lands of unknown quality or location.

Even though the economic piece is not our primary focus, we must get an accurate picture of the economic benefits that could be reasonably expected, if we, the community, are to adequately assess the pros and cons. We have concerns that the projected economic benefits by JAXPORT may be overstated, and the Corps has already determined that minimal economic benefits would be gained at a substantial cost by going from 45 to 47-feet.

A major reason that the analysis has so far been inadequate and incomplete is because President Obama issued a "We Can't Wait Initiative" in July of 2012 that expedited the study for Jacksonville Harbor. This decision dramatically reduced the study schedule by more than a year, providing the Corps with much less time to sufficiently evaluate this complex issue and jeopardizing the credibility of the analysis. We believe the President has made a significant mistake by fast tracking this critical decision when so much is at stake for the St. Johns River and the communities of Northeast Florida.

We can wait. We must get it right.

For the River,

A handwritten signature in cursive script that reads "Lisa Rinaman".

Lisa Rinaman
St. Johns Riverkeeper

Stodola, Paul E SAJ

From: Lisa Rinaman [rowerinaman@gmail.com]
Sent: Monday, June 03, 2013 11:40 AM
To: Stodola, Paul E SAJ; Summa, Eric P SAJ
Cc: Orth, James C; John Ragsdale; Don Blanchard
Subject: GRR II/SEIS Public Comment Period Extension Request

Good morning.

I am writing to formally request the U.S. Army Corps of Engineers (USACE) extend the public comment period regarding the draft Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement (GRR II/SEIS) for the Jacksonville Harbor Navigation (Deepening) Study, Duval County, Florida.

The GRR II/SEIS was made available for public review on May 31, 2013. The public was offered a standard public review process of 45 days. The minimum public review period began on Friday, May 31 creating a deadline for public comment by July 15, 2013.

The GRR II/SEIS has been fast-tracked potentially jeopardizing the integrity of the process. We continue to be concerned regarding the fast-pace of this critical study.

On today's public conference call, USACE staff commented that there is still "work to be done" while several federal and state agencies voiced their concern regarding important tributary modeling data that is not yet available. In fact, the assessment of dredging impacts to Northeast Florida tributaries is not expected until late June or July

Federal and state agencies need time to review all components of the GRR II/SEIS.

The public needs adequate time to review, consume and discuss the thousands of pages of information provided in order to productively participate in the public process.

We request USACE to extend GRR II/SEIS Public Comment Period to the maximum amount of time available.

Please respond to let us know when we can expect your decision regarding this request.

Thank you.

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For the River!

Lisa Rinaman
St. Johns Riverkeeper
lisa@stjohnsriverkeeper.org <<mailto:lisa@stjohnsriverkeeper.org>>
(904)509-3260



Dear Mr. Stodola:

Sierra Club and others are concerned “they will build it and they [won’t] come”. We will incur environmental impacts, spend \$1 billion and they will still not accommodate Post Panamax ships because of logistical barriers at the outset.

The Jaxport dredging proposal indicates that they will dredge 2.3 miles west of the Dames Point Bridge which indicates that ships are expected to traverse under the bridge.

Dames Point Bridge is 174’ (EIS pg 16) and newer cruise ships exceed 185’-190’ and growing. The Emma Maersk has a 191’ air draft. The mean average tidal range is 3.42’ (EIS Section 7.2.3) . A few references to support the air draft issue:

Paul W. Stott, from the School of Marine Sciences and Technology, Newcastle University, Newcastle United Kingdom, in a paper* presented to the Low Carbon Shipping Conference in 2012 states that old Panamax and new Panamax ships have a 57.91 meter air draft which is 189’.

Bryants Maritime Marine Consulting firm states** that any bridges less than a 200’ air draft will be problematic for any port which aspires to be a hub in the post Panamax era.

Raising the Dames Point bridge will cost \$.8-1.2 million based on other bridge projects. This would double the already prohibitive cost of the dredging project.

How does Jaxport propose to address this discrepancy?

Thank you for the opportunity to comment on the dredging project.

Janet L. Stanko, chair
Sierra Club, Northeast Florida Group

*<http://shippingresearch.files.wordpress.com/2012/09/lcs-2012-paper-paul-stott-revison-a-sept-1012.pdf>

**<http://www.brymar-consulting.com/wp-content/uploads/MREN/MREN100700.pdf>

Sierra Club Comments on the on the 2013 USGS Report on the Impact of Dredging of the St. Johns River

Sierra Club Northeast Florida Group is deeply concerned about the impact of the Jaxport dredging and related blasting on our water supply.

This comment will focus on the USGS assessment of the potential impact of dredging and blasting on the Hawthorn Aquifer.

SIGNIFICANCE OF THE HAWTHORNE AQUIFER:

The USAC report considers the Hawthorn Aquifer of northeast Florida as a confining unit, using old USGS and SJRWMD studies. In northeast Florida, new research* by Dr. Vija Satoskar, Ph.D., P.G., shows that the Hawthorn is primarily an aquifer that may be, locally, hydraulically connected with the Floridan Aquifer which is the drinking water resource for the region.

Historically, Hawthorn was considered as the confining unit that overlies our precious potable water resource, the Floridan Aquifer. Instead, it is a semi-confining unit in most of Florida, except in the southwest (which SJRWMD acknowledges) and the northeast, where it has certainly aquifer characteristics. The geological environment that is responsible for providing the Hawthorn its aquifer characteristics in the northeast Florida is its unique structural framework. On the west, it has the Ocala uplift-related platform; in the north, it has the Southeast Georgia Embayment- the deepest offshore rift; and throughout it has numerous north-trending normal faults creating sub-parallel rift valleys, which is a typical of a passive continental margin model i.e. the East Coast.

The Hawthorn is a complex deltaic deposit, primarily consisting of terrestrial sands, silts and clays, intermingled with shallow marine carbonates (limestones/dolomites). Normally, a deltaic deposit consists of low-energy fine sediments and can be hydraulically confining. But due to northeast Florida's unique geology, the approximately 25 million old streams encountered steeper gradients depositing high-energy, coarser clastic sediments thus, giving the Hawthorn of northeast Florida its aquifer characteristics.

The Hawthorn Aquifer in northeast Florida has been "neglected" because just below lies one of the most prolific aquifers in the country. The upper Floridan Aquifer (Ocala limestone) is so productive that all you need is to drill into it, in order to get the water you desire. Given the presence of such a prolific aquifer in near-proximity, the Hawthorn remains "neglected". There are many parts of country would dream to have just the Hawthorn for their drinking water needs. Further research is needed to realize the full potential of the Hawthorn. And certainly as the Floridan Aquifer becomes depleted, the Hawthorn can be considered as a source of supplemental potable water resource, as an alternative to the Floridan (FAS) Aquifer, extending the sustainability of FAS.

That is why we must guard against contamination; and the reason for Sierra's concern about the impact of dredging and blasting related to the proposed Jaxport dredging project.

COMMENT:

Sierra has reviewed the USGS study of modeling of impacts of blasting on the Hawthorne Aquifer <http://www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnvironmentalDocs/JAXDGR R2 A 04 Attachment A.pdf> . The following is our comments on the adequacy of this assessment.

HAWTHORN AQUIFER NOT THE SAME AS SURFICIAL AQUIFER

USGS Report statement: Proposed dredging operations pose no risk to salinization of the Floridan aquifer system; in the study area, the intermediate confining unit ranges in thickness from more than 300 to about 500 feet and provides sufficient hydraulic separation between the surficial and Floridan aquifer systems.

Sierra Comment: This report still considers the Hawthorn Aquifer (IAS) as a confining unit and not an aquifer which is an out dated and erroneous concept.

MODELING EFFECTS ON SALT WATER INTRUSION

USGS Report statement: The cross-sectional models developed in this study do not necessarily simulate actual conditions. Instead, the models were used to examine the potential effects of deepening the navigation channel on saltwater intrusion in the surficial aquifer system under a range of plausible hypothetical conditions. Based on simulation results of such conditions, the risk of dredging-induced saltwater intrusion affecting the water supply is estimated to be low.

Sierra Comment: Agreed that mathematical modelling does not simulate actual conditions. They should be used as guidelines only. Strength of any numerical simulation can be only determined by its confirmation by actual data collected through strategic monitoring points. (Effects of vertical fractures is not considered in this modelling study. Dredging which includes blasting of the limestone in some areas may create hydraulic connection with IAS and possibly with deeper FAS).

MONITORING

USGS Report statement: Groundwater levels and water quality would need to be monitored, particularly in the limestone unit along the northern periphery of the river channel near model cross section $d-d'$, to determine if any changes in salinity occur within the aquifer after the channel has been dredged

Sierra Comment: In the areas surrounding blasting, several monitoring wells into IAS and a few into FAS are needed to determine any short- and long-term adverse impacts due to blasting to our precious potable water resources. ACOE proposes no plan for monitoring. Our water supply must be protected. Sierra Club demands systematic short and long term monitoring of the deeper potable aquifers, i.e. Hawthorn and Floridan Aquifer, to assess any adverse impact to them due to blasting.

Thank you for the opportunity to comment.

Janet L. Stanko, chair
Sierra Club, Northeast Florida

*<http://www.coj.net/departments/neighborhoods/environmental-quality/environmental-symposium-2010.aspx>



Sierra Club Comments on the Army Corps of Engineers Environmental Impact Statement on the Dredging of the St. Johns River

Sierra Club Northeast Florida Group is deeply concerned about the environmental impacts of the proposed dredging, lack of ability to remediate problems that exceed our expectations, and significant unknowns related to environmental analysis work not done.

ENVIRONMENTAL IMPACTS

Independent evaluators Dr. Kevin Bodge, Ph.D., P.E., Senior Engineer & Vice-President of Olsen Associates, Inc.; Dr. Quinton White, Jr., Ph.D., Executive Director, Jacksonville University Marine Science Research Institute; Dr. David Jaffee, Ph.D., University of North Florida Professor of Sociology, have raised concerns which Sierra Club concurs with:

Blasting: It is uncertain what impact the blasting to deepen the river channel would have on the underlying rock formations, with the possibility of breaking through to the aquifer and causing an inflow of salt water into our limited water supply, and a greater outflow of fresh water to the ocean.

Salinity levels in the river would increase further upstream, thus impacting submerged aquatic vegetation, manatees and fish biomass.

Dr. White's main concern is salinity and its effects on the benthic community (bottom dwellers). Further, he noted concerns about marine mammals and grasses as well as flushing rates and impacts on the tributaries (many of which are silted up).

Sierra Club has a laser focus on sea level rise; and we recognize that sea level rise will exacerbate the salinity issue. We do not need to do a project that further raises the baseline salinity level that sea level rise will increase by an additional as yet unknown proportion.

Monitoring environmental impacts is not corrective action, and at best would be too little too late. Dr. White identified the proposed mitigation is limited basically to increased monitoring, but no reaction to bad results is planned (if we get readings of more impacts than presently anticipated, there's no plan B in the offing). There is no assurance that there would be a plan or funding for remediation.

Incomplete Environmental Studies: There are seven (7) additional environmental studies underway not yet ready for conclusion and public reporting--but no plan for further public comment after their release which may be a violation of NEPA.

The 7 studies not yet finished are part of a full report on environmental impact: Water quality, Tributaries, Salt Marsh, Ground water, Hydrodynamic modeling, Storm Surge & Sea-level Rise, Coastal Zone Impacts and Ship Wake. We can wait for more information and Sierra Club requests an opportunity for more public comment before decisions are made--we have to get it right.

Storm Water Levels: Kevin Bodge of Olsen Associates estimates a .4 foot of higher flows on high tides. Storm surges are not estimated; and increase in size of ship wakes and exacerbated riverbank erosion-- not being addressed in the study.

Air Emissions: Aside from general descriptive information about Jacksonville's air quality, the EIS has no evaluation of the impact of expansion of port activities on air quality. Ships burn high sulfur fuel and are a significant source of air pollution emissions in adjacent communities. According to a 2009 Congressional Research Service report for Congress <http://crs.ncseonline.org/nle/crsreports/10Jan/RL34548.pdf> : "In many cities, ships are now among the largest sources of air pollution. As Congress and the Administration turn their attention to climate change, there is also a growing recognition that marine vessels are an important source of greenhouse gas (GHG) emissions."

An analysis by Alexandra Spencer "Shipping, Air Quality and Health: An Analysis of the Proposed Jacksonville Port Authority Expansion" is attached. It provides a broader analysis and concludes that Jaxport expansion will adversely affect Jacksonville air quality and exacerbate the already high heart disease and lung cancer rates in Jacksonville.

An air quality assessment must be added to the ACOE Environmental Impact Statement related to the Jaxport expansion of port activities for Post Panamax ships.

ST JOHNS—AMERICAN HERITAGE RIVER AND AMERICA'S GREAT WATERS

The St Johns River has been dredged many times in the past. The channel differs greatly from its original trajectory between Jacksonville to its mouth in the ocean. So this is just another chapter in the changes to the river. Many folks may say "So what is the big deal now?"

We now know the impacts that dredging, dumping of pollutants, septic tanks and fertilizers has on the river and have invested many resources over the last 30 years to clean it up to its current status. Many people live on, recreate on or make their living on the river. We need to improve, not degrade our river. It is unconscionable to continue "business as usual" to exploit the river for the benefit of the few.

St Johns was designated an American Heritage River, and more recently America's Great Waters. These designations have made it possible to attract funding for cleanup. Sierra Club has stood with St. Johns Riverkeeper, St. Johns River Alliance, and other organizations to support cleanup projects, protective legislation, fight pumping proposals and oppose the Georgia Pacific dumping of toxins in the river. Despite challenges that still exist, the St. Johns has made steady progress from the conditions of the 1960's and 1970's. We see the dredging project as a step backwards.

ECONOMIC IMPACTS: We are just as concerned about the questionable economic benefit that would accrue from an expenditure of almost \$1 billion for dredging and construction in conjunction with the lack of estimates of what the maintenance would cost the taxpayers.

Number of Jobs: The jobs opportunity assessment seems dependent on one source, the industry-insider Martin Assoc. study. The concerns about direct vs. "supported" jobs that Dr. Jaffee outlined might be worthy to highlight: 540 to 3274 direct jobs at port by 2020; 841 to 5587 by 2035 VERSUS expansive references to 22,748 jobs at 45 ft (34,508 @47 ft) needs to be validated by more disinterested experts. We're getting inflated, not well substantiated numbers.

Quality of Jobs: Dr. Jaffee further comments typically over 60% of logistics jobs in Jacksonville pay in the \$25,000 range; packers and packagers earn about \$20,000. Under 2013 Health & Human Services federal guidelines, a family of 4 would in that income range would be categorized as poverty level and qualify for foodstamps, and other federal aid.

Public Cost vs Private Benefit: The public would bear the \$1 billion cost of construction, and unspecified maintenance for the port dredging, and public assistance programs for the majority of workers while the retailers would accrue the benefit of reduced transportation costs. That is assuming the unlikely case of Jacksonville being selected as a Post Panamax port, which these decisions are made by shippers, outside the control of Jaxport.

To look at it another way, is there a better way to spend \$1 billion, not undermine the St. Johns River, and still create jobs that provide a sustainable middle class income? We feel the environmental damage, public investment is not worth the gamble that Jaxport will attract enough business to justify the investment in the dredging project. The proposed St. Johns River Harbor Deepening Project should not move forward until all of the potential costs and environmental impacts have been thoroughly evaluated and the analysis of projected local economic benefits has been released to the public and independently peer-reviewed.

Sierra Club Northeast Florida Group appreciates the opportunity to submit these comments on the Jaxport Dredging Environmental Impact Statement.

Shipping, Air Quality and Health: An Analysis of the Proposed Jacksonville Port Authority Expansion

Alexandra Spencer, MPH Candidate University of North Florida

Introduction

When people speak of the global trade movement and the potential expansion of the Jacksonville Port Authority, or JaxPort as it will be referred to in this paper, the main topic of conversation is economics. The potential for jobs at the port, the growth of the areas, the billions of dollars that will need to be invested and the potential billions that will come in return. What seems to be neglected in these conversations is the potential cost to the health of those people living in the area. While health may not be the first issue, which comes to mind it is an important one. The increased shipping traffic along with the increased use of diesel trucks in the area, which would be associated with the expansion of JaxPort, would have a negative impact on the air quality of the area. Shipping and truck traffic combined is associated with 40 percent of the U.S. transportation green house gas emissions each year (EPA, 2002).

In the United States, The Clean Air Act, which was enacted in 1990 requires the U.S. Environmental Protection Agency to enforce air quality standards and to monitor and regulate emissions to make sure that companies are in compliance with the standards (USEPA, 2012). Unfortunately, many shipping lines get around these standards through less than adequate monitoring and because they spend much of their time in international waters (Weinhold, 2011). Currently ships coming into U.S. ports do not meet current U.S. air quality standards (Weinhold, 2011).

This paper will explore the impact that shipping has on air quality, the impact that decreased air quality has on human health and the potential remedial measures that could be put in place to ensure that this does not happen if the Jacksonville Port Authority decides to continue with the expansion of the port.

Air Quality and Health

Out door air pollution, specifically traffic related air pollution has been associated with increased infant mortality rates, and asthma and atopy in children in high traffic areas (Suwanwaiphatthana, Ruangdej, & Turner-Henson, 2010). It also shows correlations with lung disease, heart disease and cancer in adults. According to the Centers for Disease Control and Prevention (CDC) the top three leading causes of death in the United States for 2010 were heart disease, cancer and chronic lower respiratory disease (CLRD) (CDC, 2012).

It is known that shipping has been linked to increased mortality levels in coastal communities with an estimated 60,000 deaths per year from cardiopulmonary and lung cancer (Healy et al., 2009). Ships, while in port, burn residual fuel, which has higher sulfur content. Furthermore, smoke plumes from ships have been associated with increased levels of sulfur dioxide, nitrogen oxide, carbon monoxide, volatile organic compounds, black carbon and particulate matter in a sample site over 5 kilometers from the shipping traffic (Healy et al., 2009).

Expansion of ports in both Long Beach and Los Angeles, California has resulted in an increasing contribution to region's air pollution. It is estimated that eliminating ship traffic would decrease cases of asthma in Long beach, CA by 21

percent (not taking into account traffic-induced cases) (Garshick et al., 2008). Also, high levels of particulate matter and ozone exposure leading to substantial cardiovascular and respiratory disease mortality, large number of cardio-respiratory ER visits, asthma exacerbations and chronic bronchitis (Perez, et al., 2009). According to a study done in Southern California, \$1,250 in healthcare costs could be saved per person and \$66 Billion in the region if air quality were kept at the acceptable standards (APHA, 2012).

Heart Disease

Heart disease, also known as cardiovascular disease and coronary heart disease, is the leading cause of death in the United States, claiming 616,000 lives in 2008. Over one third of all adults (81.1 million people) in the country suffer from one form of heart disease (CDC). In Duval County, the age-adjusted death rate for heart disease was 1,532 people in 2010, a rate of 170.3 per 100,000 people (Florida CHARTS, 2012). This is higher than the Florida rate of 147.7 people per 100,000 (Florida CHARTS, 2012). While there are many contributing factors to the high rate of heart disease in the United States, the presence of particulate matter in the air is one of them.

In a study done by Huttunen et al. (2012) it is noted that particulate matter in the air is positively associated with increased rates of systemic inflammation in ischemic heart disease patients. In the study done in Finland, fifty-two elderly men with ischemic heart disease were followed for six months. At the end of the study it was found that there was a positive association between exposure to low levels of

particulate air pollution and concentrations of inflammation markers in the blood of the patients (Huttunen et al., 2012). Furthermore, there was a strong association found between inflammation rate and absorption. Overall, particulate matter from combustion engines such as traffic increased the rate of absorption (2012).

Respiratory Disease

Exposure to diesel exhaust has been associated with deteriorating lung function, allergies, asthma, and increased risk of lung cancer with those who breathe it (Poplawski, et al., 2011). Diesel engines are used as the main power source for most large vessels and produce carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, hydrocarbons, & particulate matter (2011). In coastal areas marine transport a large contributor. Furthermore, nearly 70 percent of ship emissions occur within 400 km of coastlines (Eyring et al., 2010). In port areas there is a combination of marine vessels and trucks, which contribute to the emissions.

CLRD also called chronic obstructive pulmonary disease (COPD) includes a number of lung diseases including chronic bronchitis and emphysema. Asthma is also included in the category of CLRD and is talked about separately in this paper. CLRD is defined by the American Lung Association and the National Institute of Health (NIH) as "an obstruction of airflow to the lungs, which makes it hard to breathe" (NIH, 2012). CLRD is a progressive disease, meaning it gets worse over time and can have symptoms such as a large production of mucus, wheezing, shortness of breath and chest tightness, among other symptoms (NIH, 2012). The main cause associated with CLRD is smoking but long term exposure to

environmental factors such as air pollution and other irritants is a contributing factor and a potential risk factor for certain populations.

Currently, death rates from CLRD in Duval County are already higher than the rate for the state of Florida. In 2010 the age-adjusted death rate from CLRD for Duval County was 50.4 per 100,000 with a total of 436 deaths and for the state of Florida it was 37.6 per 100,000 with a total count of 10,268 (Florida CHARTS, 2012). While this number may not seem high enough for concern, please note that it is not the current rate that is of concern in the situation but the potential for that rate to grow in direct relationship to the increased level of air pollution in the Duval County area that is the cause for concern.

Furthermore, in 2008 there were 23.3 million cases of asthma diagnosed in the United States (Mayer, 2012). This is more than double the number of cases diagnosed in the 1970s (2012). Asthma is the most common chronic disease found in children with 6.7 million children diagnosed as of 2007 and it is almost most prevalent in lower income and minority populations (2012).

Recent research suggests that traffic proximity is not only associated with severity and persistence of asthma in children but also with increased onset (Perez, et al., 2009). According to a recent study done in California, close proximity to heavy volumes of traffic and exposure to diesel exhaust from both automobile and shipping traffic alike are responsible for 6-9 percent of childhood asthma cases in the area (2009). Overall, there has been an increase in emergency room visits across the nation due to exasperated asthma that can be attributed to increased levels of particulate matter and ozone in the air (2009).

The rate for asthma related deaths in Duval County 2.1 per 100,000, while still low, is significantly higher than the state rate of 0.8 per 100,000. Also, while the state rate had decreased steadily over the past decade the Duval County rate had increased or stayed the same. An increase in air pollution in this area would only make this rate go up over time. (Florida CHARTS, 2012).

Lung Cancer

Approximately forty epidemiologic studies have described an association between exposure to diesel exhaust and lung cancer in certain professions: these include railroad, port and construction workers along with truck drivers (Garshick et al., 2008). In a retrospective cohort study of truck drivers from 1985-2000 a positive association was made between long-term exposure to diesel exhaust and increased rates of lung cancer mortality (Garshick et al, 2008). To that extent, vehicles manufactured before 2007 have greater mass emissions of respirable particles than those manufactured post 2007 (Garshick et al, 2008). Dock workers and long-haul drivers have been shown to have similar exposure rates to organic carbon compounds suggesting that both of these professions have similar exposure rates to gasoline fumes (Gamble, 2010).

As of 2011, every person in this country was at more than 10 times greater risk of getting cancer from outdoor air pollution than the EPA's goal of 1 in 1 million (Weinhold, 2011).

The trade off (environmental/economical):

In 1900 the leading causes of death in the United States were Pneumonia and influenza, Tuberculosis, and Diarrhea, enteritis and ulcerations of the intestine. In short, they were infectious diseases (CDC, n.d.). In 2010 the top three leading causes of death were heart disease, cancer and lung disease: chronic diseases (CDC, 2010). Health in the United States has made great strides on the issues pertaining to infectious disease. Unfortunately, this means now Americans are being plagued by chronic diseases instead and this is costly in another form. In 2008 \$7,538 per capita was spent on medical treatment in the United States (Ameringer, 2012). This is due to that rise in chronic disease. People may be living longer but they are living longer sicker. This estimate of cost is only expected to go up in the next years. In 2004, 44 percent, 141 million, of all Americans had been diagnosed at least one chronic condition (Ameringer, 2012). This number is expected to increase to 171 million by 2030 and most of these individuals are expected to suffer from more than one chronic illness (Ameringer, 2012).

For the past few decades the increase in National Health Expenditures (NHE) in the United States, as they relate to the rapid rise in chronic illness, has surpassed that of inflation (Kumar & Nigmatullin, 2010). Of this rise in NHE, the majority of the cost is going to treatment of chronic illness and disease (Kumar & Nigmatullin, 2010). Chronic illness is not only a rising cause of death in the United States but also of long-term disability, hospitalization and healthcare costs (Kumar & Nigmatullin, 2010). The current healthcare system is set up for treatment of these diseases, not for prevention (Kumar & Nigmatullin, 2010). This is not enough to decrease this

burden. When speaking of expansion of the port, the emphasis is on economic development, but that development will be worthless if the result is only the increased burden of healthcare costs.

Potential Solutions

It is easy to see issues from one side or another: the potential for economic growth, the potential hazard to the environment, the health detriments, and the increase in the number of jobs. It is more difficult to see the big picture; a project like the expansion of JaxPort warrants a larger view. It is not a issue of expanding the port or not, it is likely that the port will be expanded no matter what arguments are made about the potential health burdens. The issue thus becomes, how to mitigate those burdens.

There are a number of solutions which could be used to mitigate the decrease in air quality which will come from the expansion of JaxPort: the implementation of legislature regulating the standards of emissions by ships within United States waters, the use of "Green Port" strategies, regulations on how close to shore ships are allowed to travel, regulations on standards for the diesel burning trucks which are used in the ports and increased usage of rail and less harmful methods of moving cargo.

"Green ports", also known as "eco-ports" and "environmentally-friendly ports" are the latest trend in port construction around the world (Ying & Yijun, 2011). It is argued that green ports should take both environmental and economic impact into account and attempt to balance the two into a sustainable structure that can be

maintained long-term (Ying & Yijun, 2011). One of the characteristics of a green port is the use of electric ships and power to sustain ships and technology within the ports so that the use of fuel is mitigated or at least minimized.

While this would be possible in Jacksonville it may not be the best solution. While some electric power plants are switching to nuclear, solar and other energy sources to fuel their systems the power plant in Jacksonville, Florida which would power the Jacksonville Port Authority is still a coal burning power plant. So, while switching to electric power would help mitigate the emissions by the port itself it, the increase in coal emissions would still cause environmental damage. Coal combustion contributes to nitrogen oxides, sulfur dioxide, particulate sulfate, carbon dioxide and particulate nitrate levels (Mauderly et al., 2011). So, while in some areas, such as California, the use of electric ports would be an intelligent solution, it would not be in Jacksonville.

Another solution, which has been put into place in California, is the increased regulations on the standards of trucks used in the port areas. Overall, it is stated that ports and shipping yards are the places that "old trucks go to die". Usually it is older, less fuel-efficient trucks that are used in these areas. As of 2007 all cargo trucks in the United States were manufactured to have lower mass emissions rates than they had in the past (Garshick et al, 2008). Therefore, one suggestion would be to use only allow trucks manufactured post-2007 on port property. Since the majority of trucks are owned by the drivers, and they are considered to be small businesses, it would be suggested that the Jacksonville Port Authority collaborate with the federal or state government to obtain funding to help drivers update their trucks.

Lastly, a solution would be to increase the use of rail in JaxPort. One advantage for JaxPort is that the rail system already runs through the port area. According to the American Public Health Association (APHA), only 2 percent of the green house gas emissions in the United States comes from the use of rail while 19 percent and 16 percent come from light trucks and heavy trucks respectively (APHA, 2010).

Overall, taking small steps to mitigate the level of fossil fuel and green house gas emissions from the port would make large strides in creating acceptance of the port expansion in the Jacksonville area and in helping to maintain the health of the people both working and living in the port areas. While the expansion of the port might help to bring economic windfall now, it is the healthcare costs of the future that also must be recognized.

Conclusion

In conclusion, due to the limited research that has been done on port cities it is difficult to say with certainty what will happen to Jacksonville with the expansion of JaxPort. What is clear, however, is that the expansion will bring more ships, more trucks, and more road construction all of which will cause an increase in air pollution in the Jacksonville areas and therefore will adversely affect the health of the community. A rise in the number of diesel burning engines in the area will increase the amount of nitrogen oxide, sulfur oxide and particulate matter in the air. This will increase the incidence of lung disease, heart disease and cancer in the community.

There are no perfect solutions for this problem. The use of electric ships and ports will only increase the amount of electricity use and contribute to the coal emissions from the Jacksonville Electric Authority plant, mere miles away from the Port. There are remediating actions that can be taken though to cut down on the emissions: regulations on the quality of trucks allowed in the port areas and increased use of rail to transport goods.

When the port expands as planned, it will have an affect on air quality and the health of those breathing it. The difference can be made in how much it is affected and what can be done to remedy the situation.

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October 24, 2013

Mr Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District
40 W Bay St
Jacksonville, FL 32202

**RE: Jaxport Harbor Deepening General Reevaluation Report
and Supplemental Environmental Impact Study**

Dear Mr. Stodola,

We would like to thank you for the opportunity to comment on the Draft Reevaluation Report and Environmental Impact Study ("EIS") for the Jacksonville Harbor Navigation Study. As Northeast Florida's only land trust, North Florida Land Trust has a direct concern for any conservation lands that we either have acquired, potentially intend to acquire, are a part of our ongoing conservation programming through partnerships and land management, or are aspects of our ongoing strategic conservation campaigns. We own several conservation properties, and are in the process of acquiring several more parcels within the potential impact area of the harbor deepening. Furthermore, North Florida Land Trust, as well as many other conservation entities, are engaged in regular program of acquiring infill properties within the Timucuan Ecological and Historic Preserve, and preservation measures within its boundaries have become a major element in our programming. These are lands we hold or protect in the interest of the public trust so that the environmental services, scenic, aesthetic, and natural qualities of these lands may be enjoyed by future generations. Degradation of these lands and wetlands we take very seriously as an assault upon the interests of the next generation, and so we have been following the circumstances of the potential deepening very closely. In regards to our role as lands' stewards, we have the following comments for your review. Comments specific to one portion of text contain the page number from the study, and the section number when it could be easily found. Direct quotes appear in italics. Comments prepared with the assistance of Ground Water Solutions.

Unprecedented Conditions for Public Comment

The ability of the public to synthesize and provide informed public comment has been extremely reduced by the Environmental Impact Study's manner of the release over time. We understand that the accelerated timeline for environmental study of impacts from the harbor deepening has made it difficult for the Corps of Engineers to both complete the necessary portions of the study and provide the public meaningful periods of time to comment. However the "rolling release" of different elements of the study, along with a series of ongoing revisions has made it extremely difficult for the public to determine what the findings of the impact study are at any given time. In our research North Florida Land Trust has found little to no precedent for an agency to have to endure such an accelerated timeline with such a

complex system to study. However, because of the potential for public confusion under these conditions, we feel the Corps of Engineers actually has an enhanced responsibility to make the study clearly understandable. Simple administrative measures, such as providing revision histories, version dates, and “red-line” drafts could have done wonders in making the modifications to the study more easily interpretable. As it currently stands, after long review of the document we are still unclear as to what information originally provided in early draft versions has been rendered irrelevant by the recent updates. Given these conditions, we recommend that upon finalization of the impact study, red-line and clean versions of the EIS be provided to the public for a new period of public comment.

Extension of the Environmental Impact Study Deadline

The project timeline for the Jacksonville Harbor Navigation Study has been severely reduced by order of the President under his “We Can’t Wait” Initiative. That order, given in July of 2012, could never have predicted the partial government shutdown, the low efficacy of the U.S. Congress in meeting their legislative responsibilities or that the JAXPORT Harbor Deepening would not be included in either the Senate or the House’s 2011 WRDA reauthorizations. It would seem to us that such a fundamental change in circumstances would render the original intent of that presidential order null with the prospects of an immediate authorization of the deepening being bleak and that it would behoove the Corps of Engineers to ask for an extension of that deadline so as to address all those issues provided above, and in other public comments.

Concerns with Meeting the Terms of the National Environmental Policy Act

It is a requirement of the National Environmental Policy Act that the Corps of Engineers take a “hard look” at the facts of potential impacts. We have found, in far too many critical areas of the EIS, that there is not enough baseline information about the current conditions for the Corps of Engineers to provide full confidence to the public as to the accuracy of their model. Available species data and study impacts are only relevant to aquatic species while terrestrial species, that make use of the marsh and hardwood swamp forests potentially impacted by the deepening, have had little monitoring so there is no baseline to understand their numbers, vulnerabilities, and habitat usage. An insufficient number of metering devices have been available to gauge salinity, water level, periodicity, and turbidity in large portions of the study area. Again, an extension of the project timeline to gather baseline information to be fed into the study would do much towards increasing the provided models’ robustness. However, until an adequate level of baseline information is accrued, the findings of the model are suspect.

Furthermore, the public should be provided a completed copy of the EIS prior to finalizing public comments. As of the day of the public comment deadline, models for the worst-case sea level rise scenario and the EIS for the offshore dredged material disposal site have not been completed. We seriously recommend that the Corps of Engineers extend their deadline so as to properly address these yet unfinished portions of the study.

Mitigation

The GRR-SEIS allocates 75% of its mitigation dollars to monitoring with the promise that unseen impacts will be covered with budget allocations in future budgets of the local district’s Corps of Engineers. This mitigation proposal, or really, lack of a proposal, is the most troubling aspect of the study in our minds. If, as a result of the accelerated timeline and heavy reliance on models, the Corps lacks enough

confidence in its finding that it will obligate future budgetary dollars towards mitigating “unseen impacts,” then it simply has not sufficiently completed its EIS.

Furthermore, the proposal does not synchronize with the political reality. As it currently stands, Congress has failed to pass a budget since 2009 and has been operating on continuing resolutions since that time. Predicting that the Corps of Engineers will be able to expand their regular budget to cover significant mitigation requirements is not realistic without the budget expansion occurring at the expense of other regular budgetary priorities. The mitigation plan is essentially then to “rob Peter to pay Paul.” **We need an EIS that can confidently predict potential impacts and allocate mitigation funding in a level consistent with the original plan.** If an extension of the deadline is what it takes to make that necessary, then we fully recommend that the Corps extend that deadline.

Salinity Impacts

P. vi. - *“the recommended plan may cause average salinity levels in that portion of the St. Johns River affected by the project to increase slightly, resulting in an up-river shift of salinity break-points. The expected effect of such changes would be a shift in wetland species composition and changes in distribution of wetland communities, although uncertainty exists about the magnitude of both the effect of deepening on salinity and the ecological response to changes in salinity. Such changes may also affect other ecological resources, including fish and invertebrate species found in the river.”*

The acknowledgment that the proposed project will produce significant ecological changes is made even harder to accept by the expressed uncertainty in the determination. Why was there not more conservative approaches used to produce conservative, worst-case scenario, results?

P. 6 - §2.3.8 - Other Wildlife Resources – *“Upstream of the channel deepening area, the salinity gradient has a profound effect on the species composition and the aquatic ecosystem shifts from estuarine to freshwater.”*

The EIS acknowledges that the TS will shift the saline/freshwater interface further upstream in the main channel and its tributaries, ultimately causing profound ecosystem changes throughout. It is hard to understand how such changes can be considered to be consistent with the Corps’ mitigation plan.

Ground Water Hydrology

P. 14, §2.2.2. Ground Water Hydrology – *“The intermediate confining unit consists of beds of relatively low permeability sediments that vary in thickness and areal extent. The unit may be breached by sinkholes, fractures, and other openings.”*

and

P. 15, §2.2.3. Tides and Salinity - *“Further upstream from Palatka, salinity may increase due to chlorides introduced from ground water seepage of buried salt water and related salt water springs. Under drought conditions, sea water intrusion extends upstream as far as Palatka.”*

Those sinkholes, fractures, and “other openings” will allow for potential impact to the Floridan aquifer. **Given the importance of the protection of that aquifer, a more in-depth study of impacts to the ground water is merited.**

Sea Level Rise

P. 11 - §7. - Sea Level Rise “Stakeholders have expressed concern regarding the rates of sea level rise that are being used in the modeling instead of a greater rate of increase. The USACE is required to perform these analyses based on provided guidance Engineering Circular, E 1165-2-211.”

This paragraph follows on the discussion of paragraph §2.2.5. The Engineering Circular EC 1165-2-211 states:

“(2) The National Research Council’s 1987 report Responding to Changes in Sea Level: Engineering Implications recommends a multiple scenario approach to deal with key uncertainties for which no reliable or credible probabilities can be obtained. In the context of USACE planning, multiple scenarios address uncertainty and help us develop better risk informed alternatives.

*b. Planning studies and engineering designs should consider alternatives that are developed and assessed for the entire range of possible future rates of sea-level change. These alternatives will include structural and nonstructural solutions, or a combination of both. **Evaluate alternatives using “low,” “intermediate,” and “high” rates of future sea-level change for both “with” and “without” project conditions.** Use the historic rate of sea-level change as the “low” rate. Base “intermediate” and “high” rates on the following:*

(1) Estimate the “intermediate” rate of local mean sea-level change using the modified NRC Curve I and equations 2 and 3 in Appendix B (see Figures B-9 and B-11). Consider both the most recent IPCC projections and modified NRC projections and add those to the local rate of vertical land movement.

(2) Estimate the “high” rate of local sea-level change using the modified NRC Curve III and equations 2 and 3 in Appendix B (see Figures B-9 and B-11). Consider both the most recent IPCC projections and modified NRC projections and add those to the local rate of vertical land movement. This “high” rate exceeds the upper bounds of IPCC estimates from both 2001 and 2007 to accommodate for the potential rapid loss of ice from Antarctica and Greenland.

*c. Determine how sensitive alternative plans and designs are to these rates of future local mean sea-level change, how this sensitivity affects calculated risk, and what design or operations and maintenance measures should be implemented to minimize adverse consequences while maximizing beneficial effects. Consider sensitivity relative to human health and safety, economic costs and benefits, environmental impacts, and other social effects. **Address risks for each alternative and each potential future rate of sea-level change (“low”, “intermediate”, and “high”).** For those alternatives sensitive to sea-level change, evaluate the potential timing and cost consequences during the plan formulation process.”*

This instance is most puzzling. The stakeholders made what we believe was a most reasonable request to evaluate the effects of a higher rate of SLR. In its attempt to explain why it did not and would not, the USACE cited its own guidance which, in fact, directed it to do exactly what the stakeholders requested and what we recommend in the discussion of §2.2.5.

The reason(s) for this failure to follow USACE guidance are unclear. Granted, the EIS was prepared under a shortened timeline, the most time consuming parts of most environmental modeling efforts are the development and calibration of the models. Once completed, modeling additional scenarios is generally a simple computer exercise.

P. 1 - §2.2.5 Sea Level Rise – “EC 1165-2-212 provides both a methodology and a procedure for determining a range of sea level change estimates based on global sea level change rates, the local historic sea level change rate, the construction (base) year of the project, and the design life of the project. Three estimates are required by the guidance, a Baseline estimate representing the minimum expected sea level change, an Intermediate estimate, and a High estimate representing the maximum expected sea level change (Figure 9).

Adjusting equation (2) to include the historic global mean sea-level change rate of +1.7 mm/year results in updated values for the variable b being equal to $2.71E-5$ for modified NRC Curve I (Intermediate), $7.0E-4$ for modified NRC Curve II, and $1.13E-4$ for modified NRC Curve III (High).”

$$\text{Equation 2: } E(t) = 0.0017t + bt^2$$

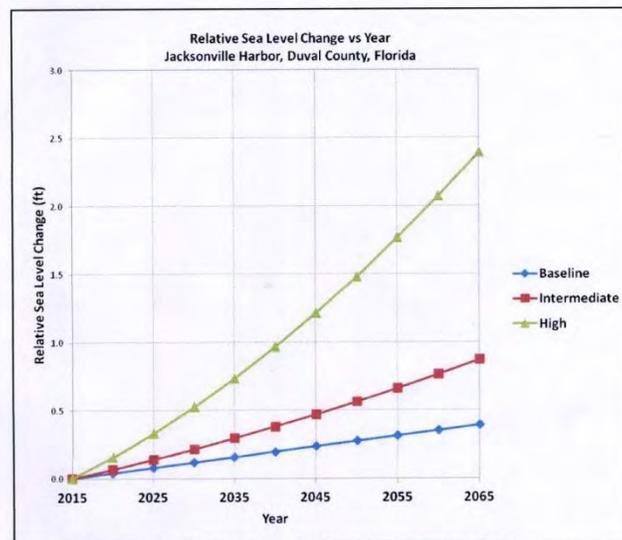


FIGURE 9: RELATIVE SEA LEVEL CHANGE VS. YEAR JACKSONVILLE HARBOR

This explanation comes directly from EC 1165-2-212 provided on the USACE’s website: <http://www.corpsclimate.us/ccaceslcurves.cfm> but omits information critical to understanding the graph and, hence, the significance of the data presented therein. EC 1165-2-212 prefaces the language included in the EIS with:

“EC 1165-2-212 uses the historic rate of sea-level change as the rate for the “USACE Low Curve.”

The rate for the “USACE Intermediate Curve” is computed from the modified NRC Curve I considering both the most recent IPCC projections and modified NRC projections with the local rate of vertical land movement added.

The rate for the “USACE High Curve” is computed from the modified NRC Curve III considering both the most recent IPCC projections and modified NRC projections with the local rate of vertical land movement added.

The three scenarios proposed by the NRC result in global eustatic sea-level rise values, by the year 2100, of 0.5 meters, 1.0 meters, and 1.5 meters. Adjusting the equation to include the historic GMSL change rate of 1.7 mm/year and the start date of 1992 (which corresponds to the midpoint of the current National Tidal Datum Epoch of 1983-2001), instead of 198 (the start date used by the NRC), results in updated values for the coefficients (b) being equal to $2.71E-5$ for modified NRC Curve I, $7.00E-5$ for modified NRC Curve II, and $1.13E-4$ for modified NRC Curve III.”

In other words, the three curves described in the EIS are not the same curves shown in the accompanying graph. The EIS implies that USACE’s “Low Curve” is the Intermediate case. In many places in the text it alternately describes the “Low Curve” as the “historic curve”, which is correct but the dual notation only adds to the confusion. An annotated version of the same graph may be helpful:

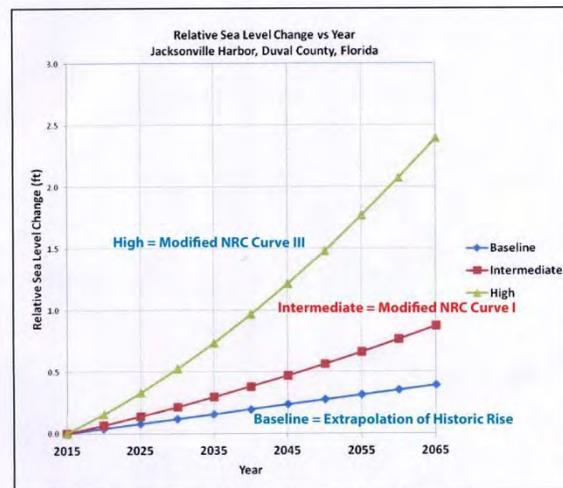


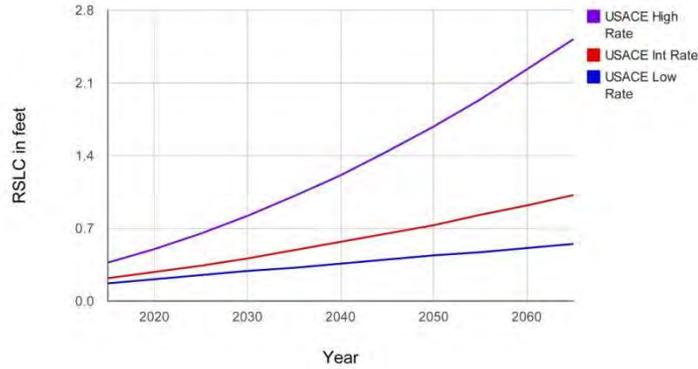
FIGURE 9: RELATIVE SEA LEVEL CHANGE VS. YEAR JACKSONVILLE HARBOR

It is perhaps this presumably unintentional confusion which leads to one of the most troubling aspects of the entire EIS. Per the graph produced by the algorithm in the now-superseded EC 1165-2-212, the minimum sea level rise expected over the 50-year project period – somewhat questionable concept in and of itself – is 0.39 feet, based on the historical trend since 1986. The intermediate estimate is around 0.9 feet and the maximum around 2.4 feet.

The version of EC 1165-2-212 used in the EIS expired September 30, 2013. The results of the updated version are shown below. The updated values are 0.55 ft., 1.02 ft., and 2.52 feet, respectively, reflecting USACE’s acknowledgment that sea level is rising more quickly than thought only two years ago.

CESL SLC Curves

USACE SLC Curves - Gauge FL, Mayport: 79 yrs
USACE Curves computed using criteria in EC 1165-2-212



The problem with incorporation of these projections in the EIS is that, **in virtually all relevant parts of the EIS, only the effects of the minimum value for SLR were evaluated** and **never** was the worst case considered. The 0.39-foot SLR value used throughout the EIS is not only the wrong value, it is arguably irrelevant. In preparing an EIS, the overarching objective is to determine the **potentia and likely** environmental impacts of proposed course of action. “Potential” implies worst case, while “likely” is the most probable or, in this context, Intermediate case. The minimum predicted SLR can only be regarded as the best-case scenario, and of questionable interest in this context.

There is considerable debate on the causes and rates of SLR, the former primarily in the political arena. For perspective, the following table compares the results of similar analyses by the National Oceanic and Atmospheric Administration, as presented in its December 6, 2012 Global Sea Level Rise Scenarios for the United States National Climate Assessment.

NOAA	USACE		
SCENARIO	SEA LEVEL RISE by 2100 (feet)	SCENARIO	
Highest	6.6	5.1	High
Intermediate-High	3.9	1.85	Intermediate
Intermediate-Low	1.6		
Lowest	0.7	0.8	Low

The values are in remarkably good agreement for two different government agencies. It is noteworthy that the estimates from USACE are all lower than the corresponding values from NOAA. NOAA points

out in the referenced report that the scenario chosen for given evaluation must depend on the risk tolerance involved. The future of the ecosystems of the St. Johns River, its tributaries, marshes and swamps is not something with which to gamble. The EIS’s use of the Baseline SLR estimate is a significant gamble to the health of the Lower St. Johns River system with resources that don’t belong to USACE or JAXPORT.

p. 173 - §7.1.1 - General Description of Potential Consequences – *“The deepened channel will allow a greater volume of seawater to penetrate u the St. Johns River.”* This could result in:

- Increased tidal amplitude within the river and adjacent marshes
- Increases in salinity within the estuary which could:
 - Impact freshwater wetlands and submerged aquatic vegetation in areas of increased salinity
 - Change community composition and diversity of plant and animal communities in areas of increased salinities
 - Shift the location of optimal salinities for those species with salinity preferences
- Change water residence times, which in conjunction with salinity changes could
 - Alter plankton species composition and growth patterns
 - Alter dissolved oxygen dynamics in the river main channel

Again, all of the quantitative estimations of these effects presented were developed using the “best-case” SLR of 0.39 feet and the nominal dredging depth of 47 feet. specific example of the implications of the approach taken is seen in Appendix A, Attachment M, *ENGINEERING – Hydrodynamic Modeling (ADCIRC/MIKE21) for Salt Marsh an Tributary Salinity an Waterlevel*. Table 1 of the included ADCIRC HYDROPERIOD and MARSH PLATFORM RESPONSE shows that the scenarios modeled for sea level rise were only for the baseline and

Table 1. Simulations of tides-marsh equilibria run for project.

Simulation	Existing vs. proposed channel depth	Sea-level rise (ft)	Completed (Y/N)
1	Existing	0.00	Y
2	Proposed	0.00	Y
3	Existing	0.39	Y
4	Proposed	0.39	Y
5	Existing	2.40	N
6	Proposed	2.40	N

“best case”, i.e., 0.39 feet of sea-level rise (SLR). Table 1 suggests that evaluation of a 2.40-ft SLR – closer to USACE’s highest SLR estimate was in the project scope but was not conducted. The report states: *“Dredging will impact the mean tidal range by increasing it by only as much as 0.08 m.”*- over three inches, is a not insignificant change in a sensitive ecological system with little topographic relief.

Assuming the relationship between SLR and the water-level effect of dredging is linear, the proposed dredging under the highest estimated 2.40-ft SLR would increase the tidal range by 0.48 m, or over 1.5 feet. A tidal range increase of this magnitude will accelerate erosion and channel widening on the islands of the Timucuan Ecological & Historic Preserve, with attendant habitat implications.

Similarly, Table 2.1 of Attachment L *ENGINEERING – Hydrodynamic and Water Quality Modeling for Environmental Impacts*, shows that, again, only the “best-case” sea-level rise, i.e.,

Table 2.1 EFDC Model Simulations

	Depth (ft)	Water Withdrawal	Sea Level					
								Const. +50 yr,
Scenario	40	44	46	50	None	15 MGD	No Change	Curve 1 (0.39 ft)
40ft_B95_SL0 ¹	X				X		X	
40ft_FSJ_SF1	X					X		X
44ft_B95_SL0		X			X		X	
44ft_FSJ_SF1		X				X		X
46ft_B95_SL0			X		X		X	
46ft_FSJ_SF1			X			X		X
46ft_FSJ_SF1				X	X		X	
50ft_FSJ_SF1				X		X		X

¹Baseline condition

0.39 feet was evaluated, stating that: “This study also considered project area conditions 50 years after project completion. The 50-year condition includes a 0.39-ft SLR and 155 million gallons per day (MGD) water withdrawals from the Upper St. Johns River. This sea-level rise represents a continuation of the recent historical rate of sea level rise.” This SLR assumption is inconsistent with those stated in other reports on the proposed dredging as well as those issued by the US EPA, NOAA and IPCC. Again, the effects of the proposed project are synergistic with those of climate change and, in this instance, neither the most probable nor worst cases has been evaluated. This glaring oversight calls into question the validity of other reports on the proposed project with perhaps less obvious deficiencies.

Dredged Material Management Area

P.25 - §2.2.8 - Dredged Material Management Areas - *“The Final EIS for the ODMDS an EPA designation of the new ODMDS site is expected to be complete in 2014.”*

The disposition of the dredged materials is an inherent part of the TSP. As such, it is impossible to assess the overall environmental impact of the TSP without this significant component. We maintain that this is an improper segmentation of the EIS as it fails to provide a proper logical terminus and in assigning a management area without an assessment of the environmental impacts, does not allow the Corps to consider alternative proposals for the beneficial use of dredge spoil under the Federal Standard, as there is no accounting for cost until that EIS is completed.

Overdredge

P. 16 - §6.5 - OPERATIONS AND MAINTENANCE CONSIDERATIONS – *“Advance maintenance is dredging to a specified depth and/or width beyond the authorized channel dimensions in critical and fast-shoaling areas to avoid frequent re-dredging an ensure the reliability an least overall cost of operating and maintaining the project authorized dimensions. The following areas of advanced maintenance were identified.”*

“We have therefore designed these areas to equal the areas of advanced maintenance which have been previously authorized. The follow areas highlighted in blue are designated as advanced maintenance areas, Figure 37.”

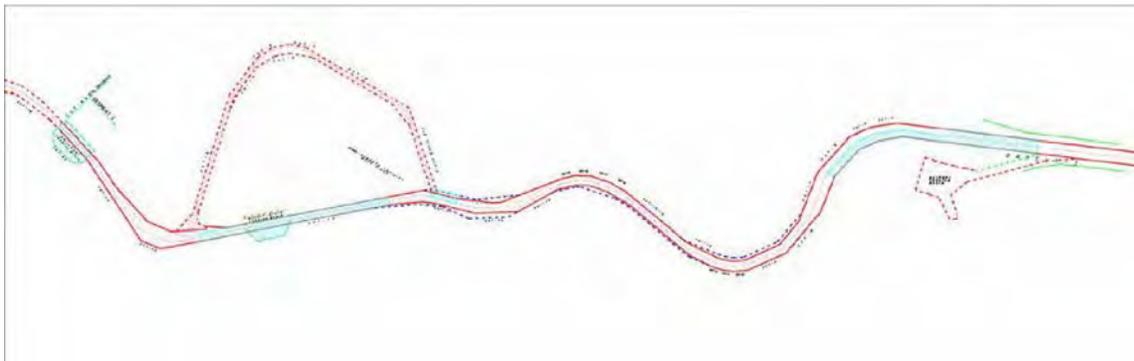


FIGURE 37: WITH-PROJECT ADVANCED MAINTENANCE AREAS

While this approach seems prudent from an engineering perspective, it is in fact deepening the channel beyond the 47-foot nominal depth. A review of Plates 1-38 reveals that the annotations “50-foot required depth plus 1-foot allowable overdepth,” “48-foot required depth plus 1-foot allowable overdepth” or “48 or 50-foot required depth plus 1-foot allowable overdepth” apply to almost the entire 1 miles of dredging. In other words, **most of the channel will actually be dredged to a depth of 49 to 51 feet** We have at different times heard that the overdredge is “implied” in explaining effects of the 45’ and 47’ foot nominal depth dredges. However, as this is not clarified in addressing different sections of the documents its hard to tell if the different sections of the EIS are addressing situational overdredge. **Th net result is there is little ability to distinguish if these adverse effects have been systematically underestimated in the EIS.**

Summary of Comments

In summary, the Environmental Impact Study provided at the deadline for public comments is incomplete, either entirely in unfinished sections of the report, or suffers from a lack of quality caused by a politically contrived and arbitrarily shortened deadline. We have serious concerns that these deficiencies do not comply with the spirit of the National Environmental Policy Act. Finally, we are seriously concerned that, given the shortcomings in completeness and quality, the Corps has significantly reduced their provisions for offsetting mitigation impacts.

North Florida Land Trust has a severe concern, as stewards of lands that will be directly impacted by future dredging efforts, with this EIS. We desire a healthy operating port and appreciate its benefits to our community. However, more important to us is the health of our local ecosystems. Until this study is completed to a greater sufficiency and mitigation of impacts properly accounted for, we cannot support the recommendations of this Environmental Impact Study.

Thank you for your time and consideration,

A handwritten signature in black ink, appearing to read "Marc Hudson", with a long, sweeping horizontal line extending to the right.

Marc Hudson
Land Protection Director
North Florida Land Trust

Mr. Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District

Dear Mr. Stodola,

My name is Marc Hudson, the Land Protection Director of North Florida Land Trust, located at 804D 3rd street, Neptune Beach, Florida. We are a public-benefit 501(c)3 conservation non-profit, focused on the preservation and protection of many of the lands in the proposed dredging area in the impact study. In recent history we have spent more than \$1,800,000 of private, charitable given donations on the acquisition of natural areas in the study area. We have been given an additional \$450,000 in private lands within the impact area, and plan to acquire yet another \$800,000 of lands, again, directly in the impact area. Another \$3.5 million public grant, waiting for finalization, puts the North Florida Land Trust at the head of a \$6.5 million public/private investment in the environments of the proposed study area, not including sweat equity. We take good care of our investments, all intended for the long-term, in fact in perpetuity, as we try to preserve and maintain our landscapes for the benefit of future generations. All of this does not matter one bit, of course, if those lands are destroyed or seriously degraded by the actions of third-party actors working in the community.

In our role as protectors and stewards of the land, we have read your report with great pause at what is, in this stage of the process, an incomplete report. The model in the report mostly deals with salinity, and with a single-minded aplomb the report states that the Timucuan Preserve is already saline, and so there can be no effects.

The saltwater tributaries within the preserve were completely absent from the model. Putting aside the fact that changes in the intensity of salinity in a salt marsh can have effects on the zonality of the vegetation within them, and stress many species of aquatic life living in the marsh, it completely ignores that there may be non-saline impacts to the Preserve.

The effects of wake erosion have been insufficiently studied because of a failure to model for the size of the boats that are expected to come up the river as a result of deepening. In the area between Bar Pilot and Long Branch, which encompasses the mainstem of the river at the point of all the Timucuan's estuaries entering the river, there is a predicted 4.8-inch increase in the tidal range, with absolutely no mention of what effects that could have on erosion or marsh flooding. The Corp of Engineers expects the change in currents on the mainstem of the St. Johns to change, and there is again no exploration of what effects that will have on the erosion and accretion of sediments in the St. Johns.

Even more worrying is the lack of exploration of the potential effects on currents and mixing in the saltwater tributaries. By deepening the river a kind of saltwater highway will be formed encouraging the more rapid movement of water up the mainstem, moving past the higher elevation saltwater tributaries. The possibility of this happening is not mentioned at all in the report and therefore none of the possible effects.

The coastal strands and salt marsh habitats in Northeast Florida are the most extensive and least impacted such habitats along the Atlantic coast of Florida and are important to a number of threatened and declining populations of nesting and migrating coastal birds in every season. These habitats are also critical to wading birds, nesting sea turtles and a number of other wildlife species. To compensate and

mitigate for these potential impacts the mitigation plan proposed as part of this project MUST include specific designs for the beneficial reuse of dredge spoil materials to include the creation and restoration of coastal barrier and near shore islands for the benefit of nesting and overwintering birds, and programs to reconstruct and armor coastal marshes against the impacts of sea level rise. Given the need for coastal and marshland protection and restoration in the region, the planned disposition of dredge spoil materials in offshore disposal sites is unacceptable. We believe that the inclusion of beneficial reuse of dredge spoil materials for marshland and coastal habitat restoration within the mitigation plan for this project will obviate the need for USACE to abide by the usual spoil removal standard. The unforeseen expenses in the cost of salt marsh mitigation will change the economics of spoil removal, making retention of materials for restoration more attractive.

This report, as stated by the Corp themselves, is simply incomplete. Many portions of the report are still being rushed to be completed, yet the public comment period ends before these will be done. This does not reflect the spirit of the National Environmental Policy Act, which intends to allow public comment *after* the finalization of the facts of the environmental impact statement. Because of this, the public comment period should be extended by a further 60 days, with the option for further extensions until such time that all the facts of the report become known.

The proposed Jacksonville Port dredging project, accelerated by the federal "We Can't Wait" initiative, requires a deeper examination of the full impacts to the community before moving forward. For our purposes, we would merely prefer to "wait" and give the Corp of Engineers enough time to appropriately study the economic and environmental impacts associated with deepening the St. John's River, ignoring the President's "We Can't Wait" order. We understand that the deepening of the St. Johns is a national priority. However, all the negative impacts are to be placed on Jacksonville and the communities of the lower St. Johns. In recognition of these impacts our communities should be allowed the full time normally allotted to study them. The celebrated economic benefits of such a project could well be transitory. Potential future costs for maintaining the dredge may well outweigh job increases. Environmental damage, for which there is no currently available mitigation and future potential for mitigation is dubious, will most likely be permanent. With these kinds of risks there is no benefit to Jacksonville haphazardly rushing into a river deepening.

With utmost respect,

Marc Hudson
Land Protection Director
North Florida Land Trust



Old Arlington, Inc.
P.O. Box 15304
Jacksonville, FL 32239

A 501(c)3 non-profit organization founded in 1993 committed to historic preservation and community revitalization for the neighborhoods that comprise Old Arlington

July 31, 2013

Mr. Paul Stodola
U.S. Army Corps of Engineers
Jacksonville District
Jacksonville, FL 32202

Dear Mr. Stodola:

At its meeting on July 30, 2013, the members of Old Arlington, Inc. adopted the following resolution and submits same for inclusion in the public comments record regarding JAXPORT's proposed harbor deepening of the St. Johns River:

Whereas the decision to deepen the St. Johns River will have significant impact and long-term consequences for the St. Johns River and the Jacksonville community, and

Whereas President Obama's "We Can't Wait" initiative dramatically reduces the Army Corps of Engineer's study time schedule by 14 months, leaving the Corps with insufficient time to thoroughly evaluate this complex issue and potentially jeopardizes the integrity of such analysis, and

Whereas the study of the potential local economic impacts conducted by a JAXPORT consultant has not been released to the public or independently peer-reviewed for accuracy, and

Whereas the St. Johns Riverkeeper, an independent and trusted voice for the St. Johns River and the public to whom it belongs, has serious concerns that the proposed mitigation plan to offset potential environmental impacts is woefully insufficient, therefore

Be it resolved that the members of Old Arlington, Inc. support the position of the St. Johns Riverkeeper asking President Obama to give the Army Corps of Engineers more time to complete the study and make sure the proposed Harbor Deepening Project has been thoroughly evaluated.

Thank you for your consideration.

Sincerely,

Steve Matchett
President

Stodola, Paul E SAJ

From: ed taylor [ed.taylor@putnam-fl.com]
Sent: Monday, June 17, 2013 2:52 PM
To: Stodola, Paul E SAJ
Subject: Correct Revised Rodman Letter of Response to U.S. Army Corps of Engineers

Dear Mr. Stodola:

After our phone conversation this morning I have prepared this response on behalf of Save Rodman Reservoir, Inc. I find it very disturbing that there was a tour of Rodman consisting of Government officials and the environmental groups that we were not invited. I am sure they only gave you their side of the story which is full of false statements. Now I will give your our response.

Our group has never said what was done in the past was the right thing to do, but, for once a government boondoggle turned out to be a plus for the citizens. I have read many articles and letters where the Corps has stated that there were numerous issues that were unsolved and would have to be settled before the dam could come down and that it also would cause some very strong controversy arguments that would surface. That is putting it very lightly. Of course, I am sure you are aware that we have a legal team that is standing by to represent us. This team consists of 5 attorneys and I am keeping them informed as to what might happen. Some of the issues that must be answered is:

The U.S. Congress in 1991 turned over all lands and structures pertaining to Rodman to the State of Florida. (please note the word ALL) 16 USC. 460tt

F.S.253.7829 states the final decision on what happens to Rodman is left with the Florida Legislature

The official name of Rodman Reservoir is Lake Ocklawaha (Public Law 91-637 91st Congress, H.R.12564)

There can be no draining of lakes without written consent of everyone living on the lake F.S.298.74

Rodman Reservoir (Lake Ocklawaha) is a future potable water source

Rodman Reservoir has more visitors than all but 12 of Floridas State Parks. (DEP & Game and Fish Commission) They also confirmed that recreational use would result in a 55% (DEP) 63%(G&F) decline if Rodman was destroyed.

University of Florida Lakewatch program shows that the reservoir removes about 50 to 60% of the nutrients before they reach the St. Johns River

Manatee protection devises has been installed at the locks and dam and since that time no manatee has been injured or killed and they travel in and out of Rodman freely and regularly.

If you ask the DEP face to face what they think it would really cost I would expect them to answer you as they answered me, and that is they don't have any idea what the real cost would be.

If this gets into another battle we are going to expect to hear your answers to everyone of the above and more. This system has been in existence for over 45 years and has formed its own eco-system and our answer to this controversy is to simply leave it alone.

Respectfully

Ed Taylor, President

Save Rodman Reservoir, Inc

Putnam County Commissioner, Dist 4

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PUBLIC
TRUST

Environmental Law Institute of Florida

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Executive Director

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**PUBLIC TRUST WRITTEN OBJECTION TO
JACKSONVILLE HARBOR DEEPENING**

10/24/13

Submitted Via E-mail to
paul.e.stodola@usace.army.mil

Mr. Stodola:

The U.S. Army Corps of Engineers is currently studying a proposal to dredge the St. Johns River from 40 to 47-feet in an effort to accommodate larger post-Panamax ships. On behalf of The Public Trust Environmental Legal Institute, its board of directors, and its members, I hereby file this written objection to the Jacksonville Harbor Channel Deepening project.

The Public Trust shares in the concerns already raised by many in the Jacksonville community, specifically, that:

- the impacts to the St. Johns River are being significantly underestimated;
- the economic and environmental risks have been ignored or downplayed;
- the projected economic benefits have been dramatically overstated by Jaxport and some of its partners;
- relevant information and facts have been excluded from the analysis and/or public debate;
- the Corps' ability to thoroughly evaluate the risks of this complicated project has been undercut by the "fast-tracked" nature of the Environmental Impact Statement (EIS), which was only compounded by the government shutdown in October, 2013;
- the draft EIS is incomplete and utilizes unverified models and contains incomplete baseline information; and

-the Corp plans to put aside little to no funds to offset the potential environmental impacts from the deepening.

The Public Trust believes that the environmental impacts from this proposed project are not yet fully appreciated. However, they will certainly include at least the following:

- salinity will move farther upstream, impacting hundreds of acres of wetlands and submerged aquatic vegetation (SAVs) and killing or stressing numerous trees in some sections of the river;
- the most significant impacts to wetlands are expected to occur along the St. Johns River, within the Ortega River, Julington, Durbin, and Black Creeks;
- the models estimate the exact same impact to wetlands (448.95 acres) and submerged aquatic vegetation (296.6 acres) for every depth analyzed (44, 45, 46, 47, and 50-ft deep channel), this simply cannot be the case and thus the true extent of the environmental impact, while certain to occur, is still unknown;
- water may remain in the St. Johns River for a longer period of time, increasing the probability of algal blooms;
- larger ships will create larger wakes, increasing the likelihood of shoreline erosion;
- the mitigation plan is woefully inadequate, failing to offset damage incurred from dredging;
- the Environmental Protection Agency (EPA) estimates that a volume of 4,309,677 cubic yards of rock may need to be removed, potentially exposing the surficial aquifer to saltwater intrusion;
- proposed blasting may facilitate increased porosity and transmissivity of seawater into ground-water dependent public water supplies associated with storm events and high tides;
- in the area of the proposed action there have been incidences of dredged material failing to meet the ocean dumping criteria thus a potential for adverse effects on aquatic environments of dredged material exists;
- threatened and endangered species will be impacted from the necessary blasting.

For these reasons the Public Trust objects to the Jacksonville Harbor Deepening project and would request to Army Corps of Engineers to address these concerns before approving any such project or issuing its final Environmental Impact Statement.

Sincerely,

/s/ Andrew D. Miller
Andrew D. Miller
Executive Director/Legal Counsel
The Public Trust

October 23, 2013

Mr. Paul Stodola
U.S. Army Corps of Engineers Jacksonville District
Jacksonville, FL 32202

RE: Draft Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement for the Jacksonville Harbor Navigation Study

Dear Mr. Stodola,

Audubon Florida appreciates the opportunity to comment on the Draft Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement for the Jacksonville Harbor Navigation Study (GRR-SEIS). Audubon is Florida's oldest conservation organization, with particular expertise in the conservation of birds, other wildlife and their habitat. While we appreciate the Corps has been directed to move the Jacksonville Harbor Navigation Study forward with all reasonable urgency, Audubon has identified several weaknesses in the GRR-SEIS that warrant resolution in a subsequent Draft prior to releasing a Final EIS.

The Environmental Impact Study timeline should be lengthened.

The project timeline for the Jacksonville Harbor Navigation Study has been reduced by 14 months under the Federal "We Can't Wait Initiative." This has restricted the timeframe for environmental assessments and limited the Corps' ability to thoroughly evaluate potential impacts. Rather than risk unnecessary damage to the lower St. Johns River system and the wildlife that depends on it, the Corps should extend the study period by at least another year and engage in more detailed analyses of environmental impacts.

The GRR-DEIS is too reliant on model simulations, and key information is missing.

NEPA requires that the Corps undertake a robust analysis of impacts. The tidally impacted reaches of the lower St. Johns River system include the largest and most diverse system of salt marshes on Florida's east coast, as well as very significant fresh water wetlands and SAV beds within the project footprint. These marshes and forested wetlands are important to a wide range of species and exist in a delicate, dynamic equilibrium with the river itself. Although the Corps has noted that threatened and endangered species including manatees, right whales, sea turtles, piping plovers, red knots, wood storks, short-nosed sturgeon and smalltooth sawfish may occur within the project footprint, systematic baseline surveys of birds and other wildlife sufficient to fully understand their numbers, habitat use and vulnerabilities have not been conducted. Audubon recommends that an appropriate level of baseline monitoring with enough coverage to produce an accurate picture of existing conditions should be employed for at least a year before a new Draft EIS is developed. Results can then inform models to improve their performance. Installation of metering devices to track water level, salinity, turbidity, and periodicity of water level changes throughout the project life should be installed now in all areas that might be affected by dredging. Similarly, systematic surveys of birds and other wildlife should be conducted through at least one annual cycle.

The opportunity for public comment has been limited by the reduced project timeline, missing or incomplete information, and the piecemeal release of supplemental information.

Largely due to the reduced timeline, the Corps has been forced to revise the DEIS/GRR-DEIS several times. New and often critical information has been released in piecemeal fashion over a period of several months, and some information is still unavailable for review. Constant revisions and addenda to the DEIS/CRR-DEIS and inconsistencies within the document itself have caused an unnecessary level of confusion and hampered the public's ability to provide meaningful input. In order to allow for an appropriate level of public review and participation, the Corps should establish a new deadline for comments only after it has completed and compiled all relevant baseline studies and impact assessments in single, comprehensive document.

Modeling of impacts requires more supporting data, to ensure mitigation is appropriate and proportional.

The GRR-SEIS allocates 75% of its mitigation dollars to monitoring for unanticipated project impacts. Monitoring is not equivalent to mitigation, and the uncertainty surrounding project impacts is due to the insufficiency of the supporting information and the Corp's undue reliance on model estimates. The remaining 25% of mitigation dollars are allocated to purchase mitigation bank credits, upland buffer lands, or credits for agricultural nutrient reductions ; without sufficient primary research to better predict project impacts, the Corps cannot demonstrate these mitigation proposals will remedy losses. Audubon recommends the Army Corps undertakes the primary research necessary to more accurately predict environmental impacts as required by NEPA, and propose more appropriate and proportional mitigation before finalizing the EIS.

The Corps should explore mitigation opportunities to improve or create habitat for imperiled beach dependent birds.

More than a century of navigational improvements to the LSJR have had a tremendous impact on the quality and availability of habitat for coastal birds. This dredging proposal presents an opportunity to use dredged material to benefit these species impacted by past and proposed activities. Audubon recommends that the Corps consider the effects of proposed dredging on nesting activities by beach-nesting birds, and include the management of Dredged Material Management Areas (DMMA's) for optimal beach-nesting bird habitat in its revised mitigation proposals. This proposal provides the opportunity to improve the outlook for some of Northeast Florida's fastest declining bird species, with activities in aid of the Corps' primary mission.

Thank you for the opportunity to comment on this proposal. In addition to the river itself, Northeast Florida is home to habitat of remarkable size and value at iconic sites like Timucuan National Preserve, the Talbot Islands GeoPark, Huguenot Memorial Park and more. The configuration of this project will have real and lasting impacts to the river, these special places, and the wildlife they support. Audubon is committed to working with you to ensure the project is designed and implemented in the least impactful way while also providing meaningful and lasting mitigation for any resulting impacts.

Sincerely,



Julie Wraithmell
Director of Wildlife Conservation
jwraithmell@audubon.org



Save the Manatee® Club

The Voice For Manatees Since 1981

Submitted via email to: Paul.E.Stodola@usace.army.mil

October 24, 2013

Re: Jacksonville Harbor, Draft Navigation Study, GRR2

Dear Mr. Stodola,

Save the Manatee Club has reviewed the Subject report and offers the following comments:

History and Tentatively Selected Plan (TSP)

The St. Johns River had an original depth of -12.5 ft and experienced its first deepening, to -18 ft, in 1896. The river was further deepened in 1910, to -30 ft, then to -38 ft in 1965. This 1965 work also included widening of the river and deepening the ocean entrance to -40-42 ft. A 1992 study authorization resulted in a recommendation to deepen the river entrance to mile 14.7 from -38 ft to -40 ft. This project was authorized in 1999 and construction was complete in 2003, and included deepening cuts F and G to -38 ft. A General Reevaluation Report was then authorized in 2003, which recommended deepening river mile 14.7 to 20 from a depth of -38 to -40 ft. This work was authorized in 2006, funded in 2009, and construction was completed in 2010.

The TSP involves deepening the St. Johns River channel to -47 ft from the river mouth to mile 13, with an actual dredge depth to -49 ft. The NED benefits were maximized at a dredge depth of -45 ft, but the local sponsor, the Jacksonville Port Authority, requested a -47 ft depth even though the net economic benefit is reduced at this depth and blasting impacts to protected species would increase.

The design vessel referenced in modeling was the Maersk S-Class, with a maximum draft of 48 ft. The expanded Panama Canal will be able to accommodate vessels with 50 ft draft, 160 ft beam, and 1,200 ft length. In addition to deepening the St. Johns River channel, if this project is approved, there will also be several areas of widening: Mile Point (widen to the north by 200 feet for Cuts 8-13), the Training Wall Reach (widen to the south 100 ft for Cuts 14-16 transitioning to 250 feet for Cut 17 and back to 100 feet for Cuts 18-19) and the St. Johns Bluff Reach (widen both sides of the channel varying amounts up to 300 feet for Cuts 40-41). Two turning basins are also recommended: Blount Island (~2,700 feet long by 1,500 feet wide located in Cut-42 [~RM 10]) and Brills Cut (~2,500 feet long by 1,500 feet wide located in Cut-45 [~RM 13]) (PDF p.156).

Net economic benefits are a main driver of this deepening proposal. If benefits for this location are maximized at a depth that cannot even accommodate the typical post-Panamax vessel, we question whether Jacksonville Harbor is an appropriate location to attempt to accommodate these vessels. As it is currently proposed, Maersk S-Class vessels will just barely be able to call at this location, with a maximum 12 inches of bottom clearance. Furthermore, according to the Port, they will need to make significant improvements to the berthing area bulkheads and other infrastructure in order to accommodate deepening beyond -45 feet (PDF p. 148), which will be a costly endeavor. Additionally,

with three other ports on Florida's east coast already undergoing or preparing for expansion (Miami, Port Everglades, and Port Canaveral), and Savannah, Charleston, and Norfolk to the north prepared for larger vessels, the need for increased capacity at Jaxport becomes even less clear. Finally, the Port is situated 13 river miles inland, necessitating 13 miles of blasting/deepening, more than is required at our other coastal ports.

The ability of the expanded Port to bring jobs to the city is presented as a main driver for this project. The Subject report states that "Coal, petroleum products, food & farm products, vehicles and parts, and construction materials made up over 75% of the cargo composition between 2006 and 2010" (PDF p. 109). The report also states that imports are projected to increase from 10.0 million tons in 2010 to 22.0 million tons by 2060, while exports are projected to grow from 4.9 million tons in 2010 to 14.6 million tons by 2060. If job creation is the government's focus, we would be better served by looking to produce more goods domestically than continuing to import an ever increasing tonnage of foreign goods.

The predicted future scenario for the river without completion of the Subject project, includes "increased pressure on transportation infrastructure, sea level rise, population growth and its added pressure on the natural system, increased development and stormwater runoff, and direct and indirect wetlands impacts..." Clearly this system will face great challenges in upcoming years without the proposed harbor deepening. In justification for the project, the report states, "In general, ecological resources in the project area are likely to be more affected by inter-annual variability associated with regional rainfall patterns (drought, storm events), potential sea level rise, and possible water withdrawals than induced salinity changes associated with deepening." The referenced withdrawals are up to 155 million gallons per day that may be removed from the middle St. Johns by the St. Johns River Water Management District to help meet water supply demands. We recognize that this is already a system under a great deal of natural and human-induced stresses, which should not be exacerbated by additional pressures such as the proposed harbor deepening.

We request that if this project moves forward, a 30 year moratorium on new dredging from the river mouth to Lake George be implemented to prevent the continued incremental damage of the St. Johns River. Additionally, we request that a cap be placed on the number of vessels permitted to call annually. This number should be lower than the current number of vessel calls since the project is touted to reduce vessel traffic on the river by allowing a smaller number of larger vessels to call.

Salinity Changes

We echo the concerns the Corps received from the Florida Fish and Wildlife Conservation Commission dated July 31, 2013, concerning submerged aquatic vegetation (SAV) modeling. The letter states, "FWC has concerns that should salinity increase upstream and coverage of SAV be negatively affected... sea turtles, manatees and other herbivorous marine species could be impacted by loss of available forage." Additionally, FWC pointed out that "Model results presented a comparison between the effects of different depth alternatives on the magnitude of effects on SAV, but not the temporal distribution of salinity stress to SAV." We also believe this temporal component is essential to assessing possible impacts even though the Corps acknowledges that "as the duration or frequency of salinity stress increases, the ability of SAV to recover from the stress diminishes" (PDF p.262). Additionally, we support FWC's recommendations to create or enhance eelgrass and/or widgeon grass in the river or its

tributaries, including Doctors Lake, and to create living shorelines. **Only these projects which add shoreline vegetation and SAV back to the river are appropriate mitigation for losses of these resources.**

The report states, “In comparison to the No Action Alternative, the 46-ft and 50-ft alternatives would increase the total moderate/extreme stress categories by 32 and 43 acres of potential SAV habitat” where moderate stress is defined as resulting in obvious decline in SAV bed coverage and extreme stress results in loss of most or all above-ground SAV biomass (PDF p.198). **We are concerned about any loss to manatee forage in the river, which is both an Important Manatee Area and contains critical habitat.** The changes associated with the project may require manatees to swim further upstream for optimal food sources (PDF p.292). While these distances may not seem significant to the Corps, any extra energy expenditure for manatees who are traveling, is undesirable. Of additional concern is the additional transit distance required in the river, which subjects the animals to increased threat of boat collision before returning to their travel route.

There are multiple instances in the report where potential project impacts are compared to natural processes. In the case of SAV impacts, it is stated that up to 296 acres of SAV could be affected by the project, but that these projected impacts would be less than annual differences in SAV coverage observed as a result of varying hydrologic conditions. This attempt to marginalize impacts is not valid, because these natural variations will continue, and any anthropogenic stresses will occur in addition to these natural events, causing cumulative impacts that are greater than the natural condition.

Erosion/Turbidity

We are concerned about any erosion that will increase turbidity, but are equally concerned with the shoreline being reinforced in any way that decreases manatee access to shoreline vegetation for forage.

Sea Level Rise

With regard to sea level rise and its future impact on the River, only the historic level of annual rise (0.4 ft) was considered. No estimates above this baseline were considered when modeling impacts, which seems naïve at best and misleading/dishonest at worst considering what we know about the possible accelerations in sea level rise that are predicted by some models.

Mitigation

It is unfortunate but not surprising that removal of the Rodman Dam and restoration of the Ocklawaha River has been rejected by the Port as possible mitigation. In truth, that is the appropriate scale of project that should be required to mitigate for the work proposed. Regarding the lands to be purchased for mitigation, it is not clear that these lands will be protected by a conservation easement in perpetuity. This condition should be required and stated explicitly in the report. Like FWC, we are also concerned about the 449 acres of wetland functional losses that may occur along the St. Johns and Ortega Rivers and Julington, Durbin, and Black Creeks. The report states that the cost for adaptive management implementation might be cut in half “if it is determined at 5 years post-construction that

the USACE can be released from future monitoring and mitigation activities associated with the project". We request that an independent panel of qualified scientists provide this assessment, not the Corps itself.

Direct Manatee Protection Concerns

The St. Johns River, including the first 13 miles that would be impacted by the proposed project, is an important habitat for manatees. Manatees from both the St. Johns and Atlantic management units utilized this area of the St. Johns River. Manatees utilize the river and tributaries around the project area, venturing into marsh habitats for forage. Manatees also forage in Mill Cove. Manatees travel along the River to Doctors Inlet and Juniper Creek, and on to Green Cove Springs to feed on SAV. Manatees not only eat SAV in this system, but also emergent and shoreline vegetation. Manatees tend to travel in the shallower portions of the river in this area, but may cut directly across a channel if that is the shortest path to their destination. Such movement patterns place them at risk of vessel collision.

We support FWC's request, stated in their July 31, 2013 letter that if authorized, the project adhere to dredging measures for manatees stipulated in the Joint Coastal Permit, in addition to standard manatee conditions. The report states that manatees in close proximity to dredging equipment may experience a temporary reduction in their ability to hear or avoid vessels. This danger is marginalized in the report by the suggestion that the impacts "should be brief and transitory in nature". However, cumulatively, over the duration of the construction time frame, the impact of the frequency and duration of this added noise to the environment could be significant and should not be disregarded.

If the Port does not have its own Manatee Protection Plan, it should develop one. If it does have an existing MPP, it should be updated. The Duval County MPP has also been undergoing updates for the last several years due to deficiencies, particularly with regard to protecting manatees from watercraft and large vessel collisions. **Funding additional on-water law enforcement patrols to ensure compliance with posted speed zones in the first 14 miles of the River would be an appropriate undertaking for the Port to help offset impacts that will be caused by the introduction of larger ships into the River. We are concerned with existing and possible future levels of vessel-related manatee mortality in the project area and believe more must be done to avoid future watercraft-related take from vessels of all sizes.** As depicted in Figure 1 and detailed in Table 1, there have been numerous manatee deaths within this area in recent years, caused by both large and small vessels.

The proposed blasting is of great concern. FWC communicated to the Corps that "Past blasting events in the river have provided insight into the difficulty of performing adequate aerial surveys in this waterway. It is extremely difficult to see marine animals in the river because of the depths, low visibility, and fast currents." For this reason, among others, FWC "encouraged USACE to consider the no-action alternative because of the high potential for blasting impacts to protected marine animals." The U.S. Fish and Wildlife Service also expressed concern with the proposed confined blasting technique. The Corps has committed to implement the confined underwater blasting conditions developed for Miami Harbor, for construction and test blasting in the St. Johns. The language relating to protected species observers that was used in Miami should be applied here (FDEP 5/22/12: JCP No. 0305721-001-BI). Due to the challenging nature of this project location, only the most skilled observers,

recommended and approved by FWC should be utilized for this project if it moves forward. Aerial survey observations should be contracted to FWC or Mote Marine Lab due to their skill level.

Figure 1:

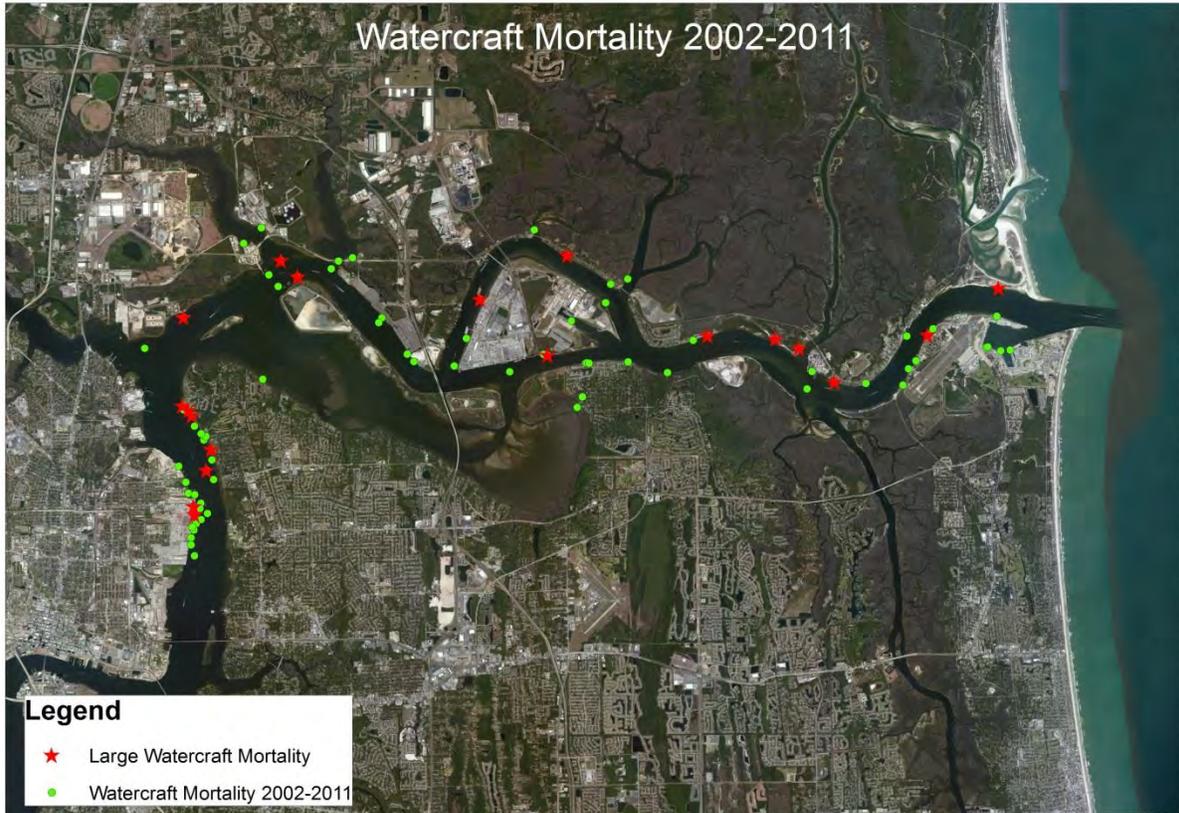


Table 1: Duval Watercraft Mortality 2002-Current

Field ID	Date	Sex	Length	Details	Large Vessel?
MNE0212	4/13/2002	F	340	Impact. Dorsal wound on head and neck; bruising, broken bones, and blood clots consistent with blunt force trauma to the head and neck.	Possible
MNE0213	5/1/2002	F	300	Both. Propeller cuts on peduncle and severed fluke; multiple lumbocaudal vertebral fragments.	Possible
MNE0226	7/11/2002	M	298	Impact. Wounds on dorsum; broken and luxated ribs; broken vertebrae; severed spinal cord; shredded muscle, blood clots; torn hemidiaphragm and lung.	No
MNE0227	7/15/2002	M	320	Impact. Dorsal wound on head and neck; bruising, broken bones, and blood clots consistent with blunt force trauma to the head and neck.	No
MNE0311	4/1/2003	M	334	Both. Superficial propeller wounds; torn and hemorrhagic muscle; broken ribs, braincase, scapula; torn brain, lungs, parietal pleura; blood clots.	Yes
MNE0312	4/2/2003	M	282	Both. Superficial, penetrating wound; broken ribs; vertebral separation; shredded kidney; torn lung, hemidiaphragm, bladder;	No

				blood clots	
MNE0315	4/15/2003	M	314	Impact. 4 large regions of abraded epidermis; broken, luxated ribs; torn liver, hemidiaphragm, colon; blood clots.	No
MNE0413	5/29/2004	F	307	Impact, acute. Fractured scapula. Hemorrhage, torn tissue, and blood clots. Subdermal bruising around scar.	No
MNE0414	6/4/2004	M	292	Propeller, acute. Penetrating wounds on head. Broken skull bones. Blood clots and hemorrhage. Meningeal congestion.	No
MNE0518	7/12/2005	M	289	Impact, acute. Long linear wound; lacerated muscle; broken ribs; hemothorax; torn lung; blood clots; feces in pleural cavity.	No
MNE0520	7/22/2005	M	312	Impact, acute. Long linear wound; lacerated muscle; broken ribs; hemothorax; torn lung; blood clots; feces in pleural cavity.	No
MNE0610	4/17/2006	M	283	Impact, acute. Large, non-penetrating wounds; torn, hemorrhagic muscle; fractured, luxated ribs; rents in lung; fractured kidneys; hemothorax; hemoabdomen.	Yes
MNE0615	6/5/2006	M	311	Impact, acute. Shredded, hemorrhagic muscle; vertebral separation; broken, luxated ribs; torn hemidiaphragms; lungs, stomach, duodenum, ventricle; diaphragmatic hernia; hemoabdomen.	No
MNE0616	6/15/2006	M	312	Very Large Propeller, acute. Nearly transected carcass; shattered skull, earbones, scapula; severed trachea; fractured ribs, vertebrae; lacerated muscle.	Yes
MNE0617	6/15/2006	F	310	Both, acute. Superficial, penetrating wounds; shredded muscle; vertebral separations; broken ribs; shattered skull, earbone, scapula; blood clots.	Yes
MNE0618	6/15/2006	M	310	Impact, acute. Contusion on ventral abdomen; broken, luxated ribs; broken vertebrae, scapula; vertebral separations; torn muscle, hemidiaphragm; blood clots in lung; flipper bones separated, exposed.	No
MNE0711	4/13/2007	M	330	Propeller, acute. Carcass transected into two pieces by large propeller; propeller wounds; broken, luxated ribs; fractured skull, mandible, scapula.	Yes
MNE0738	12/6/2007	M	295	Propeller, Acute. Wound severing peduncle; fractured ribs, vertebrae, skull; luxated ribs, vertebrae; torn lung, hemidiaphragm; hemothorax, abdomen; hemorrhagic muscle; blood clots.	Yes
MNE0818	6/10/2008	M	326	Impact, acute. Superficial wounds; luxated, fractured ribs; fractured scapulae, vertebrae; vertebral separations; torn lung, heart; blood clots; hemothorax, pericardial effusion.	Yes
MNE0819	6/12/2008	M	303	Both, Acute. Transecting propeller cut; superficial scrape; fractured ribs, scapulae, sternum, vertebrae; vertebral separations; luxated ribs; blood clots.	Yes
MNE0824	7/1/2008	M	325	Propeller, acute. Transected carcass; watercraft wounds; fractured skull, sternum, vertebrae, scapulae; missing vertebrae; severed bronchi; perforated lungs, hemidiaphragm; luxated ribs; blood clots.	Yes
MNE0838	10/22/2008	M	320	Impact, acute. Superficial wounds; fractured ribs, kidney; luxated ribs; vertebral separation; severed heart, cardiac gland; torn hemidiaphragms, colon, SI, stomach, duodenum; severed, torn lungs	Possible
MNE0839	10/25/2008	U	300	Both, acute. Transected carcass, missing caudal half; transected, crushed head, missing skull bones; fractured, missing ribs; luxated rib; blood clots; missing internal organs.	Yes
MNE0840	10/27/2008	M	315	Both, acute. Decapitated; fractured, luxated ribs; fractured vertebra; shredded muscle; blood clots; torn colon, small intestine, liver; missing heart.	Yes
MNE0916	3/13/2009	F	298	Impact, acute. Fractured, luxated ribs; fractured vertebra; vertebral separation; torn hemidiaphragm, lung, parietal pleura, airways, heart, liver; hemothorax; bloody, frothy lungs; blood clots	No
MNE0921	4/13/2009	F	300	Propeller, acute. Transected, recovered in 2 pieces; fractured, missing ribs, vertebrae; hemorrhagic bone; shredded, hemorrhagic muscle; fractured sternum.	Yes

MNE0934	7/15/2009	M	253	Impact, acute. Superficial watercraft wound; fractured ribs; vertebral separation; blood clots; congested tracheal mucosa.	No
MNE0935	7/15/2009	M	270	Propeller, acute. Transected; decapitated; fractured ribs, vertebrae, sternum; hemorrhagic muscle; blood clots; transected lung.	Yes
MNE0937	7/19/2009	M	316	Impact, acute. Superficial linear wound; dark red dermis; torn, shredded, hemorrhagic tissue; fractured vertebrae; blood clots; congested tracheal mucosa; sediment airways.	No
MNE0938	7/19/2009	M	220	Propeller, acute. Transected; fractured ribs, vertebrae; luxated ribs; vertebral separation; torn, shredded, hemorrhagic muscle; missing internal organs.	Yes
SWFTm0916	7/25/2009	F	336	Propeller, chronic. Necrotic watercraft wound; fractured vertebrae; partial vertebral separation; necrotic, shredded, hemorrhagic tissue; dark, caseous lymph nodes.	No
MNE1034	5/19/2010	M	324	Impact, acute. Superficial wounds; hemothorax, -abdomen; fractured ribs, scapula, vertebrae, kidney; luxated ribs; skull-vert separation; blood clots; torn lung, colon; shredded, hemorrhagic muscle.	No
MNE1035	5/25/2010	M	350	Impact, acute. Fractured scapulae, ribs, vertebrae; vertebral separation; luxated ribs; bloody lung; torn transverse septum, kidney, parietal pleura, hemidiaphragm, liver; congested airway; blood clots; hemoabdomen.	Yes
MNE1115	4/1/2011	M	340	Impact, acute. Superficial wounds; fractured ribs, vertebrae, flipper; luxated ribs; hemothorax; torn hemidiaphragm, lungs, parietal pleura; bloody lungs, eyes, nares; shredded, hemorrhagic muscle; blood clots, mucus airways.	No
MNE1123	6/16/2011	M	330	Propeller, acute. Transected; fractured skull, ribs, vertebrae; luxated rib; vertebral separations; blood clots; shredded, hemorrhagic muscle; hemorrhagic ribs.	Yes
MNE1132	7/5/2011	M	272	Impact, acute. Superficial wound; fractured, luxated ribs; hemoabdomen, -thorax; torn lung, hemidiaphragm, parietal pleura, duodenum; kidney pallor; loose ingesta abdomen; shredded, hemorrhagic muscle; blood clots.	No
MNE1136	7/31/2011	M	311	Impact, acute. Superficial wound; hemorrhage dermis; fractured ribs, vertebrae; luxated, sub-luxated ribs; vertebral separations; blood clots; bilateral hemothorax; shredded muscle; torn parietal pleura.	No
MNE1142	9/13/2011	M	327	Impact, acute. Superficial wound; hemorrhage dermis; fractured ribs, vertebrae; luxated, sub-luxated ribs; vertebral separations; blood clots; bilateral hemothorax; shredded muscle; torn parietal pleura.	No
MNE1227	7/30/2012	F	279	Report Available from FWC	
MNE1337	6/12/2013	F	310	Report Available from FWC	
MNE1338	6/13/2013	M	297	Report Available from FWC	
MNE1364	9/6/2013	M	296	Report Available from FWC	
MNE1365	9/7/2013	F	289	Report Available from FWC	

The Subject report states that blasting will probably occur in winter when manatees are less likely to be in the area. Unfortunately, there are two unauthorized warm water discharges in the direct vicinity of the project area that continue to attract manatees in the winter months, greatly increasing the likelihood of manatee presence during blasting and other fall, winter, and spring construction time frames. The Jacksonville Electric Authority's (JEA) NGS plant and District 2 Outfall pipe in the St. Johns River attract manatees. Reports detailing the history of the problem are available from the U.S. Fish and Wildlife Service's Jacksonville office and also from JEA. SMC can also provide copies of reports, if desired. In summary, the NGS plant has been plagued in recent years with breaches in their containment wall. This has resulted in leakage of water that has become an attractant to manatees. While JEA claims no current leaks, the possibility of future leakage/attractant issues at this site is a possibility. Manatees access JEA from the River, through the Blount Island Channel, and into San Carlos

Creek. The D2 outfall is located in the St. Johns, near the western terminus of the proposed project. After years of discharge that attracted manatees, the majority of the flow was rerouted in 2012. Unfortunately, a major failure in the pipe once again has full discharge coming through the outfall and attracting manatees in 2013. Manatees have been documented at both these sub-optimal sites during non-summer months in recent years, resulting in rescues and cold stress mortality. Figure 2 and Table 2 present cold stress-related manatee mortality in the project area in recent years. The Corps and Port need to stay engaged in the process to correct these unauthorized attractants and make sure that manatees are no longer overwintering in this area by the time construction begins (if authorized), as it would greatly increase the likelihood of manatee presence in the project area. It will also take several years once the discharges stop, for manatees who have become reliant on these sites, to modify their behavior and move on to other sites.

Figure 2:



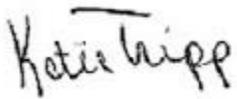
Table 2: Cold Stress Mortality Duval 2002-2013

Field ID	Date	Sex	Length
MNE0504	2/17/2005	F	240
MNE0703	2/13/2007	F	211
SWFTm0802	1/8/2008	M	213
MNE1146	2/27/2011	M	307
MNE1203	1/25/2012	M	215
MNE1304	1/6/2013	M	210
MNE1311	2/1/2013	F	212

Finally, we are concerned that the altered residence time of river water under with-project conditions will increase the potential for algal bloom development. We hope that your modeling is correct, and that changes to phytoplankton abundance will be minor, because we have seen the dire consequences of algal blooms on other river and estuarine systems and such impacts could be devastating on the St. Johns.

Thank you for considering our comments on this substantial project with significant implications for the St. Johns River and its aquatic resources.

Sincerely,

A handwritten signature in black ink that reads "Katie Tripp". The signature is written in a cursive style with a horizontal line above the "i" in "Tripp".

Katie Tripp, Ph.D.

Director of Science and Conservation

PUBLIC COMMENTS ON
JACKSONVILLE HARBOR NAVIGATION STUDY DRAFT
INTEGRATED GENERAL REEVALUATION REPORT II
AND SUPPLEMENTAL ENVIRONMENTAL IMPACT
STATEMENT

Stodola, Paul E SAJ

From: James Crumitie [James.Crumitie@jaxport.com]
Sent: Wednesday, June 05, 2013 4:49 PM
To: Stodola, Paul E SAJ
Cc: James Crumitie
Subject: Harbor Deepening Project:

This is a dynamic project that will speak volumes to Jacksonville Port authority and all the major players logistically all over the United States and foreign in the next century.

Please note that under Florida's public records law (F.S. 668.6076), most written communications to or from the Jacksonville Port Authority are public records, available to the public and media upon request. Your email communications may therefore be subject to public disclosure. If you have received this email in error, please notify the sender by return email and delete immediately without forwarding to others.

Stodola, Paul E SAJ

From: Chris Kauffmann [Chris.Kauffmann@jaxport.com]
Sent: Tuesday, June 18, 2013 6:35 PM
To: Stodola, Paul E SAJ
Subject: JACKSONVILLE HARBOR DEEPENING TO 47 FEET

Paul,

I am going on record as fully supporting the Jacksonville Harbor Deepening project to 47 feet. This project will quantifiably create 10's of thousands of local and regional jobs and have billions of dollars of new economic impact on the local and regional economy.

Chris Kauffmann
Jacksonville Florida

Sent from my
iPad

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Stodola, Paul E SAJ

From: Holt, Ray [Holt@coj.net]
Sent: Wednesday, June 19, 2013 11:41 AM
To: Stodola, Paul E SAJ
Subject: Channel deepening in Jacksonville

Dear Mr. Stodola,

I'd like to voice my support for the St. Johns River deepening project. I look forward to working with all the stakeholders to develop an environmentally appropriate plan, and a financial package to make it happen. As the westernmost port on the east coast, Jacksonville is uniquely positioned to provide cargo to the Midwest US faster than any other port.

I appreciate all your hard work on this project.

Best,

Ray Holt
District 11, Jacksonville City Council

Stodola, Paul E SAJ

From: Summers, Michael [n00824657@ospreys.unf.edu]
Sent: Wednesday, June 19, 2013 8:43 PM
To: Stodola, Paul E SAJ
Subject: JAXPORT 47' Project

As a new and future resident of Jacksonville I hope to see this project proceed and completed in the near future for the economic benefit it will bring to Jacksonville and the opportunities it will provide for me as a graduate from UNF's T&L Program and my fellow alumni.

Thank you for this opportunity to comment on this project.

Mike Summers

Stodola, Paul E SAJ

From: John Hermsdorf [John.Hermsdorf@jaxport.com]
Sent: Wednesday, June 19, 2013 9:15 PM
To: Stodola, Paul E SAJ
Subject: Deepening the St. John's river channel to forty seven foot depth

Sir,

If Jacksonville, Florida, wishes to remain a major east coast port it must be able to accommodate larger ships. Without a deeper channel those ships and the business they support will go elsewhere. I do not believe that a deeper channel will affect the overall health of the river's ecosystem.

Thank you,

John Hermsdorf

Jax Port crane technician

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Stodola, Paul E SAJ

From: Gloria Tomkins [Gloria.Tomkins@jaxport.com]
Sent: Thursday, June 20, 2013 5:27 AM
To: Stodola, Paul E SAJ
Subject: Deepening project

Mr. Stodola,

It is imperative that the deepening project proceed for the good of JAXPORT and the community. IF we are to grow and create jobs the port has to be competitive with other ports in Florida and the east coast.

Thank you for your consideration.

Gloria Tomkins

Cruise Terminal Supervisor

Jacksonville Port Authority

9810 August Drive

Jacksonville, Fl. 32226

Cell-(904)487-2076

Fax-(904)357-3405

gloria.tomkins@jaxport.com

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Stodola, Paul E SAJ

From: George.Gabel@hkklaw.com
Sent: Friday, June 21, 2013 5:46 PM
To: Stodola, Paul E SAJ
Subject: Jacksonville Harbor GRR2 Deepening FS

Dear Mr. Stodola:

I would like to offer comment on the Jacksonville Harbor Navigation Study being done by the U.S. Army Corps of Engineers, Jacksonville District.

First, thank you to the staff members who have contributed to the analysis of this complex issue, especially as it pertains to the environment and engineering plans to offset any impacts of the deepening. While we all want to see the port grow and succeed, of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we as a nation are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. We will be contacting our elected officials at every opportunity to ensure they know the importance of your organization's continuing contributions to these vital waterway projects.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have our complete support and heartfelt appreciation.

Sincerely,

George Gabel

Chairman, North Florida Logistics Advisory Group

George Gabel | Holland & Knight
Partner
50 North Laura Street, Suite 3900 | Jacksonville FL 32202

Stodola, Paul E SAJ

From: Jeff Price [Jeff.Price@jaxport.com]
Sent: Tuesday, June 25, 2013 4:23 PM
To: Stodola, Paul E SAJ
Subject: public comment for inclusion in the Jacksonville Harbor Deepening Study

Deepening the federal channel to 47 feet in the Port of Jacksonville is vitally important to securing the long-range economic benefits the port brings to Northeast Florida.

Cargo ships are big, and new cargo ships are even bigger. As these new, larger vessels come online, the ships that used to sail between Europe and Asia, or between Asia and the U.S. West Coast, will begin to sail to Jacksonville, Fla. We see this happening already - in January 2012, the 6,600 TEU vessel Yang Ming Milestone docked at the TraPac Container Terminal at JAXPORT's Dames Point facility. As the U.S. Army Corps of Engineers report illustrates, and as economists and logistics professionals continue to report in the trade press, ports along the U.S. East Coast can expect to receive more and more 6,000 to 9,000 TEU vessels, not only from trade flowing through the soon-to-be new locks at the Panama Canal, but also via the Suez Canal. To carry a full complement of cargo, those 6,000 to 9,000 TEU vessels require more depth than Jacksonville's current, 40-foot federal channel provides. We need a deeper channel to accommodate those ships, to bring more cargo through Jacksonville, to increase the jobs dependent upon and related to port activity, and to enhance the economy of the Northeast Florida region.

This project will not be completed without regard to the environment. I'm confident the skilled biologists, engineers, scientists and project contributors at the U.S. Army Corps of Engineers have mitigated environmental costs to the greatest extent possible, and our river - with its sundry marine life and with all the creatures who depend upon its health - will continue to thrive. The St. Johns River is an exquisite natural resource and a source of pride for all of us fortunate enough to live in Florida, and I believe that environmental and economic responsibilities can both be respected and preserved within the framework of this proposed project.

This project, like many others planned along the U.S. East Coast, is a necessary infrastructure upgrade to keep America competitive. If it is not completed, we can expect to wait longer to receive goods, at higher cost. We can expect Jacksonville to be a second tier port, fit to serve the Caribbean and a segment of the automobile market. We can expect to watch the large container ships sail past our city, bringing their cargo and the jobs they represent, to other markets.

Jacksonville deserves better.

Stodola, Paul E SAJ

From: Bowman, Aaron [abowman@jaxusa.org]
Sent: Thursday, June 27, 2013 3:46 PM
To: Stodola, Paul E SAJ
Cc: George Gabel; Mark Crosley; Mallot, Jerry; Quinn, Chris
Subject: 47 foot dredging for Jacksonville port

Mr Stodola, as the Duval County Commissioner for the Florida Inland Navigation District (FIND), I am providing my strongest endorsement for the deepening of the port of Jacksonville to 47 feet. As I am sure you are aware, FIND ensures safe navigation on the Florida Intercoastal waterway as well as sponsors Waterway Assistance Programs, waterway cleanup support efforts, derelict vessel removal, and several other activities. The economic impact of having the Intercoastal waterway navigable at a depth that supports commerce is enormous due to the businesses that use the waterways, recreational use, and increased property values.

As commercial cargo vessels are increasing their size and depth, it is absolutely vital that Jacksonville responds with an effort that supports the new class of vessels or we will simply erode as a major player in the global economy. FIND and JAXPORT have a long standing positive relationship in respecting and supporting the maintenance of waterways in actions that serve the population of Florida to the fullest extent.

I deeply appreciate the support that the US Army Corps of Engineers provides FIND and I am available for additional comment if needed.

Best Regards-Aaron Bowman

Commissioner, Duval County

Aaron Bowman
SRVP Business Development
JAXUSA Partnership
(c) 904-629-2829
(w) 904-366-6671
Sent from my iPad

Stodola, Paul E SAJ

From: nancy labry [airyaerie@att.net]
Sent: Monday, July 08, 2013 1:08 PM
To: Stodola, Paul E SAJ
Subject: dredging the St. Johns River harbor

I have lived in the area since 1964, and I have frequently wondered why Jacksonville did not take full advantage of its port facilities. I have watched with dismay as other ports walked off with the business, even Brunswick of all places. I know that Port Everglades has dredged to accommodate large ships that pass through the Panama Canal, and continues maintenance dredging. I also know that South Carolina and Georgia have reached an agreement to dredge the Savannah River. We must dredge to save the port. If we dredge, the river will recover from the slight inflow of salinity. If we do not dredge, will Jacksonville recover from the loss of industry and jobs? Nancy Labry, a concerned citizen. Address: 2199 Astor St., #501, Orange Park, FL 32073. Phone 904-278-5299.

Stodola, Paul E SAJ

From: Ed Stinson [estinson@aebfl.com]
Sent: Thursday, July 11, 2013 5:12 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we, as a nation, are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. I fully support the deepening of the Jacksonville Harbor.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Ed Stinson

12964 Huntley Manor Drive Jacksonville, FL 32256

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DTA36CAR9WZ0n0U0emgoMxyzzxXgBPfzyOIonidNOM9Wn08fpmghJXjfLLL5-2FwsuQJ6sW-2F81eN2fyucqeJ8vQpdXpchtgNDV1TYVR6VBkLPJBoH1T0XUA5whYBVQ5YRXYxXb34HMRTykwIUmh7uniT1>

Stodola, Paul E SAJ

From: Timothy Adkinson, PE [tadkinson@adkinsoneng.com]
Sent: Thursday, July 11, 2013 5:47 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Timothy Adkinson, PE

4639 Trevor Creek Drive S Jacksonville, FL 32257

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DQz11kLXfPSb0FUVEvTM1sYHvG8UVY6FPtUH6M35CFP91sWFAV-2F7wY3td6hD7brDeji-2FXhAfuwTKkQ4KKjLwoimonGXeLmZuw2nrZ53SPhktUJkSFmrd6Pyw1P-2FbTWBi2k3xIoMxRGgApZwaRd12I9L>

Stodola, Paul E SAJ

From: Marie Watson [jodabo@comcast.net]
Sent: Thursday, July 11, 2013 6:00 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Marie Watson

1330 Trailwood Drive Neptune Beach, FL 32266

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSEHtEgU8nxAZPkSLXR4U20-2BdqrQnw-2Fqz1Uqt3nwFKQbPrQxw3Tnz8IArkJ11AfQ07Vsg0pKrZc1sfFvPGnaJ40cOXG9VFyE-2Ba9pkK0-2B1eb0AtB3JROQuLlxGEZM-2BtEiCciqftchZcVsg4chf1ZCrgN>

Stodola, Paul E SAJ

From: Ralph Brown [rbrown43@bellsouth.net]
Sent: Thursday, July 11, 2013 6:11 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Ralph Brown

76 Tallwood Road Jacksonville Beach, FL 32250

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DRBvGpvhOmX0KvEqEQ1Srd12Mo8blgGicgUGjC4PHDMV1KUasA2jjTENjV8DCKi7kIykLdJQX5Q14TEVHq2uPX3huDqfCxzJVJtKt7OCRRvm0piqJomLf9iE2tdCHxYIYHjw7L9VG4vSnktNy2mUdM3>

Stodola, Paul E SAJ

From: Bonnie Arnold [bonnie@bonniesfloraldesigns.com]
Sent: Thursday, July 11, 2013 6:27 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Bonnie Arnold

2017 Reed Ave Jacksonville, FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DRZn218Dt59v-2F8AqEJOXTQ4F7GK6z0bpfeK2kKY-2FnWCZk-2Fma0W5o5izxyRnRxy-2BSKMOLfWmwXVSdF88MY143xE9tt5LJIRHg-2BmJ9ddQ4z-2BzDNSroVqUfC6PDrz7RWCai-2F16lmvRenOB-2FMQOL5Q1Fd5y>

Stodola, Paul E SAJ

From: Brad Denny [Brad@barberjax.com]
Sent: Thursday, July 11, 2013 7:13 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Brad Denny

1280 Ribbon rd JAX , FL 32259

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Stodola, Paul E SAJ

From: Mark Greco [marksellsfirstcoast@gmail.com]
Sent: Thursday, July 11, 2013 7:16 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Mark Greco

600 W. Moss Wood Trace Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSaXFIj-2FBT1ATREZT-2FK2Se-2BEEtRA9GNz7FdMlMYnNw78n-2BFgAexMB3QiygFogciYmGeZhCVxxrNn-2F6zeXYw-2BHgPw80B9Sso-2F6L8dFuhyzy7YsCJJZpIQzTEotAH-2FfhfmeC6GjUwAVq7f7IzONnJGkbc>

Stodola, Paul E SAJ

From: Mark Goldwich [mgoldwich@yahoo.com]
Sent: Thursday, July 11, 2013 8:04 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Mark Goldwich

2601 michaelson way Jacksonville, FL 32223

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DRiDv1nv1knsQVFVK5K8r4awwXj7n5wTFvXgvF1Sb-2BB2f70etZLQCwKfCT8f6qCPF8GCLR6BkU-2BNAqrKsqA4UF8VRt-2BPt8QTknOTRe9ptlvjbJong84L02RkDrMu9-2FTnlQBolMVXnJNnpIPWb-2FPIktI>

Stodola, Paul E SAJ

From: Richard Bowers [bowe3641@bellsouth.net]
Sent: Thursday, July 11, 2013 9:03 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Richard Bowers

6504 Burnham Circle Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DS7-2BiYaFlgFAzVsZDsqkm-2B11BzxFOzWQtCHPowFAuv7xYyJxywT6DH0zM2PR810je1HOA5pVQPONsyrXkNqowFQ-2BbXSD1wbNjVgVtMq-2Fn8F5IYbIEa-2FomoBZluR-2BcDIWXHTKduXJSW51Pg8C6eo6hxD>

Stodola, Paul E SAJ

From: Michael Fleet [michael.fleet@marriott.com]
Sent: Thursday, July 11, 2013 9:03 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Michael Fleet

10820 Blue Pacific Ct Jacksonville, FL 32257

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DQStDxD01-2B-2Bi0uebyMJelcU8B857q-2F5cs5ye0aFCRgO-2BehuR3mLHhFlUIs3rsAD1r5di-2Bhq7XTjmGwynrKEZb0SJoGPskUt4R4Abz107s-2Ba6KooNoknSCJmGLa5C-2F6T1vwA-2BHMve10u-2FrEdQhqb6cfc>

Stodola, Paul E SAJ

From: David Reese Riggle [Reese.riggle@gmail.com]
Sent: Thursday, July 11, 2013 9:42 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

David Reese Riggle

1334 inwood terr Jacksonville, FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTL-2B0pz8ktomh1-2F-2F9wuld3Qjhiy6UZ6qA7qctENOjRuTdsbt3RFyuTpXTj4MLlB-2B5BXHilJCR9xh5FiU231A-2FXd1XMtiiG04Cnk4dmQjPHvDMh2lxN1upMHj39rUtMpgPu5Ht-2FUs0vZSMHAOLfwYJxa>

Stodola, Paul E SAJ

From: Shawn DeVries, Esquire [Shawn@devrieslegal.com]
Sent: Thursday, July 11, 2013 9:58 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Shawn DeVries, Esquire

1540 monument rd suite 4 Jacksonville , FL 32225

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DQ3E18mC5xROJWMfrFZxNEnnR47mW9Df0ZpB3e99r1aD25gzB-2BXoDksPy0vyVpE5LtTz3ad3rM07J3Ny1GHthEBHaStQh3FmFzsGLEBZ891XJZqWn1Gvr25CI6wBTHUS1Sp6HGgpFExJ1bVHN3joX2Z>

Stodola, Paul E SAJ

From: Newt Huffman [newtonhuffman@comcast.net]
Sent: Thursday, July 11, 2013 10:06 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Newt Huffman

964 N. Woodbridge Hollow Rd. Jacksonville, FL 32218

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQq27-2F08fKZg1rkPuAgo5bmwCI5FPTdJCpuQN-2Bg3gBtkSUvTI03NrHH-2F9GmVcMNjX8402mCwpVBe-2BVbwja9kh6TPin3-2FFxyqqqW6ZvSIBYDGNSfg1cvMD8EXawZvqIX7v6d-2BXYrxMZvFBvPBsvUqhSQ>

Stodola, Paul E SAJ

From: Carolyn Clark [C.clark@comcast.net]
Sent: Thursday, July 11, 2013 10:15 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Carolyn Clark

1151 Salt Creek Drive Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DSlOBjatynWU3fMD1gwC4nK-2F3netwce2xwPpPeTaTlKLEaM6viJAeKgU53cpxpFTddC1PyCLqdiPZSTB-2FsCP-2FfcNzZ2XKRu99QUwNwTB0JMEHsHGwKyBkF73EAX65BRazmS-2BduWBRS9GtTwouPQ-2F5my>

Stodola, Paul E SAJ

From: Vijay Panneerselvam [arivijay@gmail.com]
Sent: Thursday, July 11, 2013 10:18 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Vijay Panneerselvam

1005 Lauriston Drive Saint Johns, FL 32259

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRfk1KYmXpFiuZnLq42ikTQ06uQ1oJjPA5iKgc4vCxsUzTQgomZ5d8GzUD656rLA6mykkfjD11AaSMayi606TYfORQao6SeCDlm43A0sjoI7cVP6tWTpKrdhUu-2FJ-2FumEkdq2YBYfeqntNtGHTfisCKY>

Stodola, Paul E SAJ

From: Paul Sollee [solleep@bolles.org]
Sent: Thursday, July 11, 2013 11:03 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Paul Sollee

2510 Spreading Oaks Ln Jacksonville, FL 32223

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DToKd-2FWKFhY7de-2Bixjl9C224bmsEKZvb50pEYQypXlUz5TrHoJfZ-2FxbKGxZ9z5RC07-2BP2y2-2B90TxpzeVnorAnTcy-2B6Edl6TDHr8I8MFhRHj9GIbPxKN9KJjd84RNCcy9siQnidnL7fOKQNGUeWbBdo-2B>

Stodola, Paul E SAJ

From: Mike Davidson [Mikejr@mikedavidson.com]
Sent: Thursday, July 11, 2013 11:03 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Mike Davidson

9650 Atlantic Blvd. Jacksonville, FL 32225

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DR1nP1-2BGxAOPhqMKebOwyX9ESJ6gwAGhtpOfIFzxLIUfqu-2BvkQzk8Zx1ZznNoIcRMDqhrp16zTq6nWGKugYQ6yeVwtuuvJh3Ajsdt-2F5w43agq15L6mESFGzg6k1CduN4Cyt620HSiy1gNirTdb0uYxi>

Stodola, Paul E SAJ

From: Janet Owens [jowens@lisc.org]
Sent: Friday, July 12, 2013 5:30 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Janet Owens

4873 Jaybird Circle North Jacksonville, FL 32257

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSTE1RE7n-2F77uN6xWHL0swwLmDLtPz7AoiEaTD8EW6sKOCHR-2FvANb70oO3RmbmNJBUIquHiwYNV-2Fkfy1cPiV0AW4d60ddPSn7QahYL01eTbv4yIbrWPEQp3z8Dv13Jo5FAvcqQFn3F7dKpemzWBTpsG>

Stodola, Paul E SAJ

From: John Harrington [Harrington@bizbuysellfl.com]
Sent: Friday, July 12, 2013 5:41 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

John Harrington

5000-18 US Highway 17 South, Suite 251 Fleming Island, FL 32003

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DR3Skp-2FmiBYiJ0QuDyS-2BVXwRNkL9-2F-2BbvpOUt8ZFwxzegwy05Hdnb2semVQg-2BENAgNG0B4zpyBE-2BxYI617whQYTLI4rMo7rTy0LAW717bSACI7wKIHDWDNaxrNdmzm4IMGQHqHop-2B7eLY85AroicEaz>

Stodola, Paul E SAJ

From: Steve Rankin [steve@jcci.org]
Sent: Friday, July 12, 2013 6:31 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Steve Rankin

2434 Atlantic Blvd Jacksonville, FL 32207

<<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQd17UZ4kRg0XMKKw3FLCJAKHq54VImNbUALc7Te2D9A11nrnDe55JOaFmdQLf7kxk846kQsIYrA-2B097Hj-2BpsgvFiOsX-2B0a8jXMGSeq6V2EqxHs3NP5YtXf7zjiFMch-2F-2F0bu4Tlvd-2B5z54NKM32-2BJ58>>

Stodola, Paul E SAJ

From: William Knight [captbill56@yahoo.com]
Sent: Friday, July 12, 2013 7:02 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we, as a nation, are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. I fully support the deepening of the Jacksonville Harbor.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

William Knight

611 Ponte Vedra Lakes Blvd Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQzuBIgiGVSC60F-2BtgjD1qBKh03ldNu0KzjvBztkty-2Fm6ILd4Qn39YJmJx45Er3izQBeu8-2FHnExe5t-2FnyJhux8KcVs5-2BHkkOTZ-2Fyr-2Bo8yPVL00n0iCmJkb6PBbrDEuVn0HOVgrd9POqItGhdOimMrvU>

Stodola, Paul E SAJ

From: Marla Kennedy [m.kennedyeande1011@yahoo.com]
Sent: Friday, July 12, 2013 7:26 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Marla Kennedy

2801 Canyon Ct Orange Park, FL 32065

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DT109wB59-2BfFvz1gYb217PqzTPnnYzBayh4rKXaGPxD5JJJaM1RmUqhHsPKDgkT5hq2MLVSEOWYtNQXtmfaZ0dGGd-2FXzPTpe9ckSwT7EXfZSV4nOGDPJevXBCpDmpybdkx1fgg01yY05cKF9Z4rezZVc>

Stodola, Paul E SAJ

From: Chris Layfield [chris_layfield@yahoo.com]
Sent: Friday, July 12, 2013 7:21 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Chris Layfield

7766 Burnt Oak Trail Jacksonville, FL 32256

<http://mailer.channeledemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DS0gU7VHHEOL9g4iEk-2FXtcFxfctH0ppvFoIvsy3iLqpJ-2F25JEDMk5AsDhRUXhOEVx50qB8btZGwHuN-2BFmHFcdFK670-2F9Wt7S140y3WVxaP2CJ0oMBf2acP1lXgB1q-2FRC0EkpEBfXOI-2FRS0hkMLWw0AI>

Stodola, Paul E SAJ

From: Nancy Coppen [ncoppen@hotmail.com]
Sent: Friday, July 12, 2013 7:46 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Nancy Coppen

4769 Lannie Road Jacksonville, FL 32218

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DTYa-2FPFVDqoKdzeu1t553dqlxng97wXayx4hZ5WPusRowSSLqEjTL6-2BSWZpZSSCOcfQJhZQmRZRKDXOqmGZd-2FaqQNNkkWsJYsjgAee7C-2FCJHT9kkJ0Xx4-2FrguHH7Vm36PCufFgcpXEu1bWRLMtOxAd>

Stodola, Paul E SAJ

From: Debora Johnston [djhonston@keiseruniversity.edu]
Sent: Friday, July 12, 2013 7:53 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Sincerely,

Debora Johnston

6430 Southpoint Parkway Jacksonville, FL 32224

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DQyveCwhzBLmOu3SZeJPGdOaH3Bb7LXAT3ERQOZZ8AI-2B4cR8B9sLxZrLmR5OaP3wmUxvOLZ9v13Aiuy2MXHkjIAKUeiJ4xSZ7WmzXhkdQFQ-2FTfWAYFN5E3VbHvU6jtAjjTsmUJVWQyFvOAbvZz9KMh>

Stodola, Paul E SAJ

From: Robert Hyde [bhyde@rtlaw.com]
Sent: Friday, July 12, 2013 7:56 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Robert Hyde

3217 Riverside Ave. Jacksonville, FL 32205

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DSPSS2cjUrbIrrOfIXuXGtonKHe8X-2FIPT83uaGQ2wYhRZEwOh75Uv3x4mAPaq4BdMLKb4vGNYNnctthuKc3ej-2BpbYyDKnrWW3cvtYA0c0Mzv1YptDl15Qfw-2BT0k3dsct5hyX3dBy41Jl2bwyUpEM5iK>

Stodola, Paul E SAJ

From: Louis Nutter [Louis.Nutter@cbre.com]
Sent: Friday, July 12, 2013 8:02 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Louis Nutter

225 Water Street Jacksonville, FL 32202

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DTvNy9HA-2BRqQTrzGmAyR-2FWZP-2BqGkExZm6DgqCMTCHEfWSXUKTorkvOJF-2BXxpypiCUEbtIcCmKWAb-2FcEHK-2Fzel7d6OH808jXIRj2ccPK4c1fIxSzrEcmfX-2FYu1hvR7ga5egUsJMLft2qmPPdrAw0jEwn>

Stodola, Paul E SAJ

From: Cynthia Breslin [cbreslin@121fcu.org]
Sent: Friday, July 12, 2013 8:09 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Cynthia Breslin

16073 Shellcracker Road Jacksonville, FL 32226

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQYXIAOREcqU26ozp7aVBi1r09HL2-2FzoZVkiCZv-2FcxhVa8Dpl2UzrjWRSrFah9weo30a6fuH-2FGdUwUU2zGvRJDzw7tofJh6FbLLnIMJ-2BbNnQPAr1-2BYDr6J18akDLdDXs-2Bwqwrfl-2B-2FZaifm9HB0el90o>

Stodola, Paul E SAJ

From: JACKIE REVELS [JACKIEREVELS@SYNOVUS.COM]
Sent: Friday, July 12, 2013 8:10 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

JACKIE REVELS

12744 MOOSE RD JACKSONVILLE, FL 32226

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DSdYYnttS-2F9oLad19idRbrWM05V3J5fHRX-2BA1UXuaUbMgp3NP1PiuuPB7uRYstVSFa5AaxI6ySDJhKdkp6um78Wcw5qcxJBPDgRenG4mPaa-2BsMPuQYKKbYYKa5Y5o1P931J-2Fezfp199Jg8S4-2BnukG3q>

Stodola, Paul E SAJ

From: Charles R Armstrong [charles@d2-cm.com]
Sent: Friday, July 12, 2013 8:14 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Charles R Armstrong

12348 Brighton Bay Trl N Jacksonville, FL 32246

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Stodola, Paul E SAJ

From: Dennis Kelly [dennis.kelly@trapac.com]
Sent: Friday, July 12, 2013 8:18 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Dennis Kelly

9834 New Berlin Rd Jacksonville, FL 32226

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DT3RURFXtaex5ZN77Y544f5QUPc7mTtDLod1Ot9JV4eYG0SoPXxlcnr04HtpmjKGc5-2BvFshyAiGPo9EmIFsk7WKXwItZxJV6giELCXxM4y-2FlyBvi-2BDC7jTLdzoLuIASw80FWN1p9DFTygCG1VvH4NSD>

Stodola, Paul E SAJ

From: Kara Starratt [karajax@cocmast.net]
Sent: Friday, July 12, 2013 8:19 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Sincerely,

Kara Starratt

3909 Victoria Lakes Dr S Jacksonville, FL 32226

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Stodola, Paul E SAJ

From: Mike Amason [mike@appagi.com]
Sent: Friday, July 12, 2013 8:21 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Sincerely,

Mike Amason

3521 sy. augustine rd. jacksonville, FL 32207

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Stodola, Paul E SAJ

From: Diane Nichols [dnichols@worksourcefl.com]
Sent: Friday, July 12, 2013 8:22 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Diane Nichols

215 N Market Street Suite 200 Jacksonville, FL 32202

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DSbyxPzae0g2FJ4UFV9IpSICGqyPUBzDcQygQeOgMHyF5jiLPgSKouHwtCC3tK4Gu6zAOPzNKP4ZrK1cD3dmNtRJVKdrpC33G08KFKCqz59-2FUZ1xLY0mV5-2BB-2FRNfofMqnbs8z-2FG2OZYmfentsdGB84>

Stodola, Paul E SAJ

From: Jill Mashburn [jasmashburn@jaxport.com]
Sent: Friday, July 12, 2013 8:29 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jill Mashburn

10015 Pebble Ridge Drive North Jacksonville, FL 32220

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQB8wf05L6WXROlnFbqaW6nzbSfYMMJ4jKSCaDGpxc-2BmaR4hIWGttH-2Byh7iqihDAey8REVaU322-2BQvJ2I5e6c2UVdriMS9NISuBN5Cx9vMFKbWdVfCivRB4rgEW-2FLq7Plio6Wgo7btmVvRGP82Ex-2FS2>

Stodola, Paul E SAJ

From: Scott Burgess [Scott.Burgess@ehi.com]
Sent: Friday, July 12, 2013 8:29 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Sincerely,

Scott Burgess

1157 Garrison Dr St Augustine, FL 32092

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Stodola, Paul E SAJ

From: Eva Chavis [echavis@fnf.com]
Sent: Friday, July 12, 2013 8:32 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Sincerely,

Eva Chavis

601 Riverside Ave Jacksonville, FL 32164

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRjja3UtNicF-2BM-2BKK1BusqycYu6DTD7kH2m7cCtNhpMXU7AdvtF9-2BOE1EGYR2Y4Z3E19DJkftcKrwz7rVqGwb07Ju5nNU2HBFTXl3eRtXMUswn7imbuCKR0zUDEUskdmfmWd8PsnzUGwCFRfOq-2FlsBc>

Stodola, Paul E SAJ

From: Cindy Smith [csmith1231@att.net]
Sent: Friday, July 12, 2013 8:33 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Cindy Smith

13525 Sawpit Road Jacksonville, FL 32226

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DQYNN-2FNg3dLFyv0491Ho1cnjuTdoN1lnDoNv-2FYUxBY4-2B3EWIwflm0b0YhaP15-2BQgHQ3MqSQJ5XuTZQ1r-2Bon7QVnxdPMvQGibHr4pHiMFPxd1humK7ZkdkQbVL8u6suF6K8H30IxxJIaifMLqEwK-2FjMK>>

Stodola, Paul E SAJ

From: Alan Ridge [aeridge@gmail.com]
Sent: Friday, July 12, 2013 8:37 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Alan Ridge

1325 River Oaks Road Jacksonville, FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSCSWMZYH15h5pKiRj1PsAO-2BAYtcB-2FDFgZFtZjQCSUNQpDRO-2FRNcHd5fB1PyFb88LzUeH9RLq-2B1WBcrJTY4JLh3cEjmHRV-2BuLrIjp88mIJw2eroVVwkVbD6i8AtBQqwi-2F15WAEyZoAyWBPPi3LHeDTs>

Stodola, Paul E SAJ

From: Kenderson Hill [Hill.Kenderson@jobcorps.org]
Sent: Friday, July 12, 2013 8:38 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kenderson Hill

4811 Payne Stewart Drive Jacksonville , FL 32209

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DT6Yb-2FfG1kbJ6gsgSR-2FymxGMTT-2B97TR-2BUiAuC36BKnN6WDG1nLNE1wgIBze6k5-2Bp4VQowjj52vcjTEcPK5-2B-2F36h0aKAZU9beSs6WUqikoxmtNsSon5MqZKve9ULadoeol6Z071banuWnFzTtIbsHUCO>

Stodola, Paul E SAJ

From: James Johns [info@solidrockengineering.com]
Sent: Friday, July 12, 2013 8:48 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

James Johns

336 N. Elverton Pl St. Johns, FL 32259

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DTIBTr6h3QYPO2WW72D0ktE0DtrChVgS-2Fhx7KLjrx77w1G3-2B0tacZHs7aWxDgE-2FkvY-2FdfabPOppO-2BLEjunJaQoXTMDr6JcnL1M5jDiHwF2-2FGeDgUzOEB6hck8IS1Q-2FQnHa68gTu-2FN0yrbhmfUzNuCeG>

Stodola, Paul E SAJ

From: Michael Hawthorne [michael.hawthorne@verizonwireless.com]
Sent: Friday, July 12, 2013 8:56 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Michael Hawthorne

7406 Fullerton St Jacksonville, FL 32256

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DR6XS00TCIAbCd1oGqGSCbMZZViJK7cBncgHJv7jh9iXtt-2BOTvrCB-2BnmGQr18um8Cnpupt5rrolDHovEEzxKUoFq3-2Bzg4DCZMmcNf1KiMOTFpyzWwNlVqltXT5aGDHhr2iHNfw4zD5k94W-2BSV4mRR6U>

Stodola, Paul E SAJ

From: Paul Astleford [pastleford@visitjacksonville.com]
Sent: Friday, July 12, 2013 9:04 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Paul Astleford

208 N. Laura Street, Suite 102 Jacksonville, FL 32202

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DQSZ1LrFtKmv30P4hCypMlLycCmTim-2BEbk3J-2BwbKAz60k-2FsB4loutxfAKEe-2BLpUcAT30WdDPWgJe0Lg1OpmTAees7-2BjkHf81vJ0qBR5RGV-2BBSR6j0wCUI2hGBSuuzaOSYVLY3eA9Xv4d4vf0eJJi8nk>

Stodola, Paul E SAJ

From: sabrina smid [Sabrina@towingasap.com]
Sent: Friday, July 12, 2013 9:06 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

sabrina smid

10053 103rd st. Jacksonville , FL 32210

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DR-2F39fwTOaBGQDaL83SK-2FjDETCawWhTkmXRa6ErVDxerh-2F9-2FFdEseLhrZPRDht9n0lTmH7nGYTx8TngGH5TCsA2d-2FDHm4achKa9ExnVMeYfnBjh7OMZKTcScVGEzwKQzsMUUgxCR15tBM69RKVjDibs>

Stodola, Paul E SAJ

From: M. Ashraf Shaikh [ashaikh@firstcoastcardio.com]
Sent: Friday, July 12, 2013 9:10 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

M. Ashraf Shaikh

3900 University Blvd. South Jacksonville, FL 32216

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DR-2B0e3owYpjqqnvleBHUBjpLLWcev0UROViCK1bU9rU4mQwHtVjgg8jc9uYkuB-2Feg2tItx2jcs-2FhGsg1lf-2FqbjKb6hMmjR8mLr4l8A4tJUigATbn9baWgAHaZcy3ysTBSScUrPcixrmEI9LEMCYTEPP>

Stodola, Paul E SAJ

From: Ivan Rodriguez [irodriguez@jtafla.com]
Sent: Friday, July 12, 2013 9:42 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Ivan Rodriguez

1000 N. Myrtle Avenue Jacksonville, FL 32204

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DTvlnrTuJuu-2FTlqidFK2Ar250z6FoCjMnnCPxnzaCu3CkqEsu8F54NrssZ-2FFk-2Fp8FH-2Be7QVxb1HbN6MfL3jVFceXtCD64RFkTIXETYtiIsGKUTvMz5Z9AA8ok4qb9UcttZvJTSDU7GZsfLZXz-2FUq0be>

Stodola, Paul E SAJ

From: Shawn LeNoble [shawn@shivamproperties.com]
Sent: Friday, July 12, 2013 9:44 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Shawn LeNoble

702 9th Ave South Jacksonville Beach, FL 32250

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DT5WwLlYOYJirBDgAFD6zfr2wpNQjxrjAouucsDn-2FP5u2Z1brc-2BYjoIMWdHBRkXCYM9nc6ROj-2FcSqEpeGRHUYlqT0jfgTl5SAzmkLa4eK3nAGYzPrctMJWJjPq3wad8nu1G4pqq1P1qGIqQ6-2BDMaU-2BF>

Stodola, Paul E SAJ

From: Kim Wygle [kim@nppweb.net]
Sent: Friday, July 12, 2013 9:44 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kim Wygle

13455 Aquiline Road Jacksonville, FL 32224

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DSO6kQ3gNnYP36gg0AWTYO8cMHB4bZE-2F6EeaLWiNHjxI-2B8YtWXAv-2BU3I-2BC0D07pQiSRt67f0Ehb60QbjOELxmquiMNGGvpB-2BzOatnF4JKX8uobx-2B9p1og02nTmDnwkGrxcjVXBKG-2FeN-2FdJh-2FJVbY35c>

Stodola, Paul E SAJ

From: Blair Wygle [blair@nppweb.net]
Sent: Friday, July 12, 2013 9:45 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Sincerely,

Blair Wygle

13455 Aquiline Road Jacksonville, FL 32224

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DSw-2FMahwGMdlxBk-2Bq0UZPDKsbESYGpFu1F7xslhHDdcGGug1q8HYRTfdcx48ORsW8SPVw8UDISmQ100MYgZNGYXgtmEbenfxr0GGjkZ0Y0iKWLxYejo2gaXfGFeltfIx1ftuUzRedyaGIoBY21ruS12>

Stodola, Paul E SAJ

From: Eunice Mathis [emathis@fltraining.com]
Sent: Friday, July 12, 2013 9:49 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Eunice Mathis

103 Century 21 Drive, Suite 102 Jacksonville, FL 32216

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DREi1g-2BpmpXaJVIEX6a8UZHlQRomkSKB2W8MiIY1ECYVX24riU-2FZXhGAA7Wn0gb92kcrMwWwGI78mxsHh-2FcXCWkC3Q608F7CP-2B8qJYsFKCJEmRXB89-2B-2F77wSeNllwsQoNC4I9WU1BaiNowB0455FUDr>

Stodola, Paul E SAJ

From: John Freeman [jfreeman@rivercitysecurity.com]
Sent: Friday, July 12, 2013 9:51 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

John Freeman

3728 Philips Highway, Suite 213 Jacksonville, FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DRGJFwQhDH-2Fsvr00Nw96v-2BxHssaoep6HIK03Xsasn-2BTjS521hP5kI0no2F9xu3FFaMIqitjXmtj-2BtW5GimNk5wOntSd8mHLVVuCZiZdDXlM4e1Zp0yz1TBiWXwJhr-2BqB76dKx6b5Nwwg-2BpuTy1JTUO>

Stodola, Paul E SAJ

From: C.W. Young [byoung@steinemannco.com]
Sent: Friday, July 12, 2013 9:57 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

C.W. Young

2646 Long Boat Court, South Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DQB8wf05L6WXR0lnFbqaw6nErvIbPgrNOjlcNzMdo06jXQTTezTI8573c1ZcvON1oVflwine04IDydsVAkqjoufLka7Rctpl5ickrUeHZSeo-2Bf5odOsm40EE07VGZj1gQnqexxF2ZpyDa9kUoY2j2Z3>

Stodola, Paul E SAJ

From: William Moore [wmoore@omnihotels.com]
Sent: Friday, July 12, 2013 9:58 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

William Moore

18 Amelia Village circle Amelia island, FL 32034

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DR7QwpuZNzpTYJR0UdRPqimEGwEexQRz-2Fy2-2FZ1xWFp8Wzhs6gRCz-2FOLpecidQf3Mb5yR3ze1GM9x4oRtn2fRDGDENuD-2B-2FjdwT0iUwEuuDEhf2feVXox8dMx61VwDluVE-2BymA2VbjgibkQP0DbVdtieT>

Stodola, Paul E SAJ

From: Darren Betz [dbetz@thefloridayachtclub.org]
Sent: Friday, July 12, 2013 9:59 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Darren Betz

5210 Yacht Club Road Jacksonville, FL 32210

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DSAiNwWOKswaEvg7HHCWRUW-2F2IhZfqYw86nZiwEeXZzvWX6wGGeZhmST1LcTc06PpQ0jl1PzuhcAfXRaV2qLDzenV-2FfgfjTYm5gbmF9mUcEt1LuolYi4o7WzTfzKcb1ahnnpnOVe0-2F5wfYXAeuhiLB9X>

Stodola, Paul E SAJ

From: Yvonne Ferguson [fergusony@duvalschools.org]
Sent: Friday, July 12, 2013 10:03 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Yvonne Ferguson

2014 Prince Albert Ct. Jacksonville, FL 32246

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DRgw8jOu2LwUYB4sZWb1Mp-2B3RyJ0cSYtHjoeJKByBAa1RJNgmyCF6JIrc9PhWKui-2BBoXfQcni8f9qChRya9BZD961xoZP2KHRxSm-2FNkph8ijcWfZL7tkCLz9ZG-2FqBVFnumccQTqqF500rE8MkHqus2a>

Stodola, Paul E SAJ

From: Bill Buchholz [bbuchholz@bbandt.com]
Sent: Friday, July 12, 2013 10:05 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we, as a nation, are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. I fully support the deepening of the Jacksonville Harbor.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Bill Buchholz

197 Greencrest Drive Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DQbldUGke33mW6X2hBkXZoCWZibGCZQ7t00P57ALhz8PrLurmmc1v4Kpz2fU8BfWxDIV6Wmxy4Jcsp1QHfxFAj9Llm1WBTz-2BeYkhA9TNR8mw5YOWhALnicdgr3aCYBTW3Ln4nvuuNGWLOLSJD-2BohvA6>

Stodola, Paul E SAJ

From: John Carswell [bobbycarswell@comcast.net]
Sent: Friday, July 12, 2013 10:27 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

John Carswell

8471 Cassie Road Jacksonville, FL 32221

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQgSIzy1KEFQh1Gwo3PBFX08v8DnasJ-2BW9mdEw8-2BfYGGGq-2BVWN859KhEov-2BmneH12rt9H2WnpIiLp6GuDvxT1AUDgM-2BK2Ft-2BEGxw8fiqHkAOLSAQ1zCT-2BGnuqPJ-2FboBuCSIRIiNORA17-2FUItUBGtXq1>

Stodola, Paul E SAJ

From: Jerry Agresti [jerry@drsgroup.com]
Sent: Friday, July 12, 2013 10:30 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jerry Agresti

6833 Old Church Rd Fleming island, FL 32003

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQwThzmj6wcpoS4ly0U5ENoJ5vv-2BEU02kaY8tDhNsCp966QRd8850k02VNjZtKGZCtBHDLUzjoKxhUcS-2FCXvytCOVEnnp9weg-2Bn9sMryk0evSMj10xMoXAc3gd1G3rS3Csn7xBqt2HD3fGQKZuQtomt>

Stodola, Paul E SAJ

From: TY Petway [ty.petway@usassure.com]
Sent: Friday, July 12, 2013 10:45 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

TY Petway

1911 beach ave atlantic beach, FL 32233

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DSRMPgorjIi-2B7BCh26hr3cHvAwBsAzndJrsGxBeEsdASquHYzVpiUsr-2FjHF3qucE-2Bz-2Bady5aAJe5gbwYdHHJu-2BU5UNVFDw3pisYQXF6bJWyL1-2B0Gca9rXuE11byRILyuUuObN-2BUe iw7KqSXRLLOIJmx>

Stodola, Paul E SAJ

From: Michele Magueur [michele.magueur@mytotaltitle.com]
Sent: Friday, July 12, 2013 10:46 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Michele Magueur

5035 Alpha Avenue Jacksonville, FL 32205

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DQ1-2F01RXiIn2mRfABbXVMY2rxRT0sLj5yDRatAjz-2Bk-2FwjwR36GILLEoQ5ElpFMzmt-2Fj1tRbnJigOR52pTIyivEfQwfsOeULEwX4b1qjjoDdOt3J3-2B3-2B-2FYOUJrSayz30sAVCQo-2F-2Bsv7QiwUAE7ZmX9Vi>

Stodola, Paul E SAJ

From: Dan Camp [dan.camp@terrapointeservices.com]
Sent: Friday, July 12, 2013 10:54 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Dan Camp

1901 Island Walkway Fernandina Beach, FL 32034

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DRgXBVIAaf0KFkRgCsKgTBGnk50w3I2P4hN2-2F88aXtaCEVQsfsUaelYNDiNGMUd82-2FEUBkAsP-2Fpu-2BfGpH08179EOrKx2-2FN0KX1tdLhMR3oopTInKxJolV61WFic7Yuw79rFch2KTuLpo3BzhoYrXHkc>

Stodola, Paul E SAJ

From: Michael Malone [mmalone@the-cigroup.com]
Sent: Friday, July 12, 2013 11:16 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Michael Malone

220 South Mill Ridge Trail Ponte Vedra Beach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DR2wxzrh8vPhf8yLWAI-2FB6PThX-2BS6H7ngmiMARjmRCP1XodsXzX1fD-2FC6FiT-2FhzKYPV4L5drV8tC3YT7m4-2Byp1RVGb9Cz3jmcSQDr9nDVsm-2BaLfx09aP-2B-2F0WlUAOW58-2BSVqLF2NEPAeB2MugxzX1RCx>

Stodola, Paul E SAJ

From: Mauri Elledge [melledge@advanceddisposal.com]
Sent: Friday, July 12, 2013 11:28 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Mauri Elledge

138 Willow Pond Ponte Vedra, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRM2AoTO-2BQF46tQ9AWYXwjNeyKIktOkDIImRgizCGKqr6ceI4QsgzI6yhj7U-2Fu3Jtb7DMZyncQYtZs-2Fi-2BIxE9sDwNbm2zOb-2F-2FUhXxoc2n3JEN6OvWyntsx96iHwHdaS21xmSyAhG6cal3Ve4p-2BuJ-2FJ0u>

Stodola, Paul E SAJ

From: Rory Gregg [rgregg@humana.com]
Sent: Friday, July 12, 2013 12:02 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Rory Gregg

1399 Main Street Atlantic Beach, FL 32233

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DQkis0vtiFajzs30xFA-2B8eMJD-2BT6XE1PrIgJ2hKU-2F66Geb0uzdVfF8SKjkebTi2i28xzqChH0fkQzvsZC02d3Lvcka5CQKLsJEwsrpDVQmdcQnXTeL8paKm4PD-2FbI0Z-2Bw29R5KUuekH9NmQk5xe6S4j>

Stodola, Paul E SAJ

From: Arthur Bides [artbides@gmail.com]
Sent: Friday, July 12, 2013 12:05 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Arthur Bides

8438 Mizner Circle W Jacksonville, FL 32217

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DQa5H0fCXp0QX2f9QJv1wTJt-2FP-2FEmevdSYQmkjzDxh29uM5bv7kiDvy96Awhi-2FwnB3ZeMaOXbWM7HmQfIV92GikI-2B6aJZHAE-2FXt01F8pcktEfil8zRvkqBjRi-2FsM0lBp1PpJWFyVVAszqkLaFqMQtMa>

Stodola, Paul E SAJ

From: Tanya Guydos [tguydos@flbank.com]
Sent: Friday, July 12, 2013 12:26 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Tanya Guydos

224 Windswept Circle Neptune Beach, FL 32266

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2BOBr61DTocVmahkom8mciWzOqhDQcohIP8SsRSAbsM52tgiogyunggOg2eD0k-2FJNeMpdPe-2FIRE7cXKnmJzJGkxRNePKE8HCb6fQcHFZvRD2-2FXQnLt-2Bn1GP8mESCX1FO-2B-2BAGmQ6Cb1-2Fb-2Bd-2BL22w4iRzUFWAZvr>

Stodola, Paul E SAJ

From: Kelly Mannel [kmanne@imagepartners.net]
Sent: Friday, July 12, 2013 12:46 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kelly Mannel

312 East Coast Drive Atlantic Beach, FL 32233-5328

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTdldpHdA7I6sU-2FzDhaHWZ1LJMVTQ0o8LuhnPXbhWXmvp71y-2Fdrqf0jcP6UV4vtwzvsdMyBCX52eUZTnWu5YOPr6LH1JA4LvADw06ZQFwdMTUB6G0i4J1b1tCX-2BSX0kEqzPpATEZyoPA-2FW1CvCiMEfC>

Stodola, Paul E SAJ

From: Len Loving [len.lovig@5starveteranscenter.org]
Sent: Friday, July 12, 2013 1:23 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Len Loving

4619 Harbour North Court Jacksonville, FL 32225

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DRuVPKlwv-2FKLXOIaWrI-2Bve7NeIlUHq4A7hDJctimZu-2BQsbxU3mk6A4yjbvW4SK-2F6Aw08vQ-2F25NxhuMJUEntozqVmV-2FRXYLZVQTSJ9g3nXEi9UkuzNgIEBmvaJuyqBz6l5I9Qx0Cdpsi-2BP1EId7fpr9l>

Stodola, Paul E SAJ

From: Christine Payne [cpayne@cpjacksonville.com]
Sent: Friday, July 12, 2013 1:27 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Christine Payne

1201 Riverplace Boulevard Jacksonville , FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DT-2FrbeOKSLwusYXvrHzmqjxGvXyjUSCJ4-2BjUy1MtyF101FihAvS5kuw9BztUHIqZiYkUdnQ0zRkkdrgymSrfJxq1tIUde5S4pMC1Nq4ZNSICG0U0TNq5FWoysaLNVBheI9ZZMP-2FuGm6Mq8ihaPEmwL1>

Stodola, Paul E SAJ

From: Matt Schultz [matt.schultz@imethods.com]
Sent: Friday, July 12, 2013 2:28 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Matt Schultz

10748 Deerwood Park Blvd. S. Jacksonville, FL 32256

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTUyjeyelnOwLzGE-2BctSh35WR912e1s0UKlqoMpff5d8A9FWCNiBdmqqghmMyPvzEtHN10EF7WExtbT5GwmdxF-2FecYrhZjk-2F-2F1HRmFXK3xRjS-2Feox43c51RKgty34ss3awU-2FzUYmSCYXi3fUjwjZN>

Stodola, Paul E SAJ

From: Elysia Stobbe [estobbe@vandykmortgage.com]
Sent: Friday, July 12, 2013 2:32 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Elysia Stobbe

841 Prudential Drive, 12th Floor Jacksonville, FL 32207

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DSCAvEYnokpaoLTiECIcHrjoju3IjmCxfL8AECpvkBPnS4Mc95U6eAo-2Fw7Bws4rLcU5ELsLqs2gG2a2bbhJEoKTM2z26zb6wuepCeej0rjtnfkQfsLpYi6D8WlLf4Ra6rzOwydwvZJCFYjABgNYLwyx>

Stodola, Paul E SAJ

From: Paul Boynton [paul.boynton@rayonier.com]
Sent: Friday, July 12, 2013 4:20 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Sincerely,

Paul Boynton

1008 Arbor Lane Jacksonvillef, FL 32207

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Stodola, Paul E SAJ

From: Laura Dalisera [Lad53@comcast.net]
Sent: Saturday, July 13, 2013 11:58 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we, as a nation, are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. I fully support the deepening of the Jacksonville Harbor.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Laura Dalisera

11874 west clearwater oaks dr. Jacksonville, FL 32223

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2B0Br61DSPHIy200hsWP-2F0qBkOf-2BjV2mPoi9ARB9Lc-2F96yYfFX60Jbw6wcvf823IwjyjhLjhHXw7nc89671GUDWbN-2Bn2S7Rr7VRN6oQBEpppzwIIheCIZ-2BH-2BSA9loEygpFP8jThFoTtZmQXfFNanZXmYB-2BhM-2B8>

Stodola, Paul E SAJ

From: Ray Driver [rdriver@northfloridalaw.com]
Sent: Saturday, July 13, 2013 12:55 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Ray Driver

8055 Pine Lake Road Jacksonville, FL 32256

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DQ3gI-2F8csz1z9BLmPQD25k-2F6uSfEcG0NpLIUDg1snDGRoYDgUgbWbQkgbDRgRX3NAYmIveALeyVAzJvhyXQMs1eMrY3MbeF92nfHonwGwZY6tgIGBeusne6JIsVAcfp1xQCR5y8h2A6db2Su635T-2BJG>

Stodola, Paul E SAJ

From: Jana Henry [jhenry@firstcoastymca.org]
Sent: Monday, July 15, 2013 8:50 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jana Henry

12735 Gran Bay Parkway W. Jacksonville, FL 32258

<<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQv5p6IgvEjwaTZaXbtFAStKSyFOD0UqrzcPGfZaw01JdbZPcidi-2FuRFOxBdHccxodp2UGZ3nsFTS0aKP3X3UBDUNTJeaq2CGPgIv2GQ3phGJnKgMtv2NyA5KNTdBGAhboFsYNgsgQbwd-2F-2B54EXWFzy>>

Stodola, Paul E SAJ

From: Richard Copeland [RLCopeland64@gmail.com]
Sent: Monday, July 15, 2013 9:46 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Richard Copeland

3794 Chasing Falls Road Jacksonville, FL 32065

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRgino7-2Fs39nta-2B9QSUakJ0i6hA00gCV1urXgJqJMNIv4eIplt0QYZsQ6DZ-2B-2FIr2DHmR8j-2FUuix2eN7Jo-2BihIR0-2FWKnDIATUyu8vDmmukmmEifYpVUPkWdA4vdQ8uZHE-2FhyYb9qgzZ0waiEjPYHEW>



Preston H. Haskell
Chairman

July 15, 2013

Mr. Paul Stodola
US Army Engineer District
701 San Marco Boulevard
Jacksonville, FL 32207

Dear Mr. Stodola:

I am writing to thank the Army Corps of Engineers and you for your work on the Jacksonville Harbor deepening project. Your study does much to underscore the significance of this project, not only for the future economic development of Duval County, but for the entire Northeast Florida region.

As an economic engine for our city, deepening the St. Johns River harbor is a crucial component to attracting future seaport business in order to maximize the job creation and economic benefits provided by cargo activity. If we are to compete in the global marketplace effectively, deepening the harbor will be an investment that will generate jobs and reap benefits for generations to come. Needless to say, I fully support this effort.

Relative to the study, you have permission to enter my comments into the public record. Please know you have my complete support and appreciation. Thank you again for your work on behalf of Jacksonville and Northeast Florida.

With kind regards.

Sincerely yours,

A handwritten signature in cursive script that reads "Preston Haskell".

Preston H. Haskell

The Haskell Company
111 Riverside Avenue
Jacksonville, Florida 32202

Stodola, Paul E SAJ

From: Timothy McGill [jxjpilot@comcast.net]
Sent: Tuesday, July 16, 2013 9:58 AM
To: Stodola, Paul E SAJ
Subject: St. Johns River Harbor Deepening

Dear Sir,

I would like to take this opportunity on behalf of myself and the St. Johns Bar Pilot Association to express our strong support for the proposed deepening of the federal channel to 47 feet to Broward Pt. turn. This harbor improvement is vital for the future economic viability of Jacksonville and the people of NE Florida. If we can in any way be of assistance in furthering this cause please do not hesitate to contact me directly at any time.

Best Regards,
Capt. Timothy J. McGill, President & CEO
St. Johns Bar Pilot Association

Stodola, Paul E SAJ

From: Nathan Cook [nathan.d.cook1@gmail.com]
Sent: Tuesday, July 16, 2013 10:07 AM
To: Stodola, Paul E SAJ
Subject: Deepening of St. Johns River

Mr. Stodola,

I fully support the deepening project.

Nathan D. Cook

Stodola, Paul E SAJ

From: Billjaxpilot@aol.com
Sent: Tuesday, July 16, 2013 11:37 AM
To: Stodola, Paul E SAJ
Cc: mcgill@jaxpilots.com
Subject: JaxPort 47 foot dredging project

Dear Sirs;

I would like to express my support for the 47' dredging project currently proposed for the St. Johns River serving JaxPort/Jacksonville, Florida.

This project is essential to keeping Jacksonville viable and competitive as a major maritime port. The long term economic benefits to the port, the state, and the nation as a whole, so radically dwarf the costs that the decision seems an obvious one.

Thank you for your time and consideration.

Regards,

Captain William M. Brauer
St. Johns Bar Pilot Association

Stodola, Paul E SAJ

From: Richard McCreary [richard.mccreary@baesystems.com]
Sent: Wednesday, July 17, 2013 9:03 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

If we, as a nation, are to compete in the global marketplace effectively, the Port of Jacksonville, and indeed all of our nation's major ports, will need investment now to generate jobs and reap benefits for generations to come. I fully support the deepening of the Jacksonville Harbor.

Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Richard McCreary

8500 Heckscher Drive Jacksonville, FL 32226

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2BOBr61DR9xqzYDjmIDu5XzjCHuxvhdIqFACjtjmTrstU476h5pfkAmNkhHyoTwAy-2Bmil23wTml2RXBBsXo3-2FRcSl0H08mTxfZRXqi4mkX0yKct5dwQJlhe-2BPMkhOAs6Q0Hy2fxkoZZJo9pV0H0bIsMLbnt149>

Stodola, Paul E SAJ

From: Moody Chisholm [moody.chisholm@jaxhealth.com]
Sent: Friday, July 19, 2013 12:00 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Moody Chisholm

4598 Ortega Island Dr. N Jacksonville, FL 32210

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTW8oy3BUREhQPLetURJBdfVM7D02otgx2WXBj1AY-2F2ssB2-2BUxpRQpprS4G3nA6Shbf2tY2vfiRoU6B80dm58J0QOEwnOe-2BKHgWwYBO0YEQvKwaiFHSL1-2BemLquySv-2Bo-2Bwp7G881cF0B82M0B6ue8vD>

Stodola, Paul E SAJ

From: Eliasson, Fredrik [Fred_Eliasson@CSX.com]
Sent: Monday, July 22, 2013 8:11 AM
To: Stodola, Paul E SAJ
Subject: Jacksonville Harbor Deepening

Dear Mr. Stodola:

On behalf of CSX, I am writing in support of dredging the Jacksonville Harbor Channel to 47 feet. The Port of Jacksonville is Northeast Florida's primary economic engine, and is uniquely equipped to maximize the benefits of a harbor capable of handling today's growing fleet of deep draft container ships that will soon be able to come through the widened Panama Canal. The ripple effect from this cargo business will be substantial, supporting thousands of jobs across the region and generating significant economic impact. Deepening the Jacksonville Harbor Channel to 47 feet will allow the Port to continue its growth and become a major player in the global market.

Please record CSX's full support for the Harbor Deepening study.

Sincerely,

Fredrik J. Eliasson

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Stodola, Paul E SAJ

From: Fitz Powell [fpowell@CWPOWELLINS.com]
Sent: Monday, July 22, 2013 9:40 AM
To: Stodola, Paul E SAJ
Cc: Fitz Powell; Jeanna LeMasters
Subject: Jaxport channel deepeneing project

I am in full support of the Harbor Deepening Study! Please note that this will drive new jobs & have huge economic impact in the NE Florida region & help us increase our international trade, while improving infrastructure! If you have any questions please don't hesitate to contact me. Thanks!

Fitzhugh K. Powell, Jr., AAI, CRIS, CWCA
President
Cecil W. Powell & Company
Direct Line: 904-256-0101
Email: fpowell@cwpowellins.com

Proud to be AMERICAN

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Stodola, Paul E SAJ

From: Jeff Smith [jeffsmith2003@gmail.com]
Sent: Tuesday, July 23, 2013 9:53 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jeff Smith

8682 Heather Run Drive South Jacksonville, FL 32256

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTT2ZUGTf6KmbCPJBSVwQwLwnKbRj0yTxDY3UuL2UvQ4vMt-f6bu90xU-2BBo9vy9RkRXnNqefqcXdSNy0sb3CitrGRPPdwT2eutXBcZ2jGuuhexR3PnzmIsGMcoNJKvp64HPs3D3sm7Fuakk0Es3X98HX>

Stodola, Paul E SAJ

From: Doreen Peeler [dpeeler@vanguardcb.com]
Sent: Tuesday, July 23, 2013 10:10 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Doreen Peeler

11928 Gran Crique Ct. South Jacksonville, FL 32223

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSH3VUHIBVoZZTzLvRQPmI-2FJ04rMaMIId7RX1TqLf324yWKbVC6qOra-2Bd8ZEU3uf2jC9K2jCv8svxQ8aQqAakbbogOtjkmZmDdyrTjaNpIQeWnGVsa8-2F0bRGMB8vVvyX51TrJ6YMHz-2B94ARwUjZtpmjK>

Stodola, Paul E SAJ

From: Michael Hodges [mhodges1958@gmail.com]
Sent: Tuesday, July 23, 2013 11:46 PM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Michael Hodges

10365 Hood Rd S #205 Jacksonville, FL 32257

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQPR2d4NL-2BqUZAzf-2BDCayTAfX3MicwtSssWasOjkQjcCbef0S3sXq-2BYeeLubilSKw59kP-2BNNQEpTCE-2FHQEab-2BZA6Vnbw3rjmJMErJtHgVVkyCEaU-2FP9d92V8Udn-2Bn0gvbcfFvkXwNfK-2B0-2FDIV6L7Dre>

Stodola, Paul E SAJ

From: Jennifer L. Feschak [jennifer.degaetano@db.com]
Sent: Wednesday, July 24, 2013 2:12 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jennifer L. Feschak

2108 1st Street Neptune Beach, FL 32266

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRvKhP73wbPaVq7HFY6LVmj3SucetJW7XOQrtY-2FZ9eNbJ5mvzPnesbJDTBezYMJ0gcEjnOLJWt4zLMyr1c-2BetY9agMQGBfDxJ43MfgDX-2F4cYmwZ8uveSmQy8D84I100J65zEWIsliQbOXPAfkyHokPK>

Stodola, Paul E SAJ

From: Jane Badger [Jane.badger@everbank.com]
Sent: Wednesday, July 24, 2013 4:47 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation,

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jane Badger

3916 Lionheart Drive Jacksonville, FL 32216

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRP2G4W-2BjrDfGu3h6071PN2cPT3QjqZmz9TjJRsnGI00cw1Vqu1PjK7Kzkw1G-2Btj1cmmaFRCjSh0z1Y-2F22MJkOhW-2Bw-2F0DDdQSKG-2FDj3U4h3e1A2mOB36Ju7Qe3uuCfJQ07bKKn2rbsh9uFK1GH6azw-2F>

Stodola, Paul E SAJ

From: Dennis Barnard [dbarnard@stophungernow.org]
Sent: Wednesday, July 24, 2013 6:15 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Dennis Barnard

1206 Ponte Vedra Blvd Ponte VedraBeach, FL 32082

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DTg1qNMOqA92N9uBI15PvNo9xLDEOF3ANqRH90asCHVIVqCT2hYtVWENkLRTkYv8-2BK8VmunAkSwPgafja-2BqS3OaDF6fJ5jX6LNNk3UX3VWLO9pCMzKggqseSyDIzowOLi3F2vShrWsvzEBMl6wgMFlS-2F>

Stodola, Paul E SAJ

From: Jim Horlacher [jim.horlacher@gmail.com]
Sent: Wednesday, July 24, 2013 7:25 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jim Horlacher

3100 Colgan Ct. Saint Johns, FL 32259

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRmrJofzw0wwkoBc1jFObFbwqFyVWq0Dmco24QsqXP2ro-2BARIH8Le2-2FytxHZmbmBhdFRJKZcqjHz4VfOvch7UNNTTVkR0aPAjSykIp0gHaqMMKPKbFH-2FvTSSrrcgSKf9tjwLiLgOoGb1WZfaGoipR7U>

Stodola, Paul E SAJ

From: Dennis Blank [dblank@fscj.edu]
Sent: Wednesday, July 24, 2013 7:33 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Dennis Blank

501 West State Street Jacksonville, FL 32202

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRleC-2BcCMJKLjLb8HOZNOZ9M0b9lw170nOIH9-2FfMc3T7x2-2F-2FXFEURCdYAXh4aGK7Pj-2BePv47WYczTY5IEAOUbFcBj7fy9G9X-2BMJ87CatOU-2F54xTInZqAgOeHh-2F85neYtgM-2BBEvfkfypjhSeHQYMU8t>

Stodola, Paul E SAJ

From: Kevin Atchison [kevin@putnamlumber.com]
Sent: Wednesday, July 24, 2013 7:45 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Please enter these comments into the public record regarding the Jacksonville Harbor Navigation Study and know you have my complete support and appreciation.

Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kevin Atchison

94 Vanderford Rd East Orange Park, FL 32073

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DTkxPutW5v1GfrHr15HTUChk-2F-2By28yiYEqbneMzptZQUp0uHuCWZCICBLxkGxWNB4Asf14XQsNelgudfCLlU-2Ff8zLhoHrL7JIwnTMxsUf-2BdjX-2FS15XBh8a1WKDBetWPCWy2irbuX-2FbGHHPKQq6Bu01N>

Stodola, Paul E SAJ

From: Jerry Collins [jcollins@fscj.edu]
Sent: Wednesday, July 24, 2013 8:06 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

Your study does much to underscore the importance of this project, not only for the future economic development and sustainability of Duval County, but for the entire Northeast Florida region.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jerry Collins

5050 Rivebrook Ct Jacksonville, FL 32277

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DSr90iwIQmSDB-2BxFgWHQoRXd0eK3jkkkYe61c-2BMik9uZZPVF0uQhDesfYARxufj1QXkOk1lhUtpCMYAZibn3BqvFbzt1-2FiFCS8hVd5j8JM-2FQpbw08T11IiG768r-2BVXrRmpQTJsyPPHFrrDUPKXWz12A>

Stodola, Paul E SAJ

From: Donna Hammerstein [donna.hammerstein@rsandh.com]
Sent: Wednesday, July 24, 2013 8:16 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Donna Hammerstein

12104 debarah rd jacksonville, FL 32220

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DT19XIAMPsIjbkcGTqZUepDAy0LTbNo0lmpwApPCcBTS7RkIrh4otK1rBv4gYLBzv3lDjdV-2BH86iFRnMqdKat0asoEJ5Ek0RlGY3D4AKInLtbcyNt6ciSo5bpnUjJC5LoI2cEveE7tMoB3VuygR47e>

Stodola, Paul E SAJ

From: Alexander Sifakis [alexs@progresshomebuyers.com]
Sent: Wednesday, July 24, 2013 8:20 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Alexander Sifakis

2406 University Blvd W Jacksonville, FL 32217

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DQnKzoeNbj09n3wJnDGd04QGTLig4RqvUAJnayqzZdx9-2FOMDytLUtT8BPGiy5YIhHg10vNKUS7NrALzxD2LMIVnsxfmksmkkaubPEMts0ad7OTLIJ-2FskKbiw63MGIZ3RrzjDUK2dcR-2F3PiofIr6UE0>

Stodola, Paul E SAJ

From: Kathy Wiedegreen [kathysellsjax@gmail.com]
Sent: Wednesday, July 24, 2013 8:26 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kathy Wiedegreen

581 Sparrow Branch Circle St Johns, FL 32259

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQ0T4tcNQGy2oUIvCavdEimOYCPC9dpZ4sG59orZI7xtG3PEhVvikUovjFCTi3MDjDA-2BtHWJdIHup0XiWOah9Tg-2BT6SHDC6R3rotcFpwUV9khu3lHwXVbxJ4S-2FbNDsoBbLQqu9zmqWAdkR5Jh8JPYMjn>

Stodola, Paul E SAJ

From: Jeffrey Evans [jeff.evans@colliers.com]
Sent: Wednesday, July 24, 2013 8:31 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Jeffrey Evans

3724 Montclair Drive Jacksonville , FL 32217

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DS-2BcEtyEXbZSR-2FPkMHT8TUI7zNwM75ktK9mpFsxUve8lXBh4-2FqzqXnU6sPr9X6LsKVi0Lqb5p-2B1292TioBS7NaH0kx3qgJ8psJQx-2B-2FvCnrW7OgaKG5JwLQrtwPbzzsz0FjHwD0yEPeinBhft9G925Jit>

Stodola, Paul E SAJ

From: Melissa Riggins [mriggins@ready4work.com]
Sent: Wednesday, July 24, 2013 8:49 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Melissa Riggins

1830 N. Main St. Jacksonville, FL 32206

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DRhpAo9rdNwieFf33HAN-2FHhbVjCDYe21Mh3IMOFaH6o-2B2pzFwzD-2FOojWhtw-2FajBwZiBn-2FfpF5TyyRwkvehHzOAuzGiDBW0-2BPLbWzXpYCINcKmarPtORDDmoHD8IlHcbVnxrKugeb3yApjQsyja-2Fp9Ya>

Stodola, Paul E SAJ

From: Mark Kane [mkane@mmihg.com]
Sent: Wednesday, July 24, 2013 8:59 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Mark Kane

14672 Duval Road Jacksonville, FL 32218

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DQyxk5IMAPMXq8rwLif-2FLM-2BCNq13TdERMWjhimv-2FWVAnIW560Azy1FuXujeytHi-2FtovB1Gmg4E-2BohL2nG0HBSi6L9k39KXcJifIgp8CL3cOFjoPMZ43BHMHTkhkWFaxGSIbyNNyZU9swwrManIXxJN>

Stodola, Paul E SAJ

From: Daniel Davis [daniel.davis@myjaxchamber.com]
Sent: Wednesday, July 24, 2013 9:23 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Daniel Davis

3 Independent Drive Jax, FL 32202

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DTo2RifH9Sz0gT1iKmV8hDD5mcmNJ-2FD0lb1VL1UHrihcglvyG6k75ysNCfEmZvGt37oo6P-2B3B9z00TsA4BBULXi5SWYxnn26BQwBELg3KGNLSlEVT0I2A7QiAtQieMWBgRaCHozTWvTku-2Ffc2nBxBhD>

Stodola, Paul E SAJ

From: Kathy Bolesworth [kathy.bolesworth@myjaxchamber.com]
Sent: Wednesday, July 24, 2013 9:29 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Kathy Bolesworth

10282 Spindlewood Ct Jacksonville, FL 32246

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Stodola, Paul E SAJ

From: William East [glenneast@nefar.org]
Sent: Wednesday, July 24, 2013 9:29 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

William East

12343 Autumnbrook Trail West Jacksonville, FL 32258

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2BOBr61DTWOzLnWU9-2FOGbCZytM-2FL2JZ5b4qvMQLfbFJ8Mxs6e8J8Ylh9kGWwxx6dbuJBVk70FnShloOvvSJryG-2FwVMFDNfipTFQjIJE-2B30GyNK01INfivCQ61a8YU0YkG0rT1zZZVxdTPIHS6m9RxIFSCm6STp>

Stodola, Paul E SAJ

From: Debbie Warren [debbie@fcmaweb.com]
Sent: Wednesday, July 24, 2013 9:35 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Debbie Warren

1615 Huffingham Road, Suite 2 Jacksonville, FL 32216

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DS6s71DYF0Yi3R7DQWID2B08Y-2FugjS2S5h5m2ObmSG2cyLHKWuHkL980B-2FdtXiuMrkKACoOVmtByL8-2B40HpTlFe5zgpm1lFHAsJ9ebFSUPQdJCanvUSB8bfANs1EEcwy-2F9i9oGJohaytPkITkT1hNL>

Stodola, Paul E SAJ

From: Tina Crowder [tina.crowder@firstcitizens.com]
Sent: Wednesday, July 24, 2013 9:42 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Tina Crowder

8226 west port road Jacksonville, FL 32244

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2BOBr61DQsciyGgNDv1geJcXAhpsUxw120fhHKc0JYBbPMuD8d6b1UznZYQYT8AKmhiqfrkg-2FRF09i0dscYcoG2KM8ihMAokmqObGwLN9XKXYQ1DD5-2BxDdtXvwsZ4PwDXofEWT6m2tyhbbb53ObOEIsMvMVnsW>

Stodola, Paul E SAJ

From: Douglas Davis [doug.davis@bbvacompass.com]
Sent: Wednesday, July 24, 2013 9:44 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Douglas Davis

4190 Belfort Rd Ste 100 Jacksonville, FL 32216

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFglm6cXQV32F4B-2B7-2F8H-2B0Br61DQyL3T76nU23JmWXmjUfkgRGINXxBuEHpr1fdRyttRBdi-2FwI27FFUjhmOj1qqx-2FNZJnXwUfiIZIJS90ZiqzWTu7SP6cqL-2B98TyxNG-2B-2B371o5FZarSSuCpvtN1BNQvVaSHVYnPRReVKaZoJehFegUXcfc>

Stodola, Paul E SAJ

From: Lynn Baltz [lbaltz@jfmoran.com]
Sent: Wednesday, July 24, 2013 9:47 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Lynn Baltz

13846 Atlantic Blvd, Unit 1015 Jacksonville, FL 32225

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFg1m6cXQV32F4B-2B7-2F8H-2B0Br61DQ8mO-2BJNfFMtcYMqZ1mJJJo-2B7KtFQ4bxS2Ht28hcUXB9mF2nXYTtI219gfiFtkdNoFjQR4-2Fs9wHDG-2FCC3pt4sJsFRWZXDYg-2BIaKobqWAQy1LMQ-2FaEKw4g648PgnZGUQB-2F7mG6qgdzjg-2B09Fy7UxzqE7>

Stodola, Paul E SAJ

From: Barbara Kreacic [barbarakreacic@yahoo.com]
Sent: Wednesday, July 24, 2013 9:50 AM
To: Stodola, Paul E SAJ
Subject: I Support the Harbor Deepening

Dear Mr. Stodola,

Thank you for your work on the Jacksonville Harbor deepening project. We want to see the port grow and succeed, and of primary concern is the conservation of our environmental assets and preservation of marine life in our beautiful river.

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Thank you again for your support of Jacksonville and Northeast Florida.

Sincerely,

Barbara Kreacic

6551 La Mirada Drive W #1 Jacksonville, FL 32217

<http://mailer.channeldemocracy.com/wf/open?upn=A6F5amVx3tcdXwcjFgIm6cXQV32F4B-2B7-2F8H-2BOBr61DRGDymwF0GZ0cJXtTLeotVHyV-2BX9UmusgnMcrTKjz1ATrL5-2FLato-2FM57FjXkQqsNJ4N-2BukONx9d1c-2ByY8sQLg2l0supIjAKi-2F3ZBAZ7C5izs0yYCW7Ktayb5c1qZiN7tvKFWcNaSP1sqDf7-2FQ0o6VX-2B>