

CHICAGO SANITARY & SHIP CANAL DISPERSAL BARRIERS UPDATE

October 8, 2019

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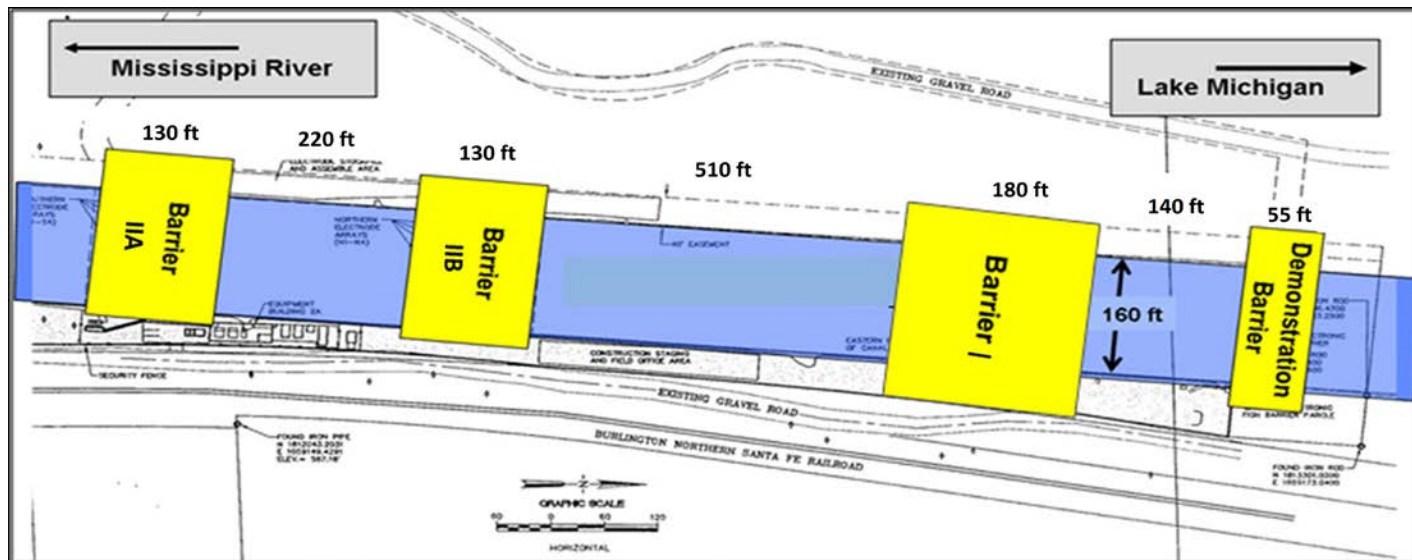


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SEASONAL OPERATING PLAN

- Cold water = low fish activity & higher barrier effectiveness
- Starting Thursday December 5
 - Reduce IIA & IIB field strength to 1.7 Volts/inch
 - Turn off Demo Barrier unless IIA or IIB must be taken off line
- Return IIA & IIB to 2.3 Volts/inch & reactivate Demo Barrier when canal water $> 10\text{ C}$ ($\sim 50\text{ F}$) for a week



BARRIER WINTER SHUTDOWNS

- Underwater Dive Inspection of Barrier I & Demo Barrier
 - January 20 – 31
 - IIA will remain active, IIB will be powered down while divers in water
 - Will require daily windows with canal closures for vessel traffic
- Annual Maintenance of Each Barrier
 - Demo: January 20 – 25
 - IIB: January 27 – February 5
 - IIA: February 17 - 26

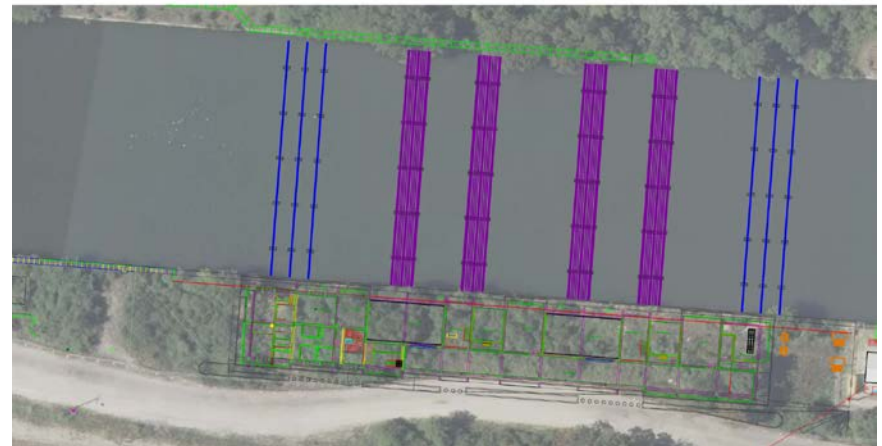


PERMANENT BARRIER I

- Capacity for two high field arrays; only one (north) funded
- Schedule
 - Aug 2020 – north pulse-generating system complete
 - Sep 2020 - performance verification testing
 - Oct/Nov 2020 - safety testing
 - 2021 – activation of north array following review of safety testing by USACE & USCG



PB1 Building



PB1 Electrodes & Parasitics



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EFFICACY STUDY INTERIM IV

- Summary of barrier safety and effectiveness studies completed to date
- Qualitative risk assessment of potential barrier failure modes

<i>Frequency of Event</i>	<i>Opportunity for Passage if Event Occurs</i>				
	Negligible	Low	Medium	High	Certain
Very Likely	2	3	4	5	5
Likely	1	2	4	5	5
Unlikely	0	1	3	3	4
Very Unlikely	0	0	1	2	4

- Highest risks
 - Entrainment by vessels
 - Variations in the electric field due to metal hulls
 - Flow reversals in canal
- Report available at:

<https://www.lrc.usace.army.mil/Missions/Civil-Works-Projects/ANS-Portal/Efficacy/>



EFFICACY STUDY INTERIM V

- Objective: Optimize operation of the barrier system
- Develop operations protocols
 - Determine
 - Which barriers are operating
 - At what operating parameters
 - Based on
 - Fish monitoring results
 - Water conditions (e.g. conductivity, temperature)
- Recommend additional measures to mitigate risks identified in Interim IV
- Complete in 2020



QUESTIONS?

