Gulf Intracoastal Waterway, Brazos River Floodgates and Colorado River Locks Feasibility Study

IWWUB 88th Meeting
August 2018

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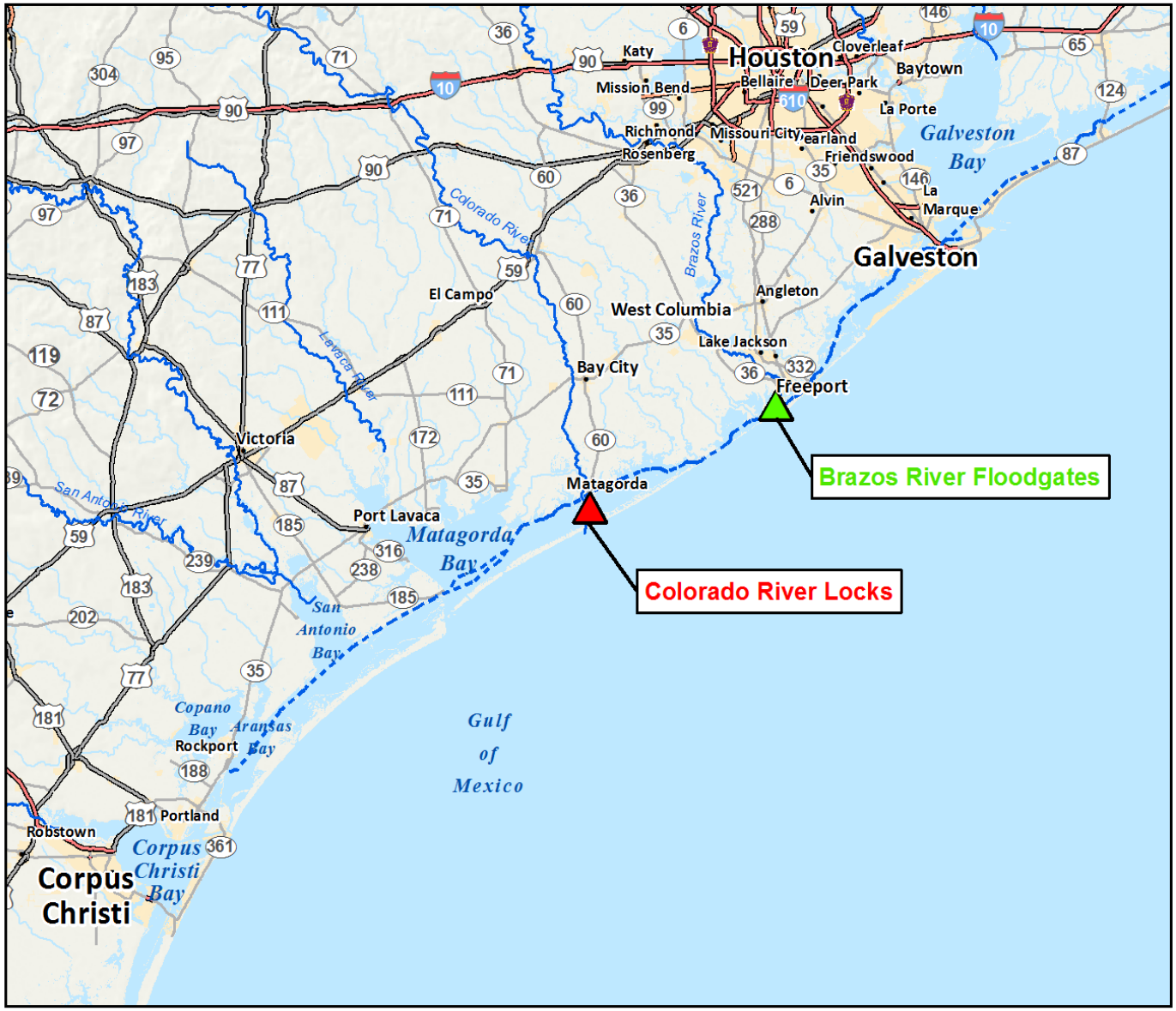
Galveston District

Brazos River Floodgates and Colorado River Floodgates - Project Location



Legend

- Brazos River Floodgates
- Colorado River Locks
- Gulf Intracoastal Waterway
- River

1:2,000,000

0 10 20 40 Miles

Base Map: ESRI

Location Map

STUDY AUTHORITY

Flood Control Act of 1970 – Section 216

"The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significant changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest."

The BRFG-CRL Study Partner is:

- The Texas Department of Transportation (TXDOT)

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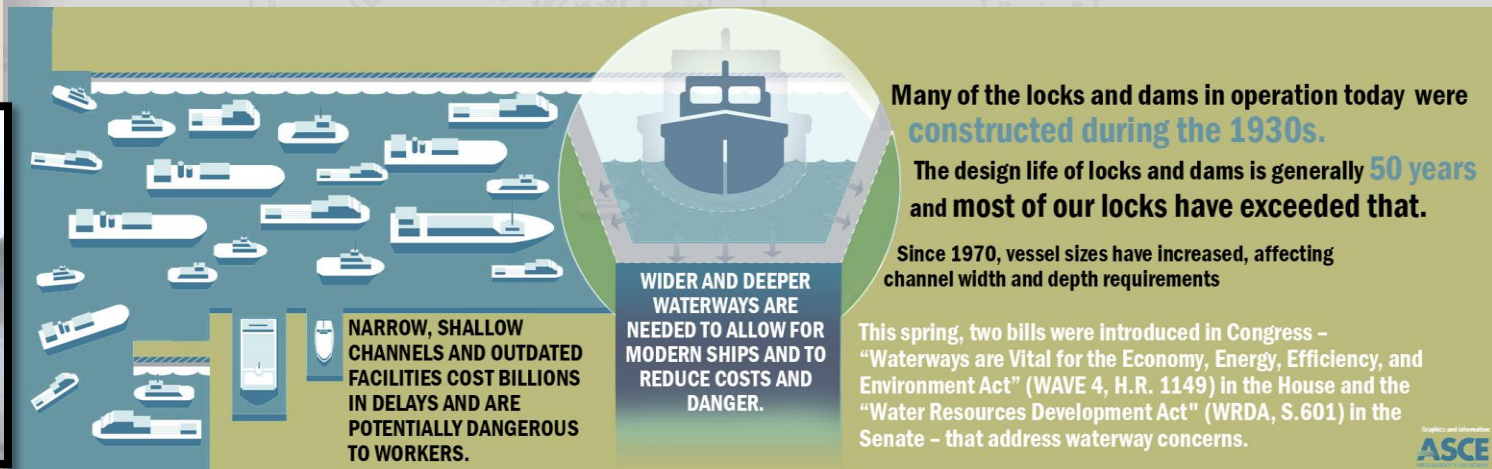
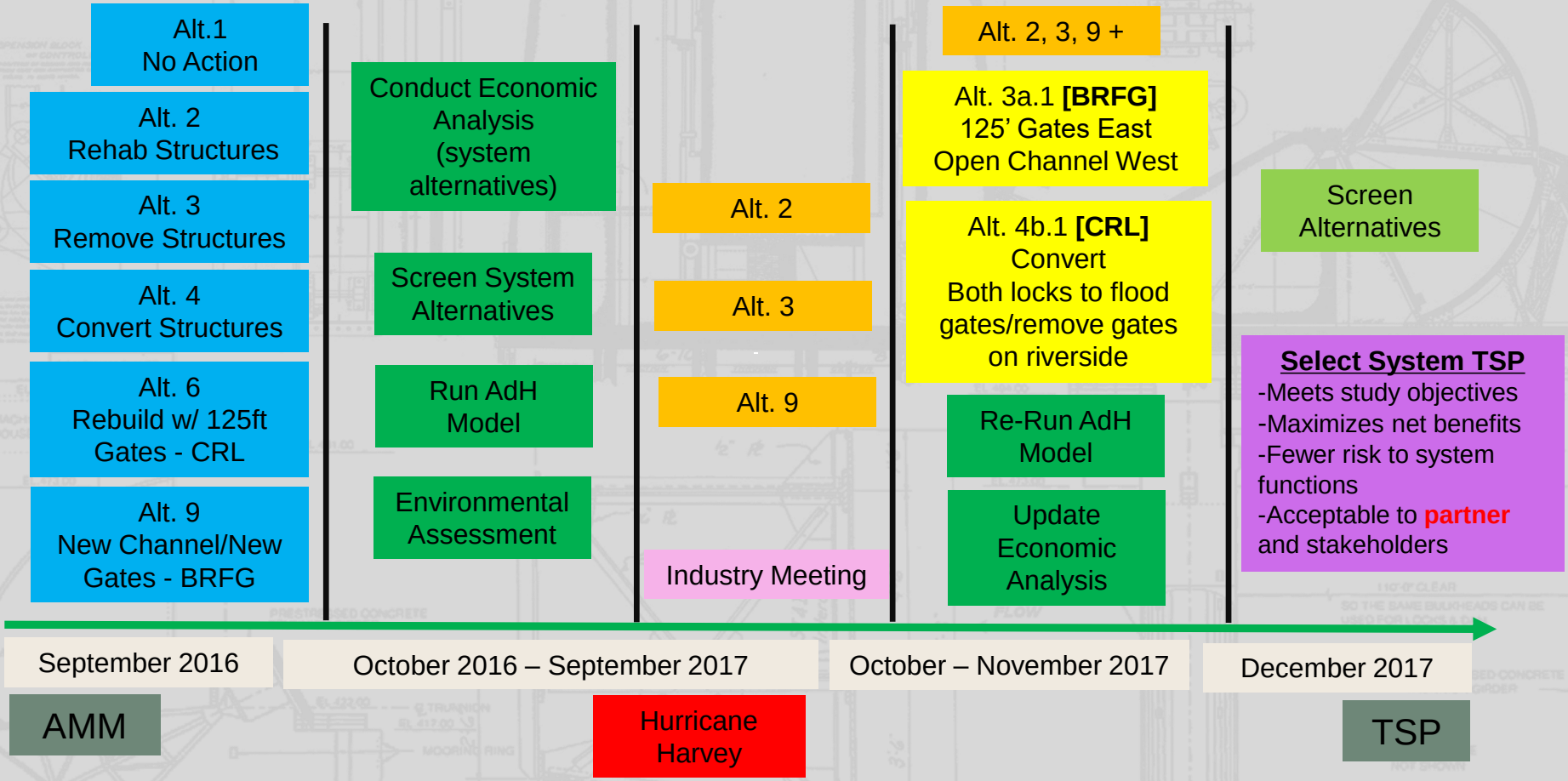
STUDY PROBLEMS

- Modern barges/ships have to navigate through narrow 75ft. width alignments and outdated/narrow floodgates and locks that lead to frequent accidents that damage guidewalls and gates.
- Outdated lock/floodgate construction at sector gates leads to structural, electrical and mechanical maintenance issues.
- Shutdown of operations during high water periods and to repair strikes causes significant economic impacts to navigation industry.
- Any changes to sediment deposition into the GIWW will be assessed and included as additional O&M cost to the study.



EVALUATION PROCESS



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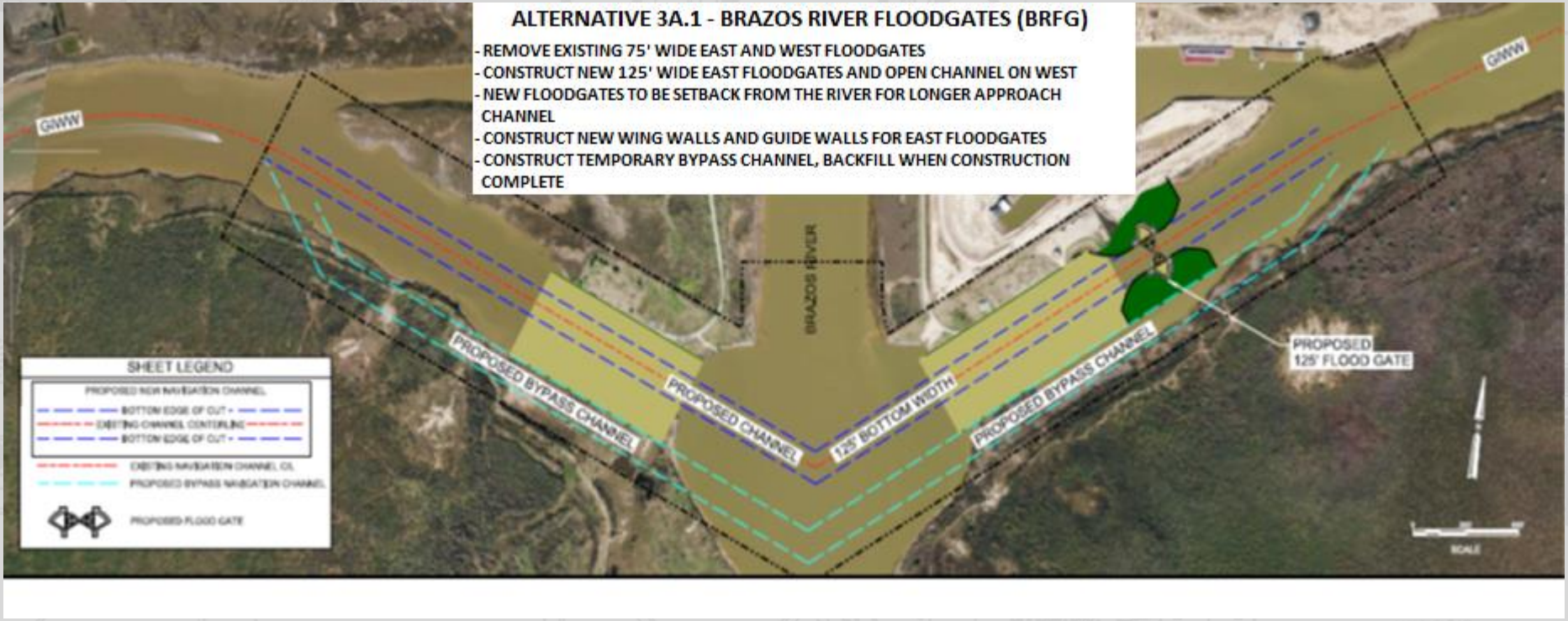
BRAZOS RIVER TSP ALTERNATIVE 3a.1

HYBRID Alternative – 125’ Gates/Open West, Adjust Channel Angle



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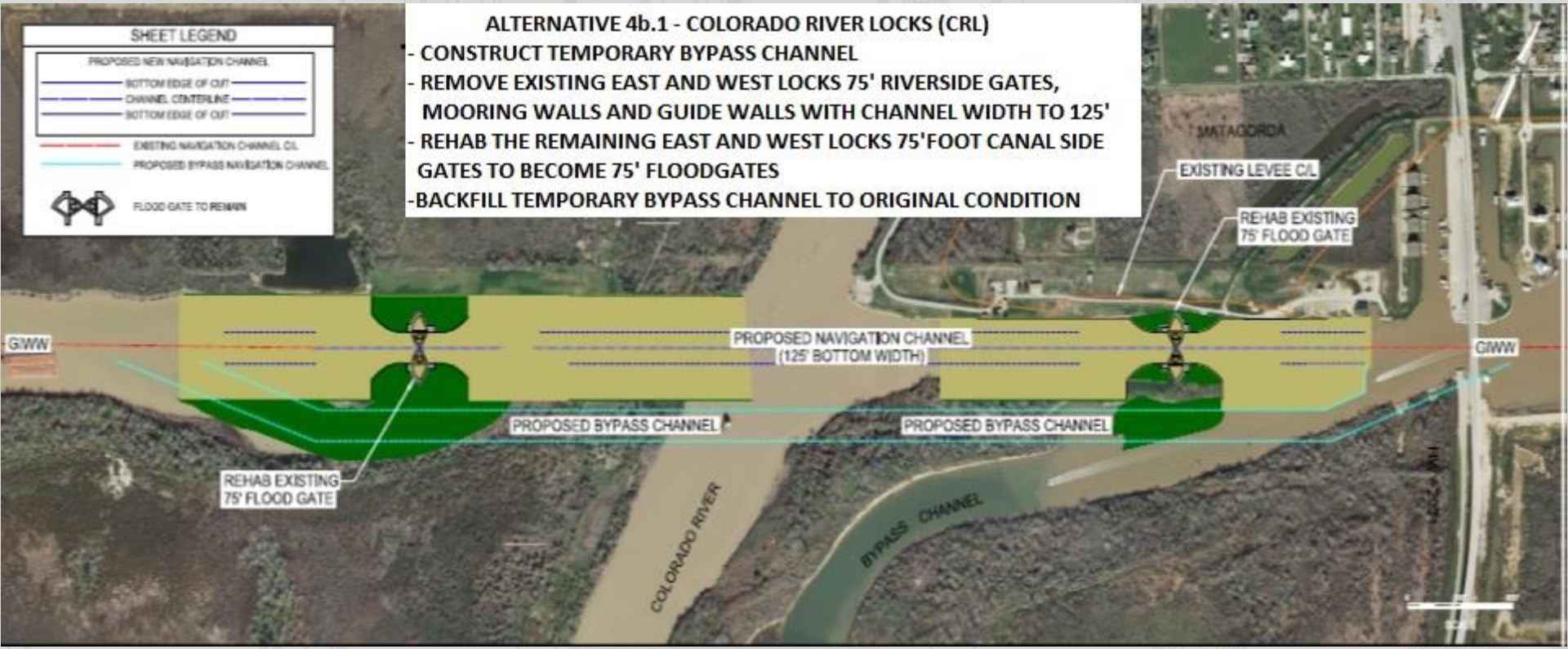
COLORADO RIVER TSP ALTERNATIVE 4b.1

Convert both locks to 75’ flood Riverside **flood**gates on both sides of crossing



NOTE: This drawing depicts the East and West Locks 75’ Rivergates as already removed.

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SIGNIFICANT COMMENTS: PUBLIC REVIEW (10)

- San Bernard River impacts (sedimentation, modeling, & local plans)
- Salinity changes from brackish/saline marsh to freshwater in San Bernard
- Temporary bypass channel sediment input
- Navigation impacts at Freeport and Deepwater Vessels
- Navigation safety and safety performance after construction
- Gate width differences (125 feet at BRFG and 75 feet at CRL)
- Increased dredging time/costs
- Flood impacts to community with gate removal

POST ADM TASKS

- Engineering
  - BRFG - Analysis of Industry Preferred Adjustment to TSP at Brazos. This would include analysis of flow, sedimentation and salinity. [shave edges on upper part to expand approach on both sides of the river]
  - BRFG - Investigation of elimination of temporary bypass channel during construction by shifting new gate to the South of the existing channel
  - BRFG - Feasibility level design of 125’ gate structure at Brazos
  - BRFG - Examine forgoing rehab benefits for abandoning the west gate structure and cost savings from leaving it in place
  - CRL- Analysis of Industry/Operations Preferred Adjustment to TSP.
  - CRL - Analysis of flow, sedimentation and salinity of 125’ width floodgates
  - Further development of civil design layout at both Brazos and Colorado including replacement of ancillary buildings
  - Refinement of cost estimate based on feasibility design

- Environmental Assessment
  - The current NEPA assessment will need to be edited to reflect the larger footprint of the project area and the changes to the hydraulics due to the wider gates at CRL

- Economic Analysis
  - Additional model runs with regional forecast
  - Update CRL benefit-cost comparison assuming 125’ gates

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BRFG & CRL STUDY MILESTONES

Activity		1a $3M/3 YRs	1b $3.1M/ 3YR, 2MO
		Option 1a: 3x3x3 Baseline study focus with limited modeling	Option 1b - Existing with limited additional Cost and Time
Study Start		JUL 2016	JUL 2016
Alternative Evaluation and Analysis	Alternatives Milestone	SEP 2016	SEP 2016
Exemption	Exemption Approval by Senior Leaders	N/A	FEB 2017
Alternative Evaluation and Analysis	Tentatively Selected Plan (TSP) Milestone	OCT 2017	OCT 2017
Feasibility Level Analysis	Agency Decision Milestone	JUL 2018	JUL 2018
	Feasibility Report Complete *(Post DQC & ATR)*	FEB 2019	MAR 2019
	Senior Leader Panel	APR 2019	MAY 2019
	S&A Review	APR-MAY 2019	MAY-JUN 2019
	Chief's Report	JUL 2019	SEPT 2019

RECOMMENDATION

- Complete Feasibility Level Design of TSP (incorporating review feedback)
  - Brazos – feasibility design of 125’ floodgate structures; optimization with input from reviews; reconsideration of temporary bypass channel
  - Colorado River Locks – conversion of locks to floodgates; evaluation of 125’ floodgate versus 75’ presented in draft report
- Additional economic modeling to updates
- Update NEPA (Environmental) as warranted by feasibility design refinements
- Conduct ShipSim during PED

QUESTIONS