

## Monthly Pile Driving Summary and Underwater Noise Monitoring Results

**Pile Driving Period: September 3, 2017 – September 30, 2017**

DOC Reference: TA\_FHWA\_03219\_RPT\_ENV



### Summary:

Production pile driving for steel piles [REDACTED] in diameter was completed on June 5, 2015 and no impact pile driving [REDACTED] was conducted during this reporting period. Therefore, no sturgeon were severely injured or killed as a result of underwater noise from pile driving during this reporting period.

Future impact pile-driving activities are scheduled for [REDACTED] piles as indicated in Table 10 of the NMFS BO, dated January 4, 2017. This monthly summary will allow the continued tracking of sturgeon take associated with those piles.

### Pile Installation and Underwater Noise Monitoring:

During the monthly period from September 3, 2017 through September 30, 2017, no piles were driven with the impact hammer.

Since the current NMFS BO was issued on January 4, 2017, impact pile driving of [REDACTED] piles has been completed.

Based on the recorded pile-driving times and isopleth widths documented for those piles:

- the cumulative incidental take for the [REDACTED] piles driven as anticipated in Table 10 of the January 2017 NMFS BO) was calculated as 0.12 sturgeon, which is less than the anticipated take of 0.74 sturgeon for the same [REDACTED] piles in Table 10.

The method for estimating anticipated and calculated sturgeon take is described below.

#### *Anticipated Sturgeon Take from Table 10 of the NMFS BO*

For the purposes of tracking take associated with the subset of piles from the groups of piles shown in Table 10 (i.e., Anticipated Sturgeon Take), total take for each time period is divided by the number of piles scheduled to be driven during the time period. This value is compared with the Calculated Sturgeon Take (described in the next section) to determine whether or not take has been exceeded during the reporting period.

#### *Calculated Sturgeon Take to Date*

Following the same method used to estimate incidental sturgeon take for Table 10, the product of pile driving time, number of gill nets to span the width of the 206 dB isopleth, and sturgeon encounter rate of 0.033 sturgeon per net per hour is used to calculate sturgeon take for the piles driven during this reporting period (i.e., Calculated Sturgeon Take). For previous piles that have been monitored for underwater noise, the diameter of the 206 dB peak SPL isopleth is measured based on the maximum peak SPL recorded during pile driving. For the unmonitored piles, the maximum recorded isopleth diameter is assigned based on noise monitoring from the test pile program or from noise monitoring of piles at each pier. Actual pile driving times for each of the piles are used in the calculations.

Report Period: 09/03/2017 to 09/30/2017

Date	Year	Week	Pile diameter (feet)	Pier-Pile Number	Net Impact Pile Driving Duration (hrs/pile)	Pile driving time from Table 10 of the NMFS BO (hrs/pile)	Average width of isopleth for 206-dB peak SPL (feet)	Maximum width of isopleth for 206-dB peak SPL (feet)	Number of gill nets to span the 206-dB peak SPL isopleth	Sturgeon encounter rate (fish/net/hour)	Sturgeon take
<b>No piles were impact driven during the reporting period</b>											
<b>Monthly sturgeon take (Calculated based on pile-driving data/Anticipated from Table 10 of the January 2017 NMFS BO)</b>											-
<b>Cumulative sturgeon take to date (Calculated based on pile-driving data/Anticipated from Table 10 of the January 2017 NMFS BO)*</b>											<b>0.12/0.74</b>

\* As of the September 2014 NMFS BO, the exempted incidental take for sturgeon as a result of exposure to underwater noise during impact pile driving was 37 Atlantic sturgeon and 37 shortnose sturgeon. With the issuance of the June 2016 BO, the exempted take was reduced to 6 Atlantic sturgeon and 6 shortnose sturgeon in order to reflect the anticipated incidental take for the remaining piles that will be installed (i.e., the piles associated with the first 31 sturgeon had been driven, and the take accounted for, as of the issuance of the June 2016 BO). Note that previous monthly reports submitted prior to the issuance of the June 2016 BO accounted for estimates of anticipated sturgeon take for piles driven [REDACTED] (April 17, 2016 – May 09, 2016) and [REDACTED] (May 15, 2016 – June 11, 2016). Because the piles [REDACTED] are also included in Table 8 of the June 2016 BO, the anticipated take for those piles was also included as part of the cumulative take estimate reported in the remaining monthly reports submitted after the issuance of the June 2016 BO and prior to the issuance of the January 2017 BO. With the issuance of the January 2017 BO, the exempted take was again reduced to 3 Atlantic sturgeon and 3 shortnose sturgeon in order to reflect the anticipated incidental take for the remaining piles that will be installed in 2017 and 2018. To allow tracking of incidental take with respect to Table 10 of the January 2017 BO, the cumulative take reported in the table above will be with reference to the exempted incidental take of 3 sturgeon.