DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
400 HIGH POINT DRIVE, SUITE 600
COCOA, FLORIDA 32926

January 29, 2014

REPLY TO
ATTENTION OF

North Permits Branch
Cocoa Permits Section
SAJ-2012-01564(SP-AWP)

Mr. David Bernhart
Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Bernhart:

Reference is made to U.S. Army Corps of Engineers (Corps) request for consultation dated September 18, 2013 (currently in your review), for the development of an Environmental Impact Statement (EIS) for a private commuter rail project proposed by All Aboard Florida (AAF). Since submittal of our consultation request AAF has determined railroad bridges crossing the Eau Gallie River, Crane Creek, Turkey Creek, and the Sebastian River would eventually require replacement and the bridges crossing the Loxahatchee and St. Lucie Rivers would eventually require more substantial refurbishment than initially proposed. Given this new information AAF is seeking authorization to perform in-work and construction of new bridges alongside existing structures within the Eau Gallie River, Crane Creek, Turkey Creek, and the Sebastian River and complete structural repairs which may require in-water work at Loxahatchee and St. Lucie Rivers. A summary of the potential impacts to regulated resources are listed in the table below and the Biological Assessment included as Attachment 1. The Corps has reviewed the Biological Assessments attached and adopts its findings for this consultation.

•Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

☐ Yes ☒ No

•Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

☐ Yes ☒ No

•Source level exceeds 180 dB re 1 uPa zero to peak

☐ Yes ☒ No

Effects Determination:

•For executing the action (i.e., construction activities)

☐ No Effect ☒ NLAA ☐ May Affect

•For the result of the action (i.e., new dock)

☐ No Effect ☐ NLAA ☐ May Affect

•If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

☐ Memo made ☒ N/A

Mitigation/Protective Measures:

•Will the applicant follow the August 2001 Dock Construction Guidelines?

☐ Yes ☒ No

•Will the applicant follow the October 2002 Johnson's Seagrass Key?

☐ Yes ☒ No

•Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

☒ Yes ☐ No

•If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.

- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts as needed.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

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- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

Updated: August 2008

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Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- Crane Creek (Mile Post 194.36)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

Crane Creek. The project area is approximately 0.5 miles upstream of Indian River Lagoon

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing double track railroad bridge. The bridge is approximately 650 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

- What are the baseline conditions within the project area, including substrate type?

There was a composite substrate comprised of small rocks, crushed shells, and muck

- Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

- Are mangroves present in or near the project area? Which species (red, black, white) and how much?

No mangroves were present within Assessment Area

- Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

- Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

- Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Construction of one new 650-ft independent ballast deck structure located on the east side of the existing railroad bridge and one new single track bridge in the footprint of the removed western bridge. The new structures will be supported by concrete piers. The proposed superstructure will consist of Standard Precast Pre-stressed Concrete Bridge Slabs. The Bridge slabs will sit atop the pile bent cap. A crane will place the bridge slabs on the abutment. To form the end bents and backwall, a small area upslope will be excavated to install the forms. After installation is complete the area will be backfilled and compacted. Rip–rap will be placed around the abutment for slope protection. Walkways will be attached on either side of the bridge. Construction will be performed from a barge and from the shore. The existing historic bridge will be left in place and maintained by FEC. FEC will be responsible for ensuring that overtime the deterioration of the bridge does not result in impacts to navigation, floodplains, wetlands, or ecological habitat, through removal and relocation prior to deterioration and/or removal of fallen debris.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

Piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

18,615 sq ft will be affected by the project footprint.

- Will mangroves be impacted? Explain and quantify impacts.

No mangroves were present within the Assessment Area

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Approximately 18,615 sq. ft. of surface waters will be impacted by the installation of riprap and pilings, and shading of non-vegetated surface water by the new bridge. The proposed bridge construction may have direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity would include installation of the pilings and shade resulting from bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

Approximately 15,136 sq. ft. of non-vegetated surface water will be shaded by the new bridge.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Noise associated with the pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles will be approximately 20 inches in diameter and will be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

- Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

  ☐ Yes ☒ No

- Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

  ☐ Yes ☒ No

- Source level exceeds 180 dB re 1 uPa zero to peak

  ☐ Yes ☒ No

Effects Determination:

- For executing the action (i.e., construction activities)

  ☐ No Effect ☒ NLAA ☐ May Affect

- For the result of the action (i.e., new dock)

  ☐ No Effect ☒ NLAA ☐ May Affect

- If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

  ☐ Memo made ☒ N/A

Mitigation/Protective Measures:

- Will the applicant follow the August 2001 Dock Construction Guidelines?

  ☐ Yes ☒ No

- Will the applicant follow the October 2002 Johnson's Seagrass Key?

  ☐ Yes ☒ No

- Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

  ☒ Yes ☐ No

- If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.

- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

Updated: August 2008

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Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- Turkey Creek (Mile Post 197.70)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

28.031966 N, -80.582232W WGS84

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

Turkey Creek. The project area is approximately 0.5 miles upstream of Indian River Lagoon

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing double track railroad bridge. The bridge is approximately 180 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

•What are the baseline conditions within the project area, including substrate type?

The bottom substrate was comprised of muck.

•Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

•Are mangroves present in or near the project area? Which species (red, black, white) and how much?

No mangroves were present within the project area

•Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

•Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

•Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Construction of new twin 181-ft independent ballast deck structures located on the west side of the existing bridge. The ballast deck structures will be supported by concrete piers. The proposed superstructure will consist of Standard Precast Pre-stressed Concrete Bridge Slabs. The Bridge slabs will sit atop the pile bent cap. A crane will place the bridge slabs on the abutment. To form the end bents and backwall, a small area upslope will be excavated to install the forms. After installation is complete the area will be backfilled and compacted. Rip–rap will be placed around the abutment for slope protection. Walkways will be attached on either side of the bridge. Construction will be performed from a barge unless deemed unsafe or ineffective due to shallow depths, alternatively, a temporary in-water platform will be installed from which construction will ocur. The existing historic bridge will be left in place and maintained by FEC. FEC will be responsible for ensuring that overtime the deterioration of the bridge does not result in impacts to navigation, floodplains, wetlands, or ecological habitat, through removal and relocation prior to deterioration and/or removal of fallen debris.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

Piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

3,936 sq ft will be affected by the project footprint.

- Will mangroves be impacted? Explain and quantify impacts.

No mangrove were present within the Assessment Area.

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Approximately 3,936 sq. ft. of surface waters and wetlands will be impacted by the installation of riprap and pilings, and shading of non-vegetated surface water by the new bridge. The proposed bridge construction may have direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity would include installation of the t pilings and shade resulting from bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

Approximately 3,823 sq. ft. of non-vegetated surface water will be shaded by the new bridge.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Noise associated with the pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles will be approximately 20 inches in diameter and will be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

- Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

  ☐ Yes ☒ No

- Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

  ☐ Yes ☒ No

- Source level exceeds 180 dB re 1 uPa zero to peak

  ☐ Yes ☒ No

Effects Determination:

- For executing the action (i.e., construction activities)

  ☐ No Effect ☒ NLAA ☐ May Affect

- For the result of the action (i.e., new dock)

  ☐ No Effect ☒ NLAA ☐ May Affect

- If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

  ☐ Memo made ☒ N/A

Mitigation/Protective Measures:

- Will the applicant follow the August 2001 Dock Construction Guidelines?

  ☐ Yes ☒ No

- Will the applicant follow the October 2002 Johnson's Seagrass Key?

  ☐ Yes ☒ No

- Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

  ☒ Yes ☐ No

- If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.

- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

Updated: August 2008

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Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- Sebastian River (Mile Post 212.07)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

27.838405 N, -80.496927W WGS84

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

Sebastian River. The project area is approximately 1 miles upstream of Indian River Lagoon

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing double track railroad bridge. The bridge is approximately 1,625 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

•What are the baseline conditions within the project area, including substrate type?

The bottom substrate was comprised of small rocks, muck, and shells.

•Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

•Are mangroves present in or near the project area? Which species (red, black, white) and how much?

No mangroves observed within the Assessment area. Red mangroves were observed in the vicinity of the Assessment Area.

•Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

•Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

•Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Construction of twin new independent ballast deck structures located to the east of the existing railroad bridge. The ballast deck structures will be supported by concrete piers. The proposed superstructure will consist of Standard Precast Pre-stressed Concrete Bridge Slabs. The Bridge slabs will sit atop the pile bent cap. A crane will place the bridge slabs on the abutment. To form the end bents and backwall, a small area upslope will be excavated to install the forms. After installation is complete the area will be backfilled and compacted. Rip–rap will be placed around the abutment for slope protection. Walkways will be attached on either side of the bridge. Construction will be performed from a barge unless deemed unsafe or ineffective. An alternative to a barge would be the installation of a temporary platform from which construction activities would occur. The existing historic bridge will be left in place and maintained by FEC. FEC will be responsible for ensuring that overtime the deterioration of the bridge does not result in impacts to navigation, floodplains, wetlands, or ecological habitat through removal and relocation prior to deterioration and/or removal of fallen debris.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

Piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

37,350 sq ft will be affected by the project footprint.

- Will mangroves be impacted? Explain and quantify impacts.

Mangrove impacts are not anticipated.

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Approximately 37,350 sq. ft. of surface waters and wetlands will be impacted by the installation of riprap and pilings, and shading of non-vegetated surface water by the new bridge. The proposed bridge construction may have direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity would include installation of the replacement pilings and shade resulting from bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

Approximately 35,350 sq. ft. of non-vegetated surface water will be shaded by the new bridge.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Noise associated with the pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles will be approximately 20 inches in diameter and will be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

- Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

  ☐ Yes ☒ No

- Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

  ☐ Yes ☒ No

- Source level exceeds 180 dB re 1 uPa zero to peak

  ☐ Yes ☒ No

Effects Determination:

- For executing the action (i.e., construction activities)

  ☐ No Effect ☒ NLAA ☐ May Affect

- For the result of the action (i.e., new dock)

  ☐ No Effect ☒ NLAA ☐ May Affect

- If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

  ☐ Memo made ☒ N/A

Mitigation/Protective Measures:

- Will the applicant follow the August 2001 Dock Construction Guidelines?

  ☐ Yes ☒ No

- Will the applicant follow the October 2002 Johnson's Seagrass Key?

  ☐ Yes ☒ No

- Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

  ☒ Yes ☐ No

- If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.

- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, mangrove trimming according to FDEP guidelines as needed, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

Updated: August 2008

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Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- St. Lucie River (Mile Post 260.93)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

27.203706 N, -80.260088W WGS84

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

St. Lucie River. The project area is approximately 5.5 miles upstream of Atlantic Ocean

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing single track operational railroad draw bridge. The bridge is approximately 1,260 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

- What are the baseline conditions within the project area, including substrate type?

The bottom substrate was comprised of muck and small rocks.

- Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

- Are mangroves present in or near the project area? Which species (red, black, white) and how much?

Red and White mangroves were observed near the Assessment area

- Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

- Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

- Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Rehabilitation of existing structural steel, concrete piers, and mechanical and electrical systems.

Bridge restoration activities will be performed from a barge unless deemed unsafe or ineffective. An alternative would be the installation of a temporary platform from which restoration activities would occur.

Although in-water work is currently not proposed there may be a potential need for in-water work, pending further examination of the existing bridge structures, and required construction methods; therefore, ESA consultation should be conducted assuming in-water work at this location.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

If pile installation is necessary, piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

The proposed work is limited to updates to the existing structures. If in-water work is necessary, the maximum footprint would be 14,381 square feet (footprint of bridge)

- Will mangroves be impacted? Explain and quantify impacts.

Mangrove impacts are not anticipated.

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Currently the proposed project will not result in modification to any habitats; however, if in-water work is deemed necessary, surface waters and wetlands may be impacted through installation of riprap and pilings, as well as shading of non-vegetated surface waters. If in-water work is deemed necessary, there may be direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity may include installation of pilings (temporary or permanent) and shade resulting from additional bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and if in-water work is deemed necessary, the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

No new shading impacts are proposed within the Assessment Area.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Currently, no pile driving is proposed within the Assessment Area. However, if deemed necessary, noise associated with pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles would be approximately 20 inches in diameter and be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

•Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

☐ Yes ☒ No

•Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

☐ Yes ☒ No

•Source level exceeds 180 dB re 1 uPa zero to peak

☐ Yes ☒ No

Effects Determination:

•For executing the action (i.e., construction activities)

☐ No Effect ☒ NLAA ☐ May Affect

•For the result of the action (i.e., new dock)

☐ No Effect ☒ NLAA ☐ May Affect

•If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

☐ Memo made ☒ N/A

Mitigation/Protective Measures:

•Will the applicant follow the August 2001 Dock Construction Guidelines?

☐ Yes ☒ No

•Will the applicant follow the October 2002 Johnson's Seagrass Key?

☐ Yes ☒ No

•Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

☒ Yes ☐ No

•If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.

- Turbidity controls? If yes, description of type used.

Yes, silt fence and floating turbidity barriers will be installed prior to construction and maintained during construction in accordance with performance standards for erosion and sediment control.

- What are the proposed avoidance, minimization, and compensatory measures?

Proposed measures include BMPs, such as silt fencing and turbidity barriers, Sea Turtle and Smalltooth Sawfish Construction Conditions, and the use of air bubble curtains to reduce noise impacts, as necessary.

Each consultation letter should address the impacts listed in the checklist and their associated effects on listed species and their critical habitat. An explanation of how the impacts occur, their effects, and any mitigative measures that will be implemented to reduce the projects effects on listed species and their critical habitat should be included in the consultation letter.

* If Johnson's seagrass is present, please consult the following:

- *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation, Marsh or Mangrove Habitat - U.S. Army Corps of Engineers/National Marine Fisheries Service*, dated August 2001

- *Key for Construction Conditions for Docks or Other Minor Structures Constructed in or Over Johnson's Seagrass (Halophila johnsonii)National Marine Fisheries Service/U.S. Army Corps of Engineers,* dated October 2002

Updated: August 2008

Print Form

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Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- Loxahatchee River (Mile Post 282.58)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

26.947660 N, -80.090311W WGS84

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

Loxahatchee River. The project area is approximately 1.25 miles upstream of the Atlandtic Ocean

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing double track operational railroad with a draw bridge. The bridge is approximately 590 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

- What are the baseline conditions within the project area, including substrate type?

The bottom substrate was comprised of sand and crushed shells

- Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

- Are mangroves present in or near the project area? Which species (red, black, white) and how much?

Red and White mangroves were observed near the Assessment area

- Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

- Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

- Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Rehabilitation or replacement of existing structural steel girders, concrete piers, and mechanical and electrical systems. The process will return the span back to a movable double track bridge.

Bridge restoration activities will be performed from a barge unless deemed unsafe or ineffective. An alternative would be the installation of a temporary platform from which restoration activities would occur.

Although in-water work is currently not proposed there may be a potential need for in-water work, pending further examination of the existing bridge structures, and required construction methods; therefore, ESA consultation should be conducted assuming in-water work at this location.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

If pile installation is necessary, piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

The proposed work is limited to updates to the existing structures, with no new footprint. If in-water work is necessary, the maximum footprint would be 13,825 square ft (footprint of bridge)

- Will mangroves be impacted? Explain and quantify impacts.

Mangrove impacts are not anticipated. Potential trimming will be done in accordance with FDEP Guidance.

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Currently the proposed project will not result in modification to any habitats; however, if in-water work is deemed necessary, surface waters and wetlands may be impacted through installation of riprap and pilings, as well as shading of non-vegetated surface waters. If in-water work is deemed necessary, there may be direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity may include installation of pilings (temporary or permanent) and shade resulting from additional bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and if in-water work is deemed necessary, the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

No new shading impacts are proposed within the Assessment Area.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Currently, no pile driving is proposed within the Assessment Area. However, if deemed necessary, noise associated with pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles would be approximately 20 inches in diameter and be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

Table 1

Name and Mile Post (MP)	Mangroves Present	Red Mangroves Present	Seagrass Observed within Project Area	Oyster beds Observed on natural substrate	Bottom substrate	May Affect Not Likely to Adversely affect swimming sea turtles*	May affect not likely to adversely affect smalltooth sawfish	No affects to Johnson's seagrass, Atlantic sturgeon, shortnose sturgeon
Loxahatchee River (MP 282.50)	Yes	Yes	No	No	Sand and crushed shells	X	X	X
St. Lucie River (MP 260.93)	Yes	Yes	No	No	Small rocks and muck	X	X	X
Sebastian River (MP 212.07)	Yes**	No	No	Yes	Small rocks, muck,and shells	X	X	X
Turkey Creek (MP 197.70)***	No	No	No	No	Muck	X	X	X
Crane Creek (MP 194.36)	No	No	No	No	Small rocks, crushed shells, and muck	X	X	X
Eau Gallie River (MP 190.47)	Yes	No	No	Yes	Mud, small rocks, and crushed shells	X	X	X

*swimming sea turtles include: loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricate*), leatherback sea turtle (*Dermochelys coriacea*

**Mangrove not within project area

***Benthic survey was limited due to presence of Alligator

The Corps has completed an evaluation of the impacts the work may have on the loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricate*), leatherback sea turtle (*Dermochelys coriacea*); smalltooth sawfish *(Pristis pectinata*), Atlantic sturgeon (*Acipenser oxyrinchus),* shortnose sturgeon (*Acipenser brevirostrum*), Johnson's seagrass.

Based on information provided by the applicant, technical assistance from Mr. Brandon Howard and field assessments completed with Mr. Howard the Corps has determined that the proposed project would cause the following effects on federally listed species:

No effect: Atlantic sturgeon and shortnose sturgeon based on the proposed work occurring outside of their know range

No effect: Johnson's seagrass based on the absence of the species within the proposed work areas.

May affect, not likely to adversely affect: swimming sea turtles based on the applicant's agreement to follow the Sea turtle and Smalltooth Sawfish Construction Conditions during construction

May affect, not likely to adversely affect: smalltooth sawfish based on the applicant's proposed compensatory mitigation for loss of red mangrove habitat, absence of seagrass beds within the in-water work areas, and the applicant's agreement to follow the Sea turtle and Smalltooth Sawfish Construction Conditions during construction

Pursuant to Section 7 of the Endangered Species Act we request your concurrence with these determinations within 30 days. The attached Biological Assessment includes checklists for each in-water work location and provide information in accordance with 50 CFR §402.12 and 14(c) to assist you in concurrence with our determination for the proposed intercity passenger rail transportation between Orlando and Miami, Florida and/or preparation of a biological opinion for the proposed project.

An Essential Fish Habitat Assessment will be sent to NMFS, Habitat Conservation Division by separate letter.

Please advise if you agree with the above determination or provide a date when formal consultation would commence. If you have any questions regarding this letter, please contact Andrew Phillips at the letterhead address, by telephone at 321-504-3771 extension 14, or by electronic mail at andrew.w.phillips@usace.army.mil.

Sincerely,

Irene Sadowski
Chief, Cocoa Permits Section

Enclosures

Copy Furnished w/o enclosure: (electronically)

FRA; daniel.orlaskey@dot.gov

January 24, 2014

Mr. Andrew Philips
United States Army Corps of Engineers
Cocoa Permits Section
400 High Point Drive, Suite 600
Cocoa, Florida, 32926

Subject: Addendum 1 to AAF NOAA Fisheries Biological Assessment dated September 1, 2013

Dear Mr. Phillips:

AMEC Environment & Infrastructure, Inc. (AMEC), on behalf of All Aboard Florida – Operations LLC (AAF), submitted the *Biological Assessment for the All Aboard Florida Passenger Rail Project from Orlando to Miami, Florida: Species under NOAA Fisheries Jurisdiction* to the United States Army Corps of Engineers (USACE) on September 3, 2013 (BA). Following submission of this document, further study was conducted by representatives of AAF that examined the capability of existing bridges and 6 bridges were identified as requiring additional assessment. The results of the additional assessment concluded that each of the four (4) railroad bridges crossing the Eau Gallie River, Crane Creek, Turkey Creek, and the Sebastian River would eventually require replacement while the bridges crossing the Loxahatchee River and St. Lucie River would eventually require more substantial refurbishment than initially proposed. The locations of the aforementioned bridges are illustrated on Figure 1 (Attachment 1).

In light of the foregoing, AAF is studying whether to complete the Project with additional work at these locations as part of the initial construction of the Project (the "Bridge Alternative"). The Bridge Alternative includes the proposal to (a) complete new bridges alongside existing structures at the following locations due to the potential for those existing railroad bridges crossings to be eligible for listing on the National Register of Historic Places (NRHP): the Eau Gallie River, Crane Creek, Turkey Creek, and the Sebastian River; and (b) complete additional work at the bridges crossing the Loxahatchee River and St. Lucie River. The following summary details the proposed activities at each crossing that are being contemplated as part of the Bridge Alternative:

1. Mile Post (MP) 282.50 (Loxahatchee River) – Rehabilitation or replacement of existing structural steel girders, concrete piers, and mechanical and electrical systems. The process will return the span back to a movable double track bridge.
2. MP 260.93 (St. Lucie River) – Rehabilitation of existing structural steel, concrete piers, and mechanical and electrical systems.
3. MP 212.07 (Sebastian River) - Construction of twin new independent ballast deck structures located to the east of the existing railroad bridge. The ballast deck structures will be supported by concrete piers.
4. MP 197.70 (Turkey Creek) – Construction of new twin 181-ft independent ballast deck structures located on the west side of the existing bridge. The ballast deck structures will be supported by concrete piers.

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5. MP 194.36 (Crane Creek) – Construction of one new 650-ft independent ballast deck structure located on the east sides of the existing railroad bridge and one new single track bridge in the footprint of the removed western bridge. The new structures will be supported by concrete piers.
6. MP 190.47 (Eau Gallie River) - Construction of twin new 575-ft independent ballast deck structures located to the east of the existing railroad bridge. The ballast deck will be supported by concrete piers.

Although in-water work is currently not proposed at the Loxahatchee River and St. Lucie River, there may be a potential need for in-water work, pending further examination of the existing bridge structures, and required construction methods; therefore, ESA consultation should be conducted assuming in-water work at these locations. In addition, The existing historic bridges at the Eau Gallie River, Crane Creek, Turkey Creek, and Sebastian RIver will be left in place and maintained by FEC. FEC will be responsible for ensuring that overtime the deterioration of the bridges does not result in impacts to navigation, floodplains, wetlands, or ecological habitat through removal and relocation prior to deterioration and/or removal of fallen debris.

In addition, silt fence and floating turbidity barriers will be installed and maintained during construction in accordance with performance standards for erosion and sediment control and stormwater treatment set forth in section 62-40.432, FAC.

In light of the possibility that the Bridge Alternative may be incorporated into the Proposed Project (as defined in the BA), this addendum has been prepared to provide information regarding these additional bridge assessment areas (Bridge Assessment Areas) and potential impacts to protected species associated with the Bridge Alternative.

1.0 Existing Conditions and Action Area

The route for the Proposed Project is approximately 235 miles long. The North South Corridor lies along the Atlantic coast from Miami to Cocoa. The six bridges affected by the Bridge Alternative include bridges at Eau Gallie River, Crane Creek, Turkey Creek, Sebastian River, St., Lucie River, and Loxahatchee River (Attachment 1-Figure 1).

1.1 Survey Methods

Desktop surveys for known distribution of federally protected species were performed. County records on listed species available from the USFWS[1] and the Florida Natural Area Inventory (FNAI) Biodiversity Matrix[2] provided information on federally protected species documented, or expected to occur in the vicinity of the Project Area.

Field surveys included wetland delineations, pedestrian transects within Project Areas, incidental observations of protected species' presence and habitat type and quality; in-water seagrass and benthic resource surveys; and qualitative evaluation of habitats in the vicinity of proposed construction sites.

[1] United States Fish and Wildlife Service (USFWS). 2012. Species by County Report. Website: http://ecos.fws. gov/tess_public/. Accessed August 2012.
[2] Florida Natural Area Inventory (FNAI). 2013. Biodiversity Matrix. Website accessed: http://www.fnai.org/biointro.cfm

In October 2013, AMEC scientists evaluated the six Bridge Assessment Areas that are slated for improvements on account of the Bridge Alternative that may require in-water work. In-water benthic surveys were completed at all locations where there was potential for seagrass to occur. AMEC performed visual in-water reconnaissance of the Bridge Assessment Areas. The purpose of the benthic surveys was to characterize the bottom composition as well as determine the presence of seagrass beds, oyster beds, sponges, red mangrove wetlands, and other benthic resources. Visual assessment from bridge decks was used to identify whether or not an in-water survey should be conducted. Where deemed appropriate, benthic surveys were performed in accordance with NOAA Fisheries guidance for assessing medium and large project[3]. As part of the in-water seagrass survey protocol, if seagrasses were determined to be rooted within the assessment area, field personnel would delineate and quantify patch distribution[4].

1.2 Survey Results

The desktop survey identified the following federally listed plants and animals under NOAA Fisheries jurisdiction that might be found in the Project Area: sea turtles- Loggerhead (*Caretta caretta*), Green (*Chelonia mydas*), Kemp's Ridley (*Lepidochelys kempii*), Hawksbill (*Eremochelys imbricate*), and Leatherback (*Demochelys coriacea*); smalltooth sawfish (*Pristis pectinata)*, and Johnson's seagrass (*Halophila johnsonii)*. These species are discussed in detail in the BA. Critical habitat for these species was not identified within the vicinity of the Bridge Assessment Areas.

Potential habitat for sea turtles and smalltooth sawfish were observed during the field studies, including mangrove wetlands. No populations of Johnson's seagrass were identified within the Bridge Assessment Areas and none of the above referenced species were observed during the field surveys.

The results of the field surveys including the benthic resource surveys at each Bridge Assessment Area are described below and summarized in Table 1. The design for the bridges is not final yet; however, direct wetland impacts have been estimated based on the proposed footprint of the bridge, as the maximum potential impact acreage (including shading). Estimated wetland and surface water impacts at the six Bridge Assessment Areas are outlined in Table 2. A photograph log for the bridge project areas is located in Attachment 2. Aerial photographs of each bridge location are located in Attachment 3.

Eau Gallie River

Wetlands along the Eau Gallie River are limited to a narrow fringe along the shorelines. The steep river banks along the Eau Gallie River near the FEC bridge as well as the placement of ballast between the abutments and the river reduce the amount of area that wetland resources can establish. Due to the aforementioned disturbance, the vegetation within the fringe wetland and associated upland is comprised of mainly Florida Exotic Pest Plant Council (FLEPPC) listed invasive species (i.e. Brazilian Pepper (*Schinus terebinthifolius*) and Australian Pine (*Casuarina spp.*). Although the wetland has been diminished and is currently dominated by invasive vegetation, the tidally influenced brackish water has allowed for the establishment of a few white mangroves

[3] National Oceanic Atmospheric Association (NOAA) National Marine Fisheries Service. 2012. Recommendations for Sampling *Halophila johnsoii* at a Project Site. Website. http://sero.nmfs.noaa.gov/pr/docs/JSG%20 Survey%20Guidelines.pdf Accessed August 2012

[4] Florida Fish and Wildlife Conservation Commission (FWC) 2011. Recommended Survey Protocols for Estuarine and Marine Submerged Aquatic Vegetation (SAV) related to Permitting Applications (Draft).

(*Laguncularia racemosa)* along the northern bank of the Eau Gallie River. Their presence just west of the bridge platform along the northern bank is a positive characteristic when compared to the surrounding ecosystem. Additional plants observed growing within the Bridge Assessment Area included spike rush *(Eleocharis spp)*, coastal willow (*Salix caroliniana*), and saw palmetto (*Sabal palmetto*). Although visibility was noted as being moderate, AMEC scientists were able to view the bottom without obstruction. The results of the benthic survey indicated that the Eau Gallie River bottom in the Bridge Assessment Area was comprised of a slurry of mud, small rocks (less than 1 inch in size) and crushed shells. The survey did identify a few oyster shells within the Bridge Assessment Area; however, no oyster beds were observed. Given the composition of the aforementioned substrate and water quality, the aquatic environment near where the FEC railroad bridge does not appear to be conducive to either seagrass or oyster bed establishment. AMEC did not observe the presence of seagrasses or other submerged aquatic vegetation (SAV), oyster beds, sponges or associated species within the Bridge Assessment Area.

Crane Creek

Vegetation along the slopes of Crane Creek bridge included: common reed (*Phragmites australis*), pennywort (*Hydrocotyle spp*), and maidencane (*Panicum hem.*). The list of species growing within the delineated wetland also included Brazilian Pepper and Lead Tree (*Leucaena leucocephala*). Each of the aforementioned species is listed as a Category I FLEPPC invasive plant. Although, the bridge is located in a tidally influenced portion of Crane Creek, the observed wetland vegetation is indicative of freshwater wetland systems. During the October 9, 2013 survey, field personnel noted that mangroves were not observed within or near the above referenced Bridge Assessment Area. Additional signs of disturbance within the wetland included the placement of ballast at the approach to the abutment on the south side of the bridge. The results of the benthic survey indicated that Crane Creek bottom of the Bridge Assessment Area was comprised of small rocks (less than 0.5 inches in diameter), crushed shells, and highly decomposed organic matter. Based on the observed conditions, the aquatic environment near the Crane Creek railroad bridge does not appear to be conducive to either seagrass or oyster bed establishment. AMEC did not observe the presence of seagrasses or other submerged aquatic vegetation, oyster beds, sponges or associated species within the Bridge Assessment Area.

Turkey Creek

Due to the relatively steep slopes along Turkey Creek in the Bridge Assessment Area, wetlands are limited to a fringe wetland surrounding the bridge. Immediately to the west of the Bridge Assessment Areas, Turkey Creek meanders through a large stand of cattails (*Typha lancifolia*). Additional vegetation observed near the Bridge Assessment Area included cabbage palms (*Sabal palmetto*), Brazilian Pepper, and air potato (*Dioscorea bulbifera*). Both Brazilian Pepper and air potato are listed as a Category I FLEPPC invasive species. Although it is assumed that due to the Bridge Assessment Areas close proximity to the inter-coastal waterway (ICW), the water within the creek would be brackish; the observed lack of halophytic vegetation indicates the water within Turkey Creek is primarily fresh. Due to extremely poor visibility (black tinted water) and the presence of a large American Alligator, the survey only included a small area near the south and north banks of Turkey Creek near the railroad bridge. The limited benthic survey indicated that the bottom is mainly comprised of small rocks and muck. Based on the field observations of the substrate, the presence of freshwater vegetation, and black tinted water, the Turkey Creek Bridge Assessment Area does not appear to provide suitable habitat for seagrass or oysters beds. AMEC did not observe the presence of seagrasses or other submerged aquatic SAV, oysters, sponges or associated species within the Bridge Assessment Area.

Sebastian River

The steep river banks along the Sebastian River near the bridge as well as the placement of ballast between the abutments and the river have reduced the amount of wetland resources within the Bridge Assessment Area. Due to the steep banks and presence of ballast, the wetland area in the Bridge Assessment Area is limited to a narrow fringe along the river shoreline. Due to the aforementioned disturbance, the vegetation within the fringe wetland and associated upland was comprised of mainly of FLEPPC listed invasive species (i.e. Brazilian Pepper and air potato). There were no mangroves growing within the Bridge Assessment Area. Historically, the Sebastian River served as habitat for protected seagrasses and large oyster beds; however, residents and fisherman have stated that the aforementioned resources have become either non-existent in the case of seagrasses or in the case of the oysters contaminated and diminished. Although visibility was noted as being moderate and the water maintained a substantial chop, AMEC scientists were able to view the bottom without obstruction. The results of the benthic survey indicated that the shallow Sebastian River bottom of the Bridge Assessment Area was comprised of unconsolidated small rocks (less than 0.5 inch in size), highly decomposed organic matter, and shells. Although a very shallow sand bar was noted as being present near the middle of the river, seagrasses were not observed growing within or adjacent to the Bridge Assessment Area. The survey did identify an oyster bed on the northwest side of the bridge; however, it was mainly comprised of broken shells. Although portions of the Bridge Assessment Area maintained suitable substrate, the current aquatic environment does not appear to be conducive to seagrass establishment. AMEC did not observe the presence of seagrasses or other SAV, sponges or associated species within the Bridge Assessment Area.

St. Lucie River

The armoring of the shoreline with concrete bulkheads and metal sheet piling associated with the existing rail bridge has resulted in limited wetland resources within the Bridge Assessment Area. During the October 7, 2013 survey, a few red mangroves (*Rhizophora mangle*) and white mangroves were observed growing on both the north and south banks of the St. Lucie River near the Bridge Assessment Area. The red mangroves on the north side of the river were noted as being more mature than those on the south side of the river. Additional species observed growing within the fringe wetland included sea grape (*Coccoloba uvifera*) and Brazilian Pepper. AMEC scientists noted that visibility within the river was extremely poor with substantial amounts of sediment suspended in the water column. During the survey AMEC scientists noted that a thick layer of sediment covered the bottom of the river throughout most of the Bridge Assessment Area. Based on the observed turbid water and thick sediment layer covering the river bottom, the aquatic environment currently does not appear to be conducive to seagrass or oyster bed establishment. AMEC did not observe the presence of seagrasses or other SAV, oysters, sponges or associated species within the Bridge Assessment Area. During the October 7, 2013 survey, AMEC scientists noted the presence of several dolphins swimming in and around the Bridge Assessment Area.

Loxahatchee River

Wetland resources within the Bridge Assessment Area at the Loxahatchee River have been substantially reduced and limited to fringe wetlands along the shoreline. In areas of the shoreline that were not armored during the construction of the existing rail and road bridges, the railroad has since placed ballast down to the water's edge. During the October 7 and 8, 2013 survey, AMEC scientists did identify both red mangroves (*Rhizophora mangle)* and white mangroves growing near the existing railroad bridge and approach within the Bridge Assessment Area. Although mangroves were noted as being present, Brazilian Pepper and seaside mahoe (*Thespesia populnea*) were noted as being the dominant species within the wetland areas. Both Brazillian pepper and seaside

mahoe are FLEPPC listed species. Although seagrass are commonly observed growing throughout the central embayment of the Loxahatchee River, seagrasses were not observed within the Bridge Assessment Area. AMEC scientists noted that visibility within the river was excellent and the river bottom was viewed without obstruction. The bottom of the Bridge Assessment Area was comprised mainly of a thin layer of sand and crushed shells. It is assumed that the lack of seagrasses within the Bridge Assessment Area is due to the presence of two large bridges that have substantially reduced the amount of available light as well as increased the velocity of water moving through the Bridge Assessment Area. AMEC did not observe the presence of seagrasses or other SAV, oysters, sponges or associated species within the Bridge Assessment Area. During the October 8, 2013 in-water survey, AMEC scientist identified French angel fish, barracudas, sergeant majors, school master snappers, dog faced puffers, as well as various species of grunts swimming around the bridges.

Table 1. In-Stream Habitat at Bridge Crossings

Name and Mile Post (MP)	Fresh Water During Site Visit	Mangroves Present	Red Mangroves Present	Seagrasses Observed	In-Water Seagrass Survey Performed	Johnson's Seagrasses Observed	Oyster Beds Observed On Natural Substrate	Bottom Substrate
Eau Gallie (190.47)	No	Yes	No	No	Yes	No	No	mud, small rocks, and crushed shells
Crane Creek (194.34)	Yes	No	No	No	Yes	No	No	small rocks, crushed shells, and muck
Turkey Creek (197.70)	Yes	No	No	No	Yes*	No	No	muck
Sebastian River (212.07)	No	Yes**	No	No	Yes	No	Yes	small rocks, muck, and shells
St. Lucie River (260.93)	No	Yes	Yes	No	Yes	No	No	small rocks and muck
Loxahatchee River (282.58)	No	Yes	Yes	No	Yes	No	No	sand and crushed shells

*Benthic survey was limited due to presence of Alligator
** Mangrove not within project area

Table 2. Summary of estimated wetland/surface water impacts at the six Bridge Assessment Areas surveyed along the North-South Corridor

County	Name and Mile Post (MP)	Estimated Direct Impact Area (acres)	
		Wetlands	Surface Waters
Brevard	Eau Gallie (MP 190.47)	0.069	0.212
	Crane Creek (MP 194.34)	0.080	0.347
	Turkey Creek (MP 197.70)	0.003	0.088
	Sebastian River (MP 212.07)	0.046	0.812
Martin	St Lucie River (MP 260.93)	0.008*	0.323*
Palm Beach	Loxahatchee River (MP 282.58)	0.000*	0.317*
Total Impacts		0.205	2.099

*Currently, no in-water work is proposed at these sites; however, the number listed is the footprint of the bridge

1.3 Protected Species and Critical Habitat Likely to be Present in the Project Area

As discussed in the BA, five species of federally listed sea turtles [loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), Kemp's ridley sea turtle (*Lepidochelys kempii*), hawksbill sea turtle (*Eretmochelys imbricate*) and leatherback sea turtle (*Dermochelys coriacea*)], smalltooth sawfish *(Pristis pectinata*), and Johnson's seagrass (*Halophilia johnsonii*) are the federally protected species (under NOAA Fisheries jurisdiction) that have the potential to occur within the Project Area.

2.0 Effects Analysis

The Bridge Assessment Areas are located along the existing FEC rail corridor and are therefore currently impacted by existing freight train traffic. Primary issues associated with this Project for protected species under NOAA Fisheries jurisdiction include potential effects from construction associated with removal and replacement of bridges. Impact to habitat associated with construction include placement of pilings, placement of riprap/fill at the location of abutments, removal of existing timber pilings, and shading resulting from bridge construction. Long-term impacts to protected species associated with the Project may also include potential disturbance by an increase in noise from increased train traffic. To aid in the effect analysis AMEC utilized the *Checklist of Information Needed to Complete Section 7 Consultation* provided by NOAA Fisheries. A checklist for each of the six Bridge Assessment Areas is included in Attachment 4.

Impacts associated with the rehabilitation of the rail bridges within the six Bridge Assessment Areas are similar to the impacts outlined in the BA (See Section 4.0). Below is a summary of potential impacts to the protected species.

2.1 Sea Turtle

The only potential habitat for sea turtles in the Bridge Assessment Areas is located at the Sebastian River, St. Lucie River, and Loxahatchee River. It is unlikely sea turtle would be found within the other Bridge Assessment Areas. The potential habitat within the Sebastian River, St. Lucie River, and Loxahatchee River is limited to a migratory path way, as there is no foraging habitat (SAV) at these locations. Based on the findings from the October 2013 benthic surveys, seagrass beds were not identified within any of the Bridge Assessment Areas. With strict compliance to the sea turtle mitigation measures (described in detail in the BA Section 6.0) and use of air bubble curtains, it is

anticipated that the proposed action **may affect, but is not likely to adversely affect** the protected sea turtle species.

2.2 Smalltooth Sawfish

The proposed action at the six Bridge Assessment Areas will not result in permanent or temporary impacts to mangrove wetlands. Mangroves observed at the Eau Gallie River, the Sebastian River, the St. Lucie River, and Loxahatchee River are not anticipated to be effected by the Bridge Alternative. Furthermore, it is anticipated that the proposed maintenance activities at the Loxahatchee and St. Lucie River bridges will result in no permanent wetland impacts. Mitigation measures to reduce potential impacts to smalltooth sawfish will include strict adherence to sea turtle and smalltooth sawfish construction conditions (described in detail in the BA Section 6.0). The placement of fill and riprap in wetlands resulting from bridge construction are considered permanent impacts to jurisdictional wetlands. As a result, an appropriate CWA Section 404 permit will be obtained from the USACE prior to construction, and mitigation would be implemented as required by wetland permit conditions. With strict adherence to the sea turtle and smalltooth sawfish construction conditions and proposed mitigation, it is anticipated that the proposed action **may affect, but is not likely to adversely affect** smalltooth sawfish.

2.3 Johnson's Seagrass

Based on the results of the October 2013 field assessments (summarized in Table 1) it was determined that none of the Bridge Assessment Areas have populations of Johnson's seagrass.

The water quality protection measures that will be observed at all of the in-water construction areas to protect sea turtles and smalltooth sawfish should provide protection to downstream populations of seagrasses and other SAV.

It is anticipated that the proposed action will have **no effect** to Johnson's seagrass.

3.0 Take Analysis

No direct take is anticipated for federally listed species under NOAA Fisheries jurisdiction.

4.0 Conservation and Mitigation Measures

The corridor of the Project passes through important fish and wildlife habitat. Although no direct take is anticipated, the measures outlined in the BA will be implemented to reduce or eliminate potential environmental impacts associated with the proposed action, including implementation of the Sea Turtle and Smalltooth Sawfish Construction Conditions[5].

The placement of fill and riprap in wetlands resulting from bridge construction are considered permanent impacts to jurisdictional wetlands. As a result, an appropriate CWA Section 404 permit will be obtained from the USACE prior to construction, and mitigation would be implemented as required by wetland permit conditions. AAF proposes to purchase credits at approved mitigation

[5] National Marine Fisheries Service (NMFS). 2006. Sea Turtle and Smalltooth Sawfish Construction Conditions. http://www.dep.state.fl.us/Water/ wetlands/forms/spgp/SPGP_IV_Attachment_14-Sawfish_SeaTurtlesConstCond.pdf. Accessed December 29, 2009.

banks to provide compensatory mitigation for impacts to wetlands. As of the date of this report, construction drawings have not been finalized and therefore wetland (including mangrove) impacts have not been calculated. Once impact acreage is calculated, UMAM (Chapter 62-345, FAC), WRAP/EWRAP, or WATER assessment methods will be used to evaluate the wetlands and mitigation credits will be purchased from the appropriate banks.

5.0 Determination of Effect

The information available for the Project has been analyzed, and it has been concluded that the implementation of the Bridge Alternative would have a negligible probability of take of listed species. The additional work proposed at the six Bridge Assessment Areas will not change the determination of effects made in the BA (Table 7-1). As outlined in the BA, the determination of effect for the species likely to occur at the six Bridge Assessment Areas is summarized in Table 3. The rationale for each of these determinations is discussed in detail above.

Table 3. Listed Species and Determination of Effect

Listed Species	Determination of Effect
Green Sea Turtle	May affect, but is not likely to adversely affect
Loggerhead Sea Turtle	May affect, but is not likely to adversely affect
Leatherback Sea Turtle	May affect, but is not likely to adversely affect
Kemp's Ridley Sea Turtle	May affect, but is not likely to adversely affect
Hawksbill Sea Turtle	May affect, but is not likely to adversely affect
Smalltooth Sawfish	May affect, but is not likely to adversely affect
Johnson's Seagrass	No effect

Source: AMEC, 2013. Prepared by: SEM Checked by: RJM

Sincerely,

AMEC Environment & Infrastructure, Inc.

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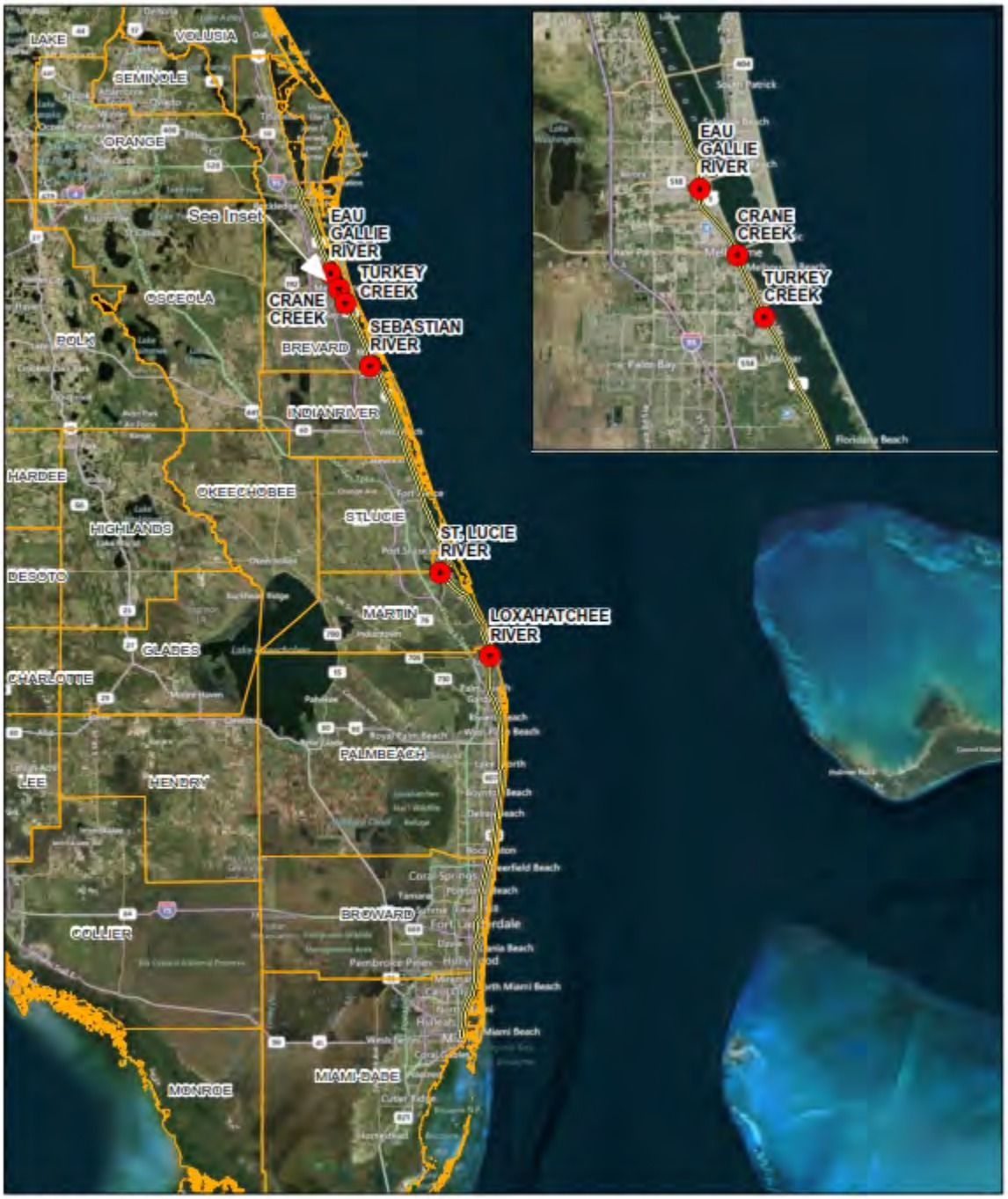
Attachments:
Attachment 1- Figures
Attachment 2- Photograph Log
Attachment 3- Aerial Photographs
Attachment 4- ESA Checklists

Attachment 1

Figures


LAKE
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POLK
BREVARD
INDIANRIVER
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HIGHLANDS
DESOTO
GLADES
CHARLOTTE
LEE
HENDRY
COLLIER
MONROE
MIAMI-DADE
BROWARD
PALMBEACH
MARTIN
STLUCIE
EAU GALLIE RIVER
TURKEY CREEK
CRANE CREEK
SEBASTIAN RIVER
ST. LUCIE RIVER
LOXAHATCHEE RIVER
EAU GALLIE RIVER
CRANE CREEK
TURKEY CREEK
Explanation of Features
Bridges
N-S Corridor
Data Sources: ESRI Bing Maps 2012 Imagery, FRA 2012, AMEC 2013
Six New Bridge Asssessment Areas
All Aboard Florida Intercity Passenger Rail Project
Drawn
Date
DLA
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Fig 1

Attachment 2

Photograph Log

Photograph 1. Eau Gallie River (Mile Post: 190.47), Facing south across the Eau Gallie River

Photograph 2. Eau Gallie River (Mile Post: 190.47), White mangrove and saw palmetto growing beneath the bridge

Photograph 3. Crane Creek Bridge (Mile Post: 194.47), Facing south from the northern bank

Photograph 4. Crane Creek Bridge (Mile Post: 194.47), Facing north toward to the waterside park

Photograph 5. Turkey Creek Bridge (Mile Post 170.70), View facing north.

Photograph 6. Turkey Creek Bridge (Mile Post 170.70), View facing south

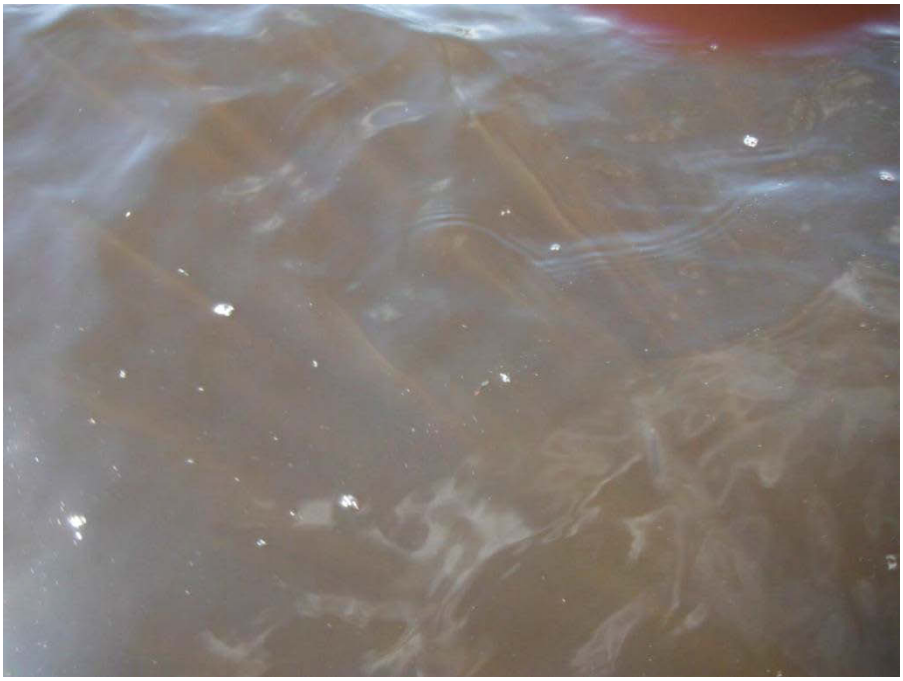
Photograph 7. Sebastian River (Mile Post: 212.07), Sebastian River FEC Railroad Bridge

Photograph 8. Sebastian River (Mile Post: 212.07), South Side of the Sebastian River Railroad Bridge

Photograph 9. Sebastian River (Mile Post: 212.07), In-water benthic survey

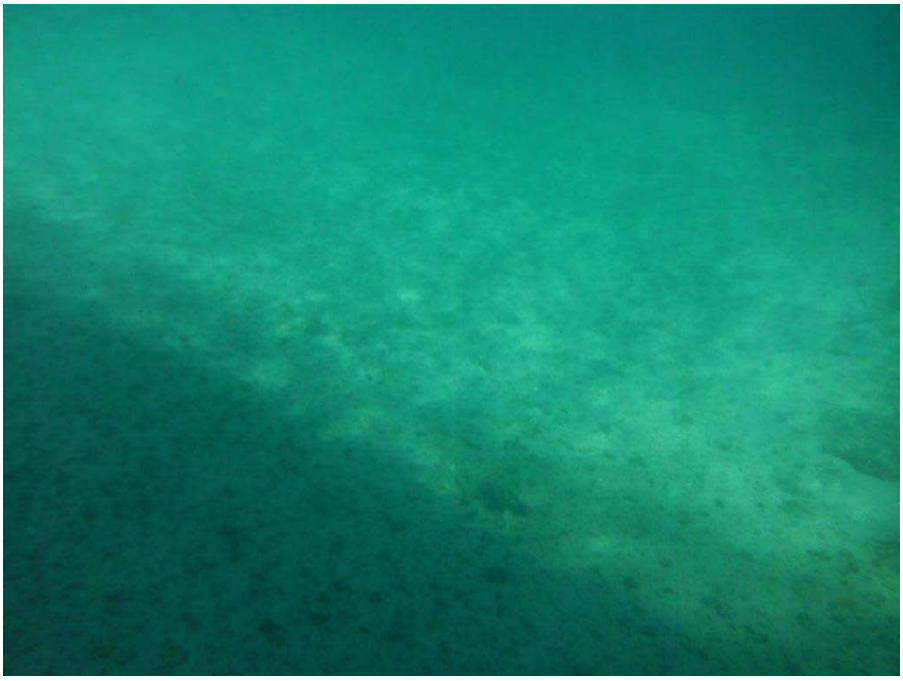
Photograph 10. St. Lucie River Bridge (Mile Post 260.93), Facing north across the St. Lucie River

Photograph 11. St. Lucie River Bridge (Mile Post 260.93), Disturbed mangrove wetland located on the northern bank of the river



Photograph 12. St. Lucie River Bridge (Mile Post 260.93), Turbid condition of the water throughout the St. Lucie River

Photograph 13. Loxahatchee River Bridge (Mile Post 282.58), Facing north across the Loxahatchee River



Photograph 14. Loxahatchee River Bridge (Mile Post 282.58), Example of the sandy covered benthos within the project area

Photograph 15. Loxahatchee River Bridge (Mile Post 282.58), Sandy bottom with algae covered shells and rocks

Photograph 16. Loxahatchee River Bridge (Mile Post 282.58), Puffer fish and sergeant majors schooling near the algae cover rip rap near the southern shoreline.

Attachment 3

Aerial Photographs

Explanation of Features

Project Area (1.94 ac.)

North/South Study Area Line

Data Sources: ESRI Bing Maps 2012 Imagery, NWI 2012, AAF 2012, AMEC 2012

Eau Gallie River Bridge Site Map

Bridge Over Eau Gallie River at Milepost 190.47 Along AAF Rail Corridor

Drawn	Date
TSK	09/18/2013
Checked	Date
GWC	10/30/2012

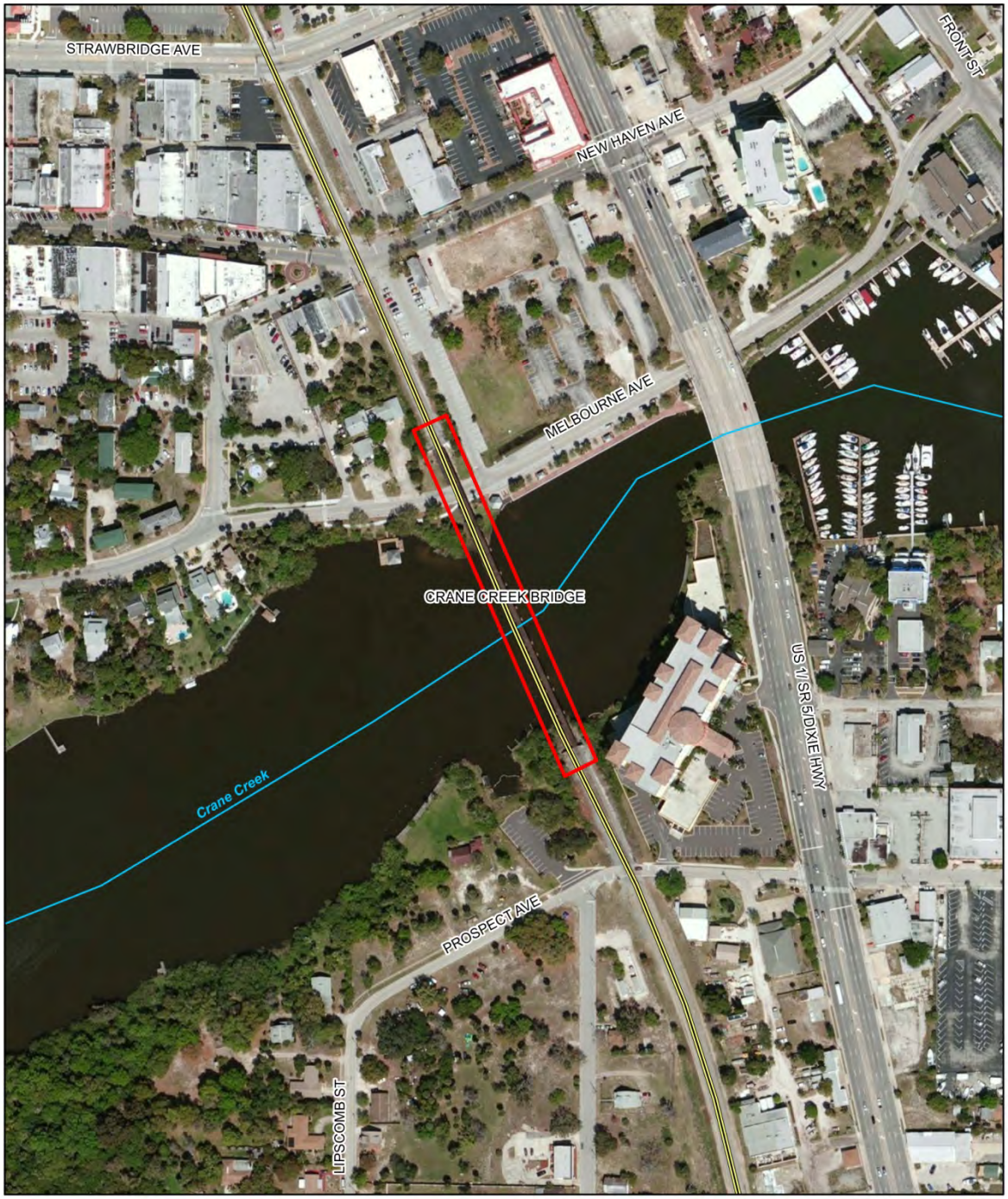
N 0 100 200 ft

amec

Figure 1

Path: F:\FEC\FECI_GDB\MXD\Permitting\ACOE\Eau Gallie\Figure 1 Site Map.mxd

Project # 6063-12-0212



Explanation of Features

Project Area (1.20 ac.)

North/South Study Area Line

Data Sources: ESRI Bing Maps 2012 Imagery , AAF 2012

Crane Creek Bridge Site Map

Bridge Over Crane Creek at Milepost 194.47 Along AAF Rail Corridor

Drawn	Date
TSK	09/18/2013
Checked	Date
GWC	09/18/2013

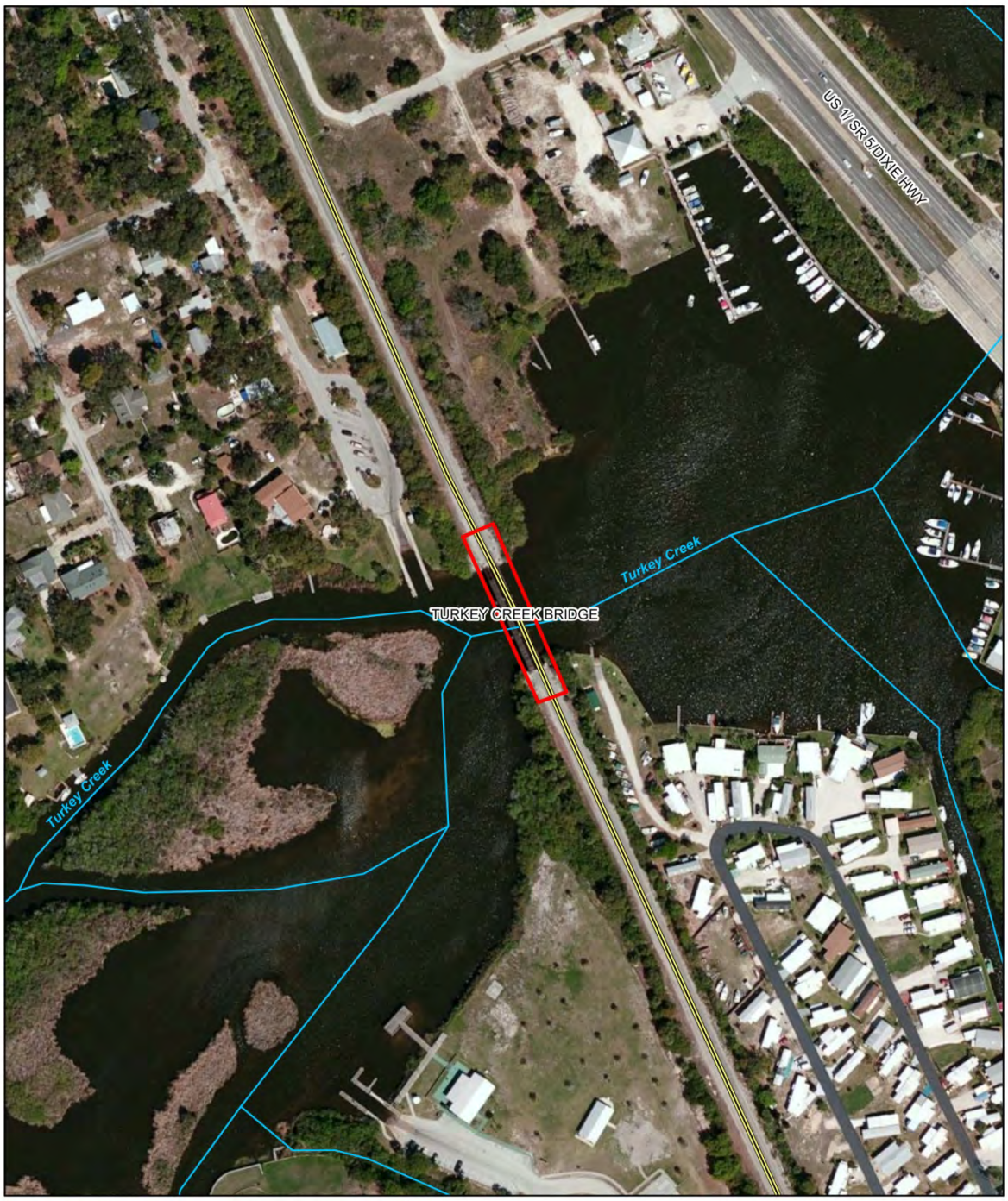
N 0 100 200 ft

amec

Figure 1

Path: F:\FEC\FECI_GDB\MXD\Permitting\ACOE\Crane Creek\Figure 1 Site Map.mxd

Project # 6063-12-0212



Explanation of Features

Project Area (0.33 ac.)

North/South Study Area Line

Data Sources: ESRI Bing Maps 2012 Imagery, NWI 2012, AAF 2012

Turkey Creek Bridge Site Map

Bridge Over Turkey Creek at Milepost 197.70 Along AAF Rail Corridor

Drawn	Date
TSK	09/18/2013
Checked	Date
GWC	09/18/2013

N 0 100 200 ft

amec

Figure 1

Path: F:\FEC\FECI_GDB\MXD\Permitting\ACOE\Turkey Creek\Figure 1 Site Map.mxd

Project # 6063-12-0212

Explanation of Features

- Project Area (1.81 ac.)
- North/South Study Area Line
- Transect
- Decomposed Oyster Bed
- Shallow Sand Bar
- Small Rock/Sand/Crushed Shell/Minor Organics

Data Sources: ESRI Bing Maps 2012 Imagery, NWI 2012, AAF 2012, AMEC 2013

Sebastian River Bridge Benthic & Seagrass Survey Map

Bridge Over Sebastian River at Milepost 212.07 Along AAF Rail Corridor

Drawn	Date
TSK	09/18/2013
Checked	Date
GWC	09/18/2013

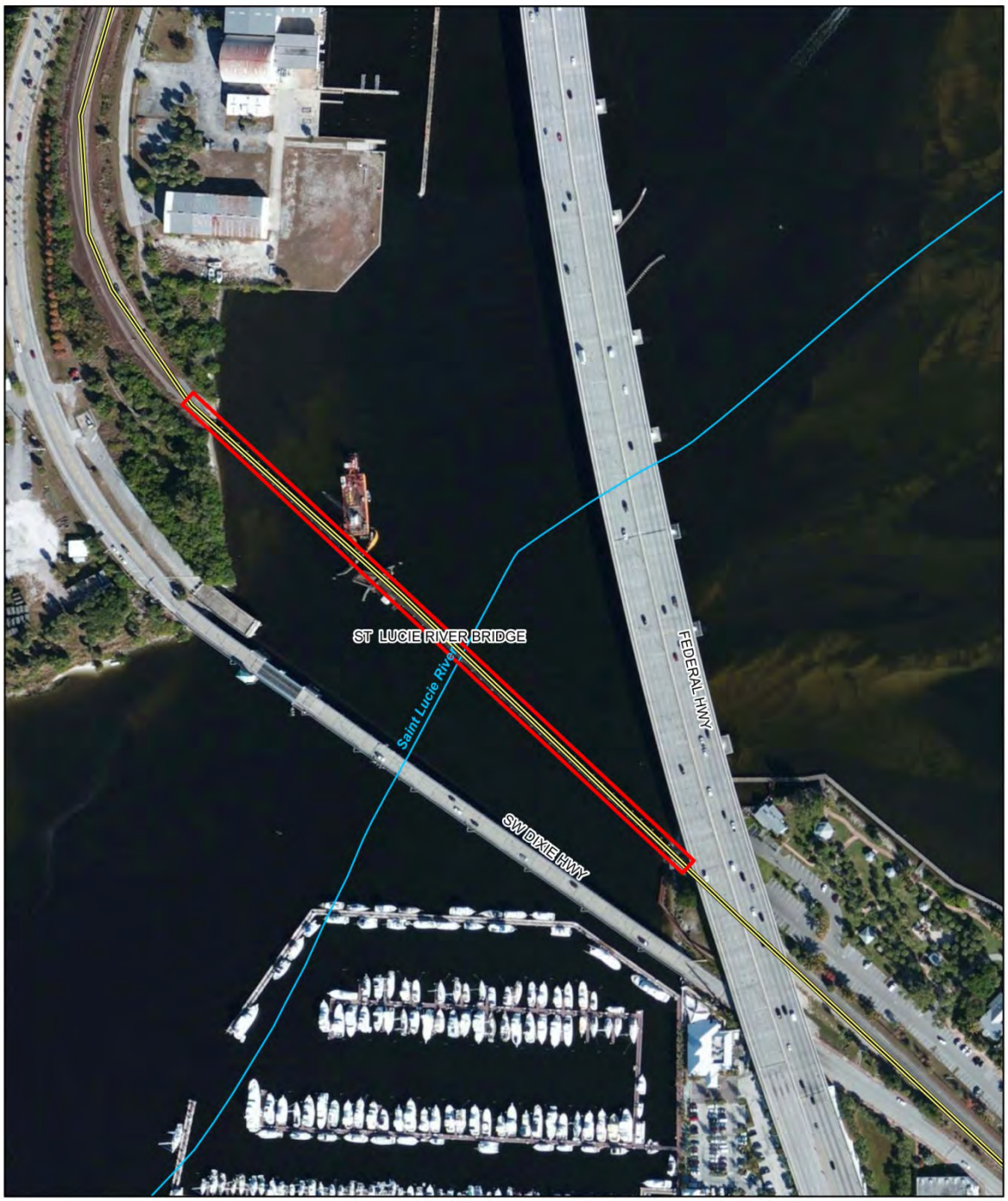
N 0 75 150 ft

amec

Figure 3

Path: F:\FEC\FECI_GDB\MXD\Permitting\ACOE\Sebastian River\Figure 3 Benthic & Seagrass Survey Map.mxd

Project # 6063-12-0212



Explanation of Features

Project Area (1.0 ac.)

North/South Study Area Line

Data Sources: ESRI Bing Maps 2012 Imagery, NWI 2012, AAF 2012

St. Lucie River Bridge Site Map

Bridge Over St. Lucie River at Milepost 260.93 Along AAF Rail Corridor

Drawn	Date
TSK	09/19/2013
Checked	Date
GWC	09/19/2013

N

0 100 200 ft

amec

Figure 1

Path: F:\FEC\FECI_GDB\MXD\Permitting\ACOE\St. Lucie River\Figure 1 Site Map.mxd

Project # 6063-12-0212

Explanation of Features

Project Area (0.84 ac.)

North/South Study Area Line

Data Sources: ESRI Bing Maps 2012 Imagery, NWI 2012, AAF 2012, AMEC 2012

Loxahatchee River Bridge Site Map

Bridge Over Loxahatchee River at MP 282.58 Along AAF Rail Corridor

Drawn	Date
TSK	09/19/2013
Checked	Date
GWC	09/19/2013

N

0 100 200 ft

amec

Figure 1

Attachment 4

ESA Checklists

Print Form

Checklist of Information Needed to Complete Section 7 Consultations for U.S. Army Corps of Engineers Regulatory Division Applications

Project Specifications:

- Project or name of applicant, Action ID number

All Aboard Florida- Eau Gallie River (Mile Post 190.47)

- Describe the location of the project site (address and latitude/longitude information). Location data **must** be given datum (e.g., NAD83) and lat/long format using decimal-degrees (**not** minutes and seconds): e.g., 27.71622N, 80.25174W.
  On-line conversion: http://www.fcc.gov/mb/audio/bickel/DDDMMSS-decimal.html

28.124032N, 80.63387W WGS84

- In which body of water is the project located? If on a river or estuary, state the approximate navigable distance from the bay, ocean, or gulf).

Eau Gallie River. The project area is approximately 0.6 miles upstream of Indian River Lagoon

Site Description:

- Describe any existing structures and their use - for instance, acreage of overwater structures, if it's an existing marina, how many boat slips are present and what is their size.

There is an existing operational double track railroad bridge. The bridge is approximately 575 ft across and is constructed from concrete pilings and steel girders.

- Is the project location within designated critical habitat?

No

- If project occurs in critical habitat, are PCEs present?

Project does not occur within Critical Habitat.

- What are the baseline conditions within the project area, including substrate type?

There was a composite substrate comprised of mud, small rocks, and sand/shell.

- Are seagrasses present in the project area? Include percent coverage estimates by species and the relative location of seagrass in relation to proposed structures. Was a seagrass or benthic habitat survey completed? If so, please submit. *

No seagrasses were present within Assessment Area.

- Are mangroves present in or near the project area? Which species (red, black, white) and how much?

White mangroves are present within the project area; however, they were located west of the bridge footprint and will not be impacted by the project.

- Are corals present in or near the project area? Include density or percent coverage estimates by species and describe proximity of corals to proposed structures.

No

- Was a benthic survey conducted within Johnson's seagrass growing season (April 1 - August 31)?

☒ Yes ☐ No

Construction Methods/ Project Description:

- Construction methods, including description of any demolition of existing structures or removal of debris. Will the work be done from a barge or uplands?

Construction of twin new 575-ft independent ballast deck structures located to the east of the existing railroad bridge. The ballast deck will be supported by concrete piers.

The proposed superstructure will consist of Standard Precast Pre-stressed Concrete Bridge Slabs. The Bridge slabs will sit atop the pile bent cap. A crane will place the bridge slabs on the abutment. To form the end bents and backwall, a small area upslope will be excavated to install the forms. After installation is complete the area will be backfilled and compacted. Rip–rap will be placed around the abutment for slope protection. Walkways will be attached on either side of the bridge. Construction will be performed from the shore. An in-water platform may be required for pile installation. The existing historic bridge will be left in place and maintained by FEC. FEC will be responsible for ensuring that overtime the deterioration of the bridge does not result in impacts to navigation, floodplains, wetlands, or ecological habitat through removal and relocation prior to deterioration and/or removal of fallen debris.

- For docks, what type of decking will be used? If grated, provide manufacturer's name/ address/grating type, and percent light transmittance (%LT) of the grating design used? If wooden planks, what is the proposed spacing between the deckboards (½-inch, ¾-inch, 1-inch, other?). *Has the applicant been advised that COE-NMFS project review is significantly simplified and expedited for dock designs incorporating >43% LT grated decking, or 1-inch deckboard- and walkway-spacing, over Johnson's seagrass areas?* Proposed height of dock? Orientation of the dock (N, S, etc.)?

N/A

- Piling construction methodology. Are pile driving methods adequately described and are potential impacts to species adequately addressed? Will submerged aquatic vegetation (SAV) be impacted by pile installation? *If necessary, will the applicant's contractor adjust the spacing between piles to avoid driving piles onto Johnson's seagrass? Avoiding all piling impacts to JSG will significantly simplify and expedite the COE-NMFS project review process.*

Piles will be driven to load bearing capacity for E80 live loads. Piles will be driven with a steel pile driving template placed to prevent movement of the pile group. SAV were not observed within the project footprint.

- Number of new slips and size of slips, if applicable. If new construction includes High-and-Dry boat storage, what is the High-and-Dry vessel storage capacity?

N/A

- How big are the boats that are planned to be moored at the dock (either in the water or on a boatlift), if known?

N/A

- For all projects **not** involving docks or marinas (i.e., seawalls, jetties, etc.), please provide project description.

N/A

- Dredging? If yes, describe depth of cut, dredge type used, how many cubic yards, and what will be done with the spoil. Describe bottom sediments. Describe area hydrodynamics, i.e., average current speed and direction.

N/A

- Blasting? If yes, describe explosive weights, blasting plan, etc.

N/A

- What is the intended construction schedule (how many days, weeks, or months for in-water work)?

Work will be completed by December 2016

Potential Effects on Species/Critical Habitat:

- Please explain any impacts/effects to the critical habitat's primary constituent elements - PCEs)? Please identify which critical habitat unit(s) is being affected (e.g., Gulf sturgeon have 14 units, seven under NMFS jurisdiction and seven under FWS jurisdiction).

N/A

- What will the effects be, if any, to each PCE?

N/A

- Square footage to be affected by project?

12,268 sq ft will be affected by the project footprint.

- Will mangroves be impacted? Explain and quantify impacts.

Mangrove impacts and trimming are not anticipated.

- How will the habitat be changed/altered as a result of the action? Could or will the alteration affect listed species? How?

Approximately 12,268 sq. ft. of surface waters and wetlands will be impacted by the installation of riprap and pilings, and shading of non-vegetated surface water by the new bridge. The proposed bridge construction may have direct short-term adverse effects on the water quality in the project vicinity. Effects to the managed species known to occur in the project vicinity would include installation of pilings and shade resulting from bridge deck construction. Pilings would ultimately result in a beneficial effect to species/life stages that prefer such structures as habitat, such as adult goliath grouper, gray snapper, and mutton snapper. Lifecycle functions will not be affected by the proposed activities.

•Listed species within the project area:

☒ Sea turtles	☒ Smalltooth sawfish	☐ Shortnose sturgeon
☐ Elkhorn coral	☐ Johnson's seagrass	☐ North Atlantic right whales
☐ Staghorn coral	☐ Gulf sturgeon	☐ Other whales

•Explain potential effects to each species checked above:

Sea turtles and smalltooth sawfish may utilize the Assessment Area for migration, but habitat requirements for foraging and nesting do not occur in the project area. It was determined that the project is not likely to affect either species because there are no anticipated impacts to mangroves and the Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed.

•Shading impacts from construction.

Approximately 9,250 sq. ft. of non-vegetated surface water will be shaded by the new bridges.

•What is the estimated shadow effect of the boat (sq ft of shaded area beneath)?

N/A

•Discuss potential anchoring impacts to seagrass and corals. Discuss available water depth under the keel/propeller at Mean Low Water and the potential for prop dredging or blowouts. Discuss potential prop-scarring impacts to corals and seagrasses.

N/A

•Describe increased boat traffic impacts, if any. Are there posted speed zones in the area?

N/A

•Describe Noise Impacts (this section not applicable to single-family, multi-family, and marina dock projects where piles driven are 12 inches or less in diameter).

Noise associated with the pile driving may affect sea turtles, fish, including the smalltooth sawfish, and invertebrate species. Concrete piles will be approximately 20 inches in diameter and will be driven with a steel pile driving template. According to the Federal Railroad Administration's 2005 Noise and Vibration manual the typical noise levels 50 feet from the source for Impact Pile Drivers are 101 dBA and for Sonic Pile Drivers are 96 dBA. Based on other literature the estimated sound pressure associated with the pile driving at five meter depth is 185 Peak, 170 RMS, and 160 SEL (Illinworth & Rodkin, 2007). The contractor for this project has not yet been selected. If noise levels exceed those listed below, an air bubble curtain as well as other dampening techniques will be used while driving piles to help reduce impacts. No blasting will occur during construction.

- Source level of noise exceeds 120 dB re 1uPa RMS for continuous noise

  ☐ Yes ☒ No

- Source level exceeds 160 dB re 1 uPa RMS for impulsive noise

  ☐ Yes ☒ No

- Source level exceeds 180 dB re 1 uPa zero to peak

  ☐ Yes ☒ No

Effects Determination:

- For executing the action (i.e., construction activities)

  ☐ No Effect ☒ NLAA ☐ May Affect

- For the result of the action (i.e., new dock)

  ☐ No Effect ☒ NLAA ☐ May Affect

- If "No Effect" is determined for all species and critical habitat, please note your findings in a memorandum to your project file; no consultation/concurrence with/from NMFS is required.

  ☐ Memo made ☒ N/A

Mitigation/Protective Measures:

- Will the applicant follow the August 2001 Dock Construction Guidelines?

  ☐ Yes ☒ No

- Will the applicant follow the October 2002 Johnson's Seagrass Key?

  ☐ Yes ☒ No

- Will the Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006, be followed?

  ☒ Yes ☐ No

- If not following any of the above, please explain:

Johnson seagrass is not present within the project area. Dock construction is not being performed.