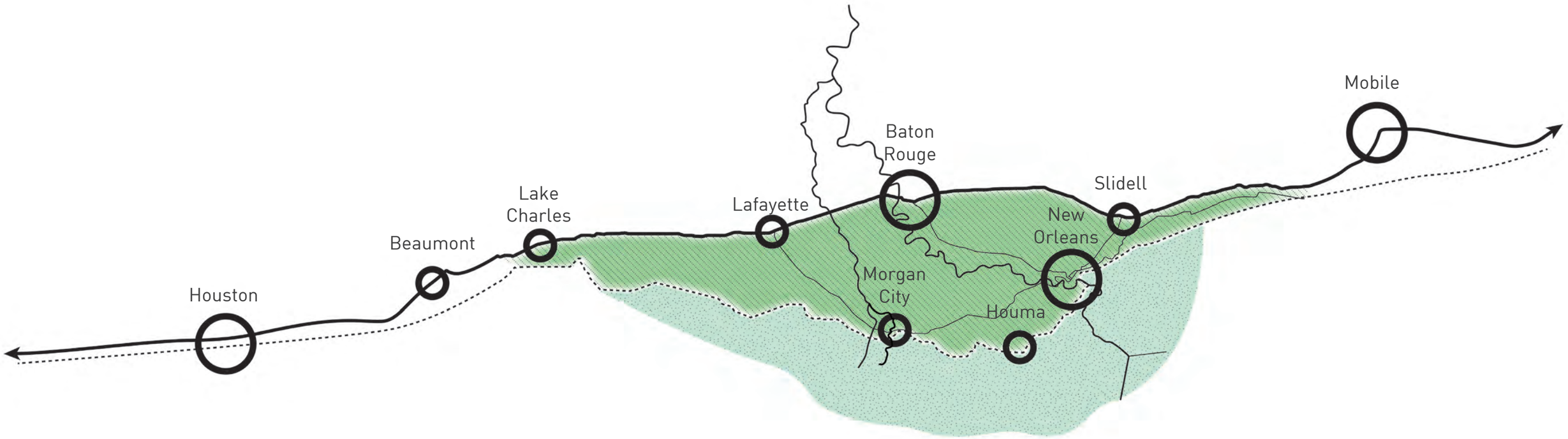
The Giving Delta

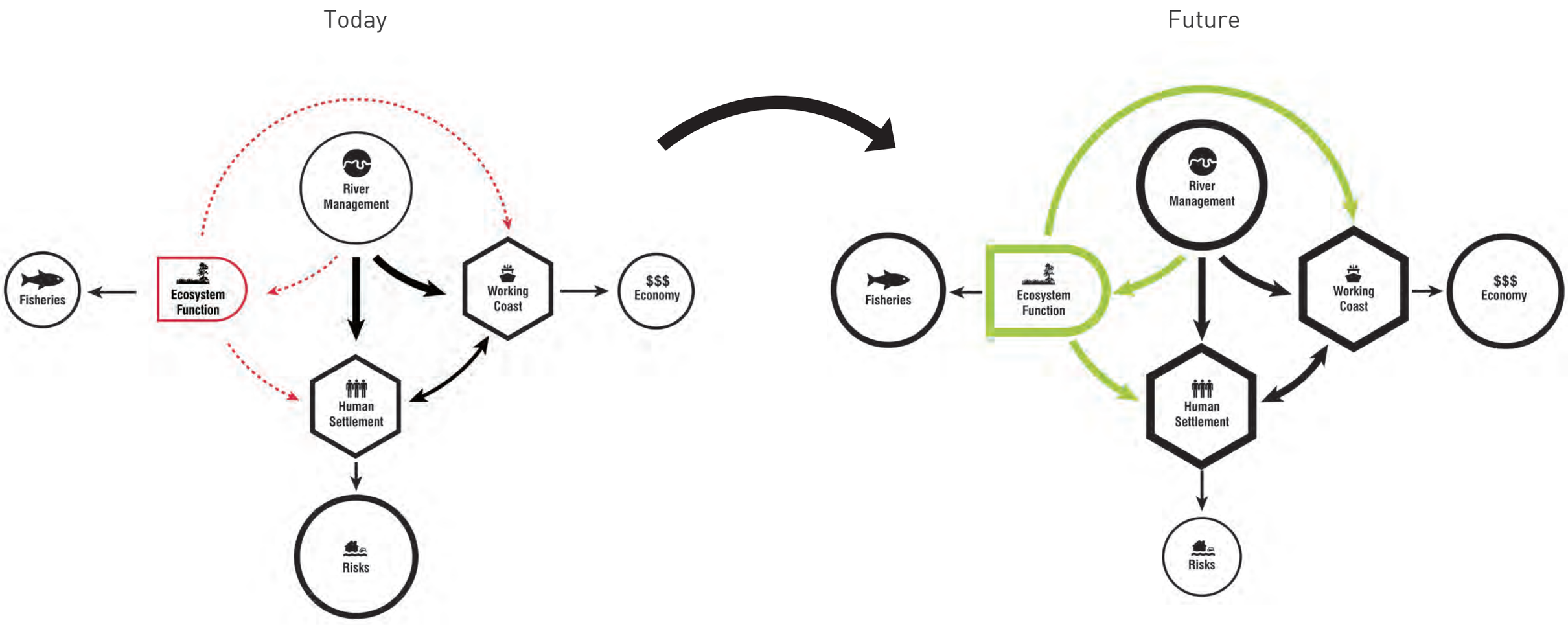
Changing Course
National Conference On Ecosystem Restoration
Coral Springs
Thursday 21st April 2016

Moffatt & Nichol | West 8 | LSU CSS
Deltares | RAND | Ioannis Georgiou | Headland & Associates



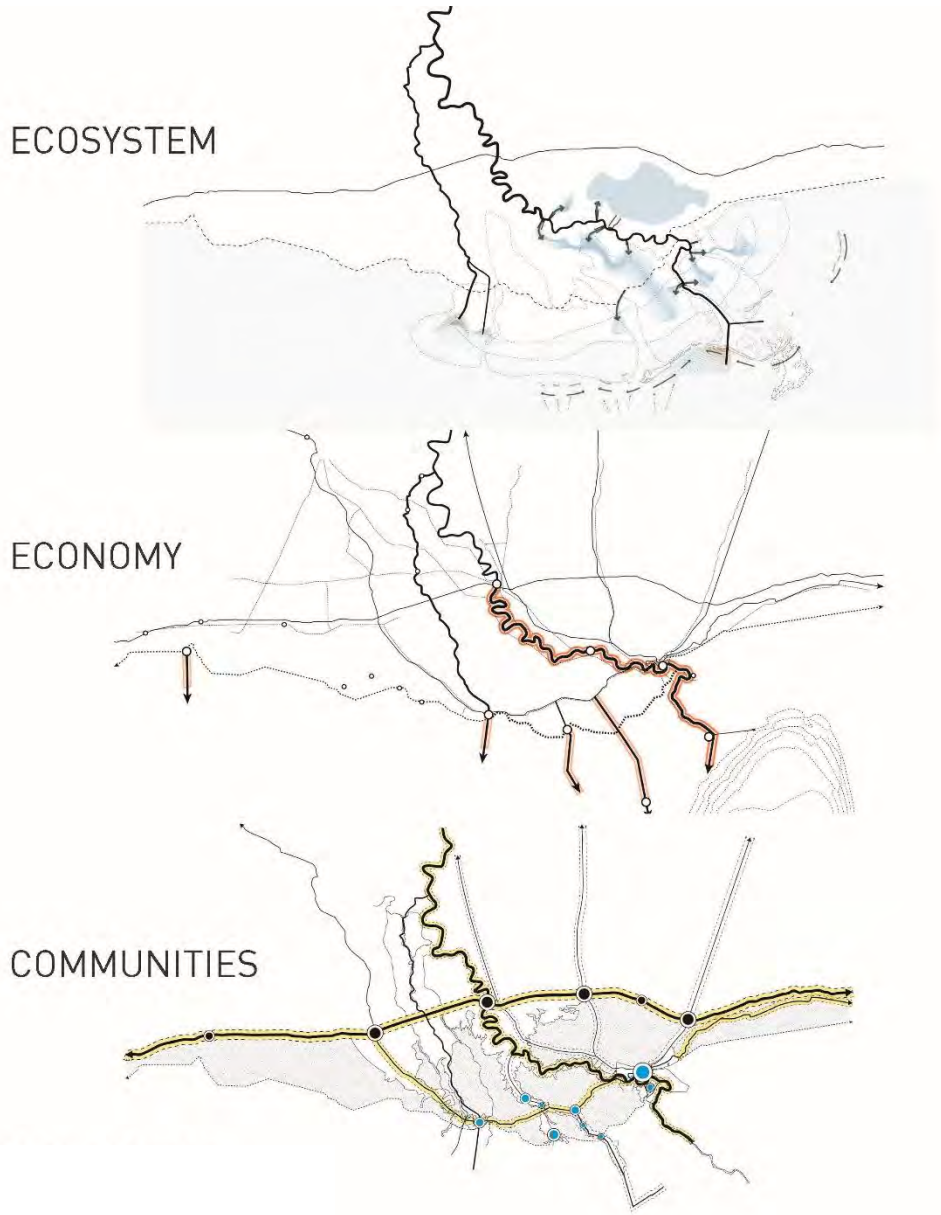
The dynamic deltaic coast is Louisiana's greatest opportunity.

While other cities, economies, and communities around the globe lie exposed to rising seas on fixed coastal edges, Louisiana will leverage the Mississippi River to build and maintain a robust wetland zone. Using the power of the Mississippi River, Louisiana's ecosystem, economy, communities, and culture will adapt to increasing uncertainty.

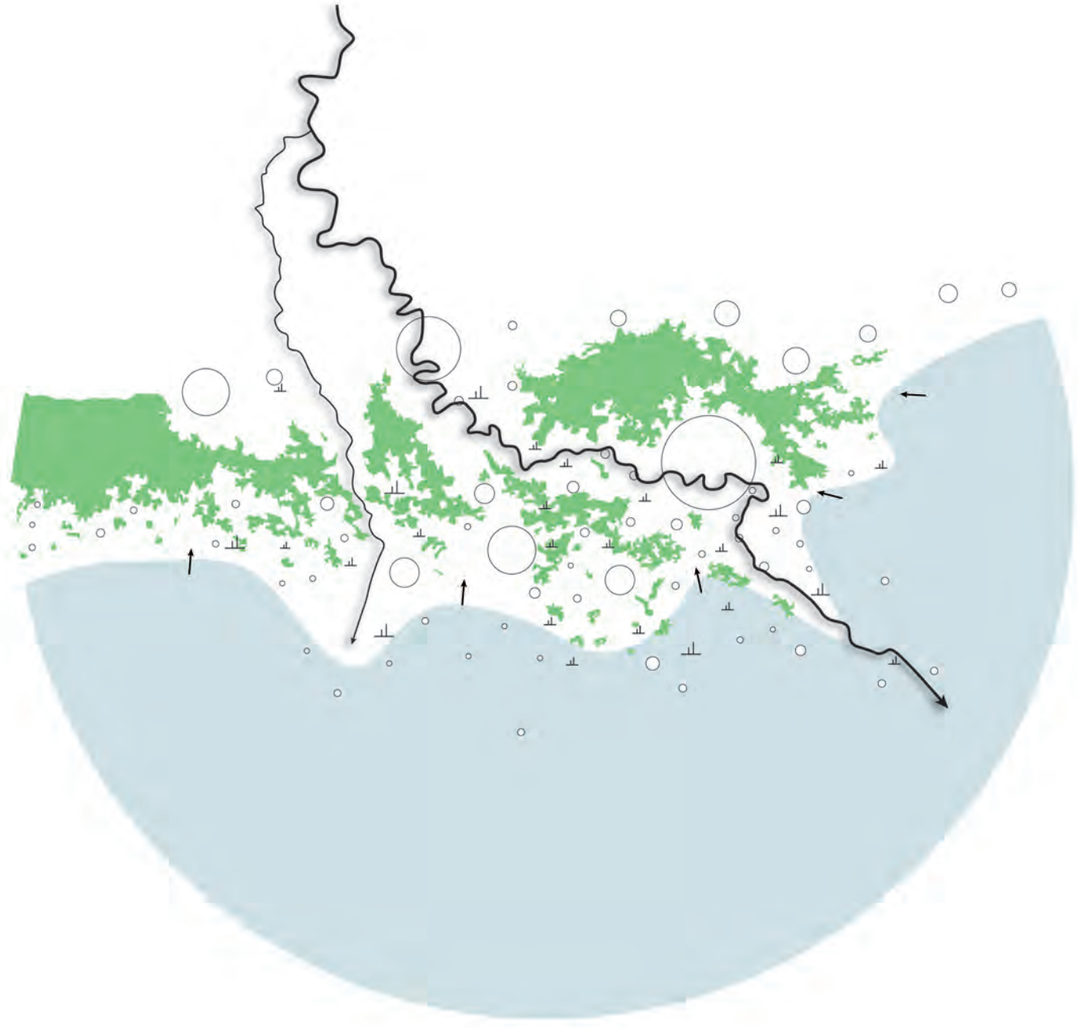


systems approach

empower the river



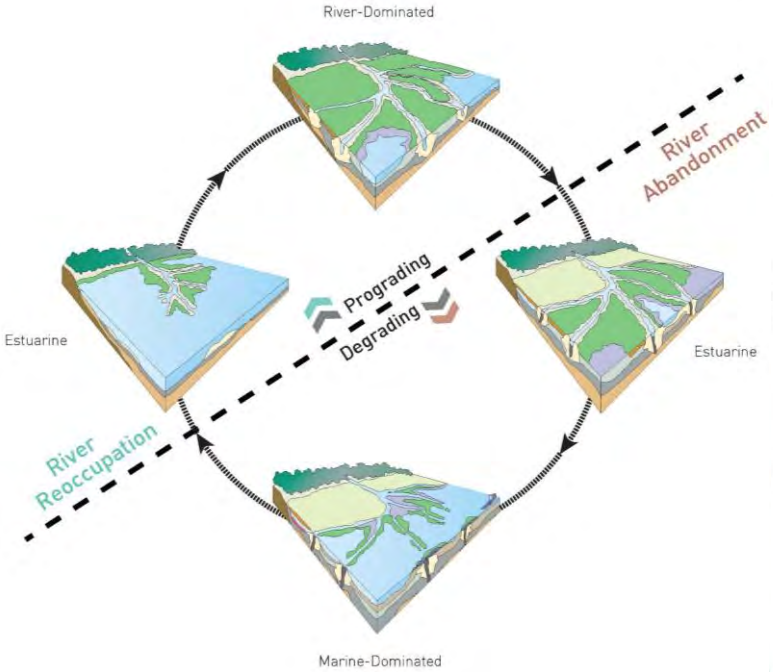
Achieving the Multi-Purpose Functions of the Giving Delta

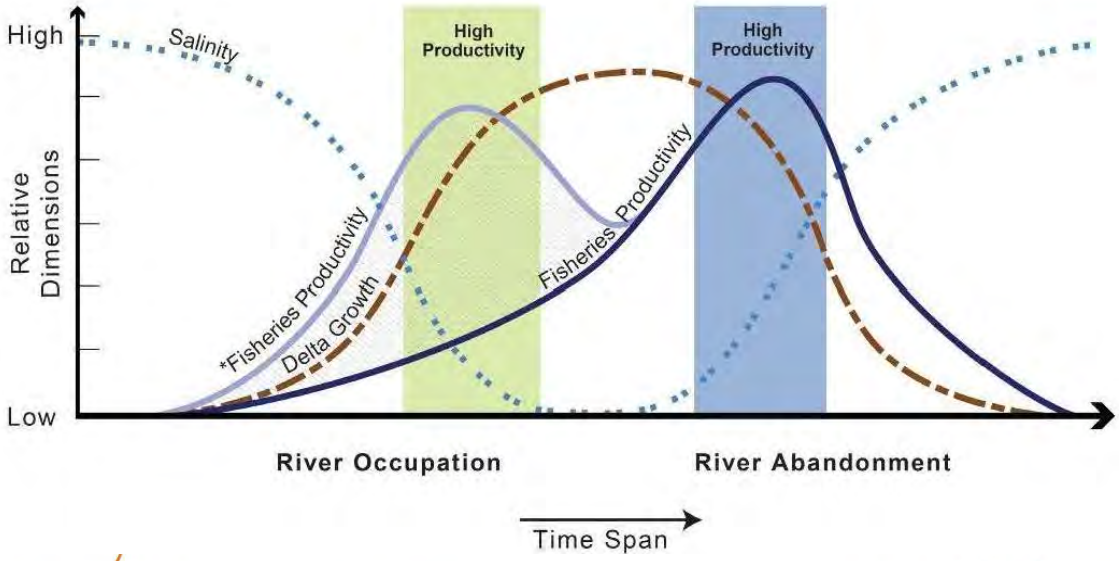


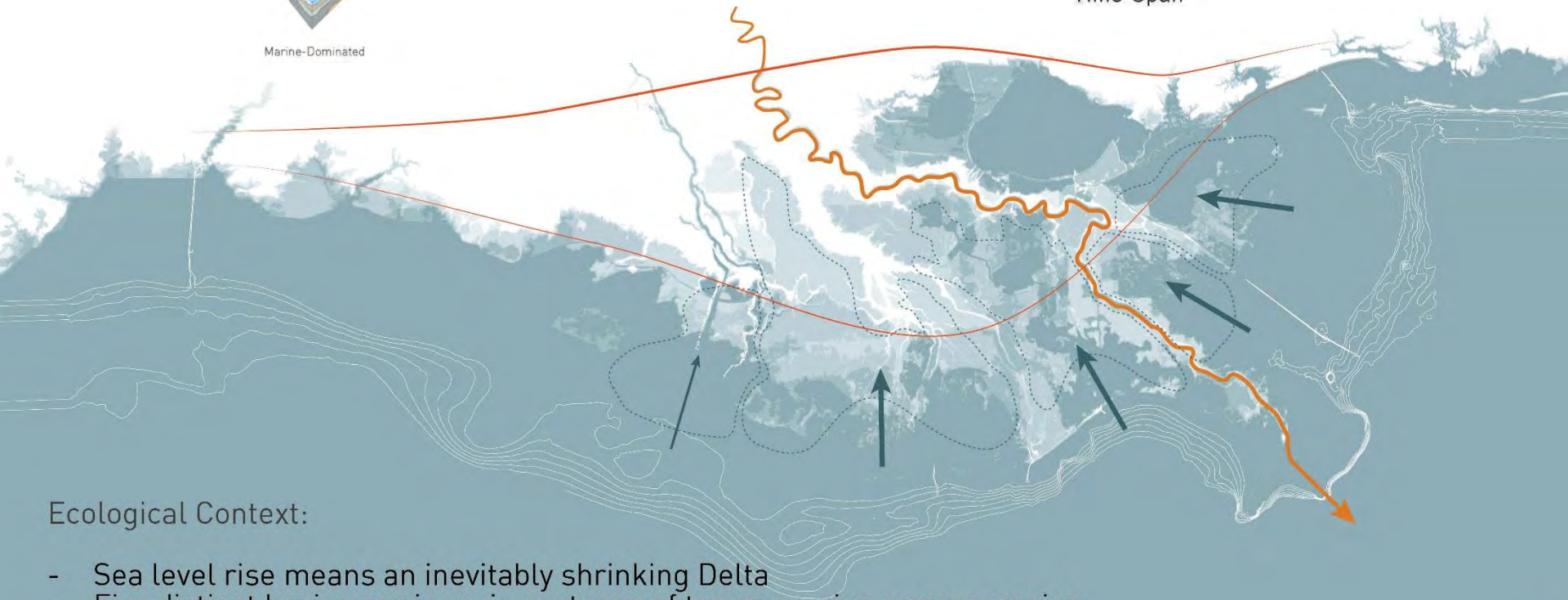
2015: Dispersed, Fragmented, Uncertain

Future: Integrated, Focused, Defined

embrace change

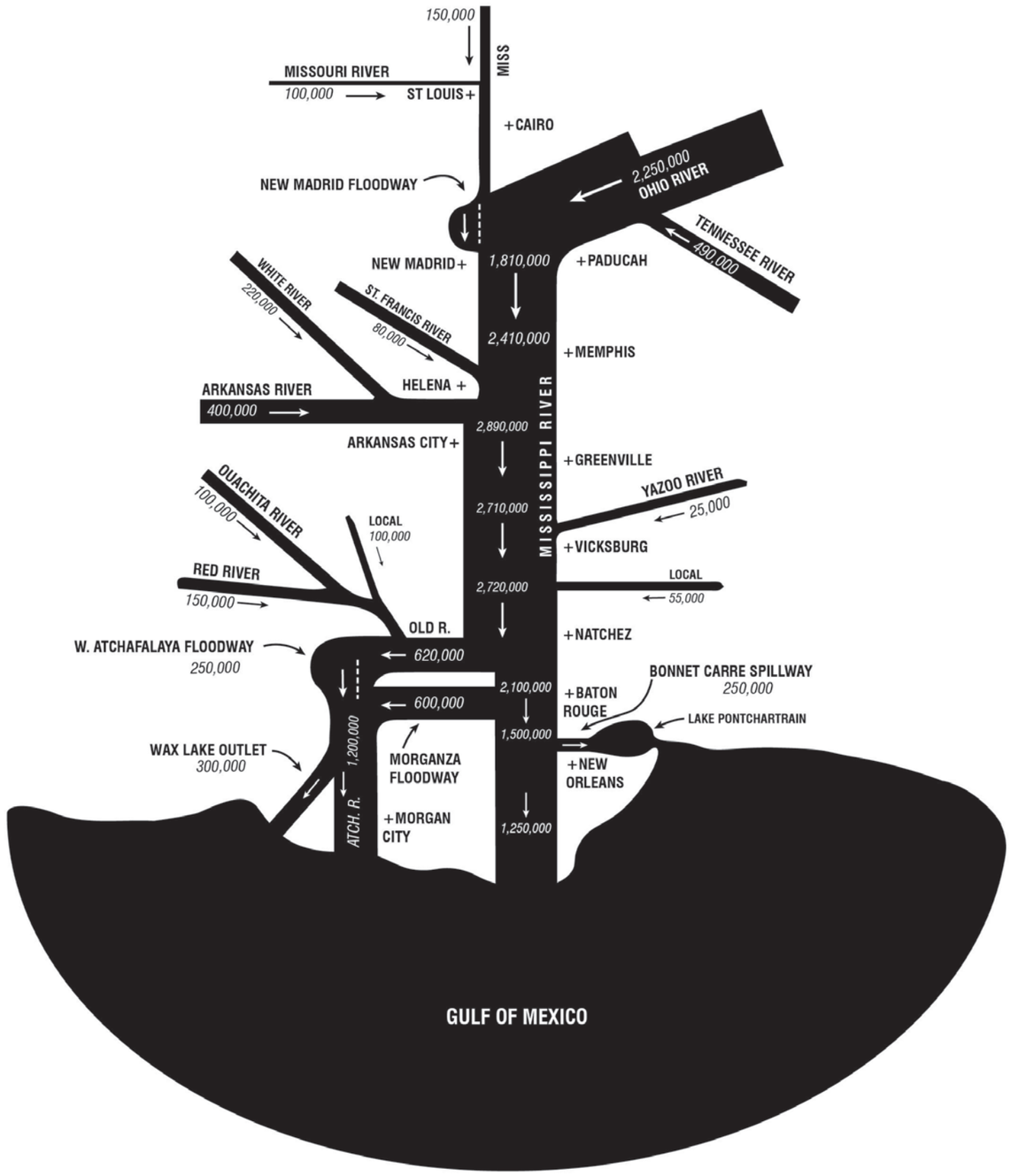




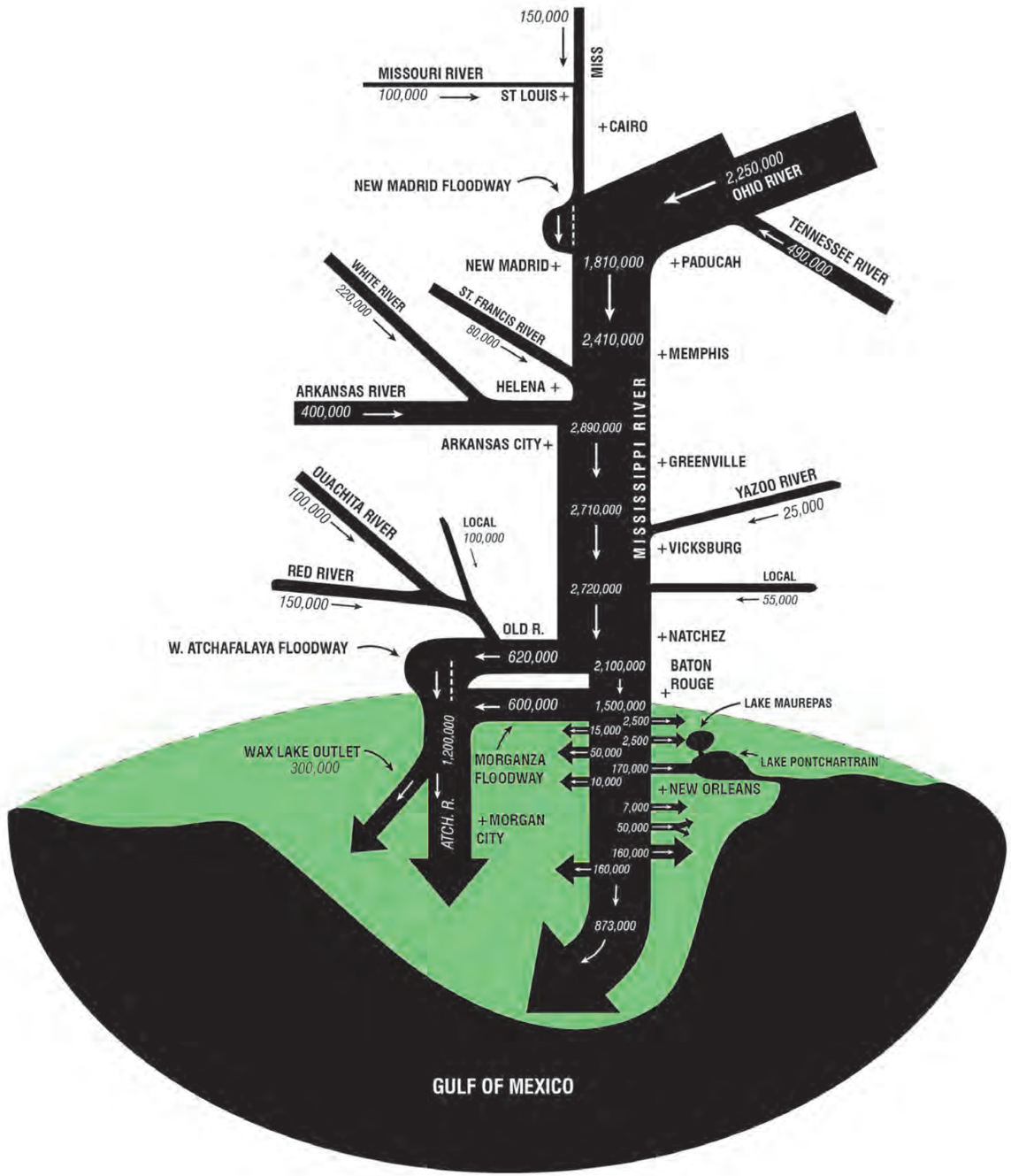


Ecological Context:

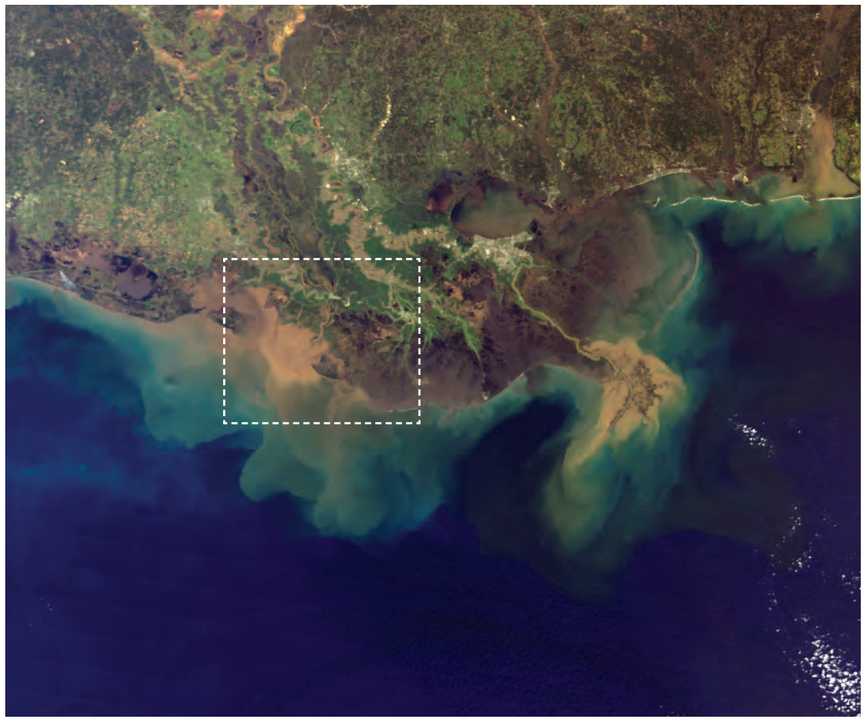
- Sea level rise means an inevitably shrinking Delta
- Five distinct basins are in various stages of transgression or progression

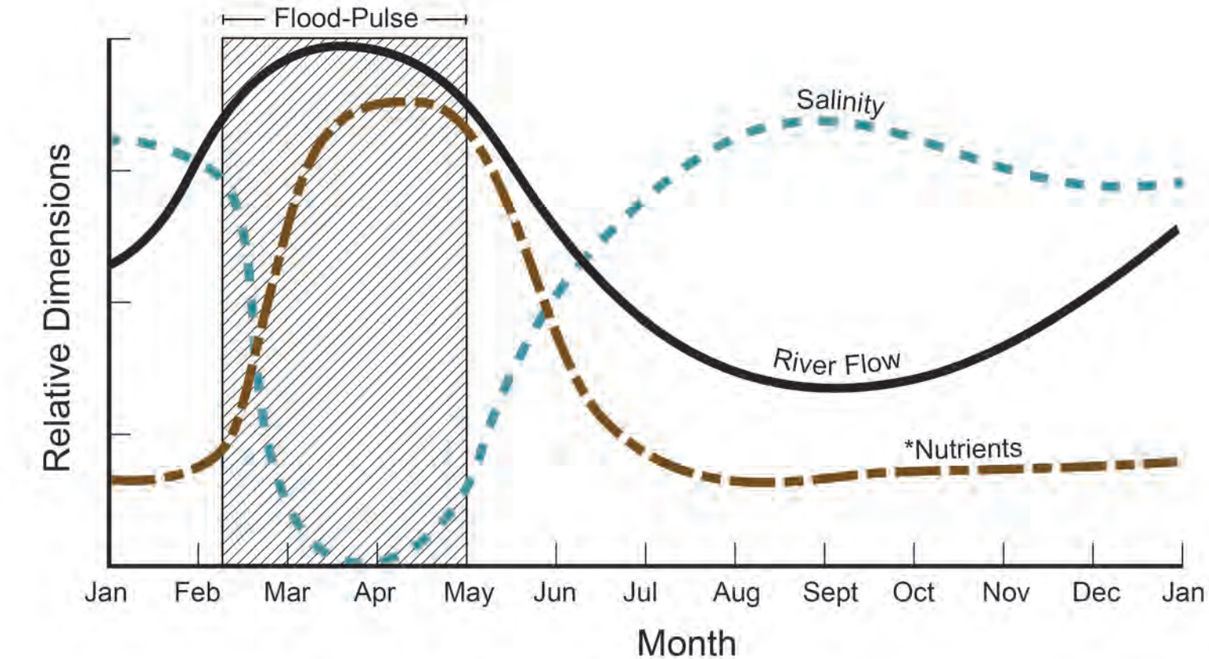


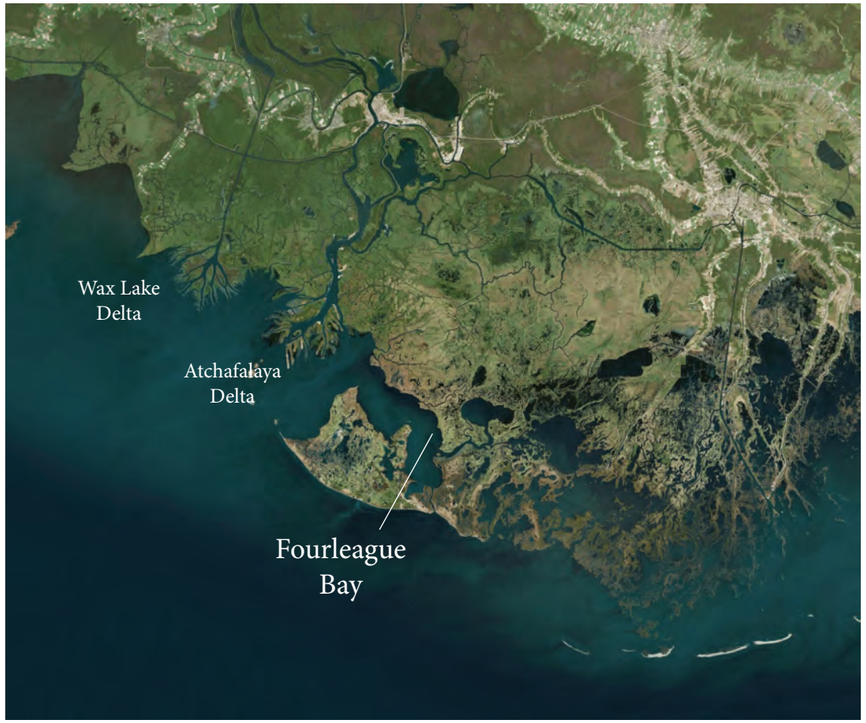
Army Corps of Engineers 1958 Project Design Flood

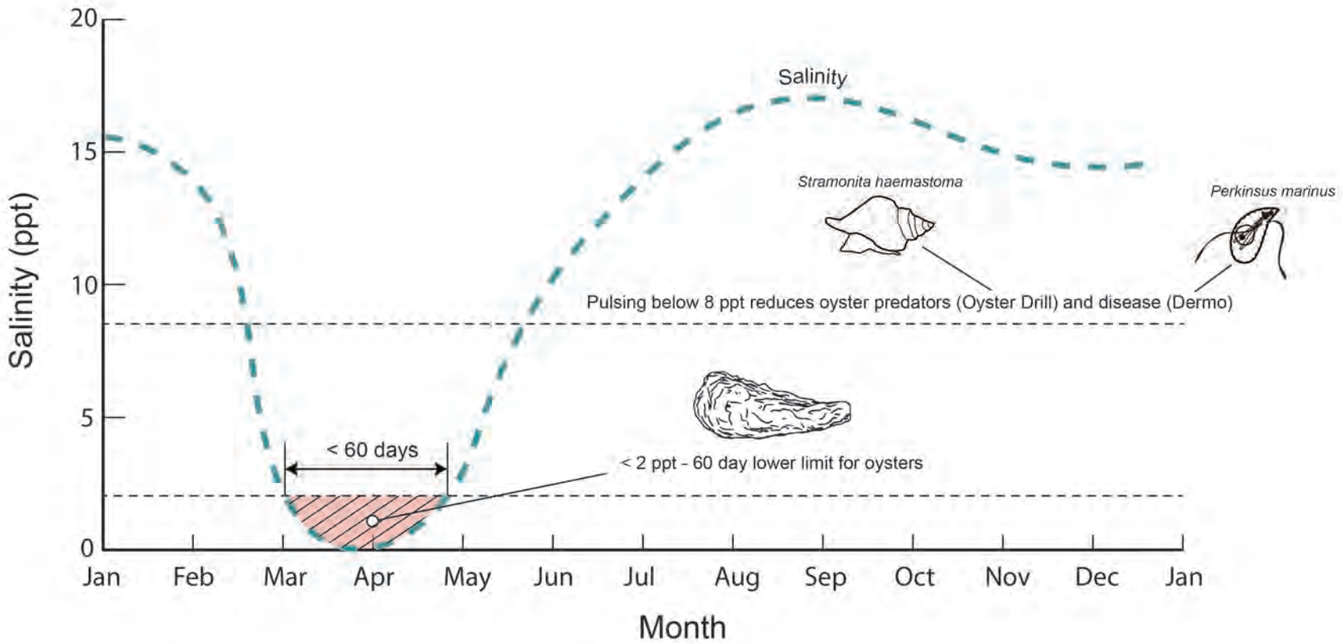


The Giving Delta Framework



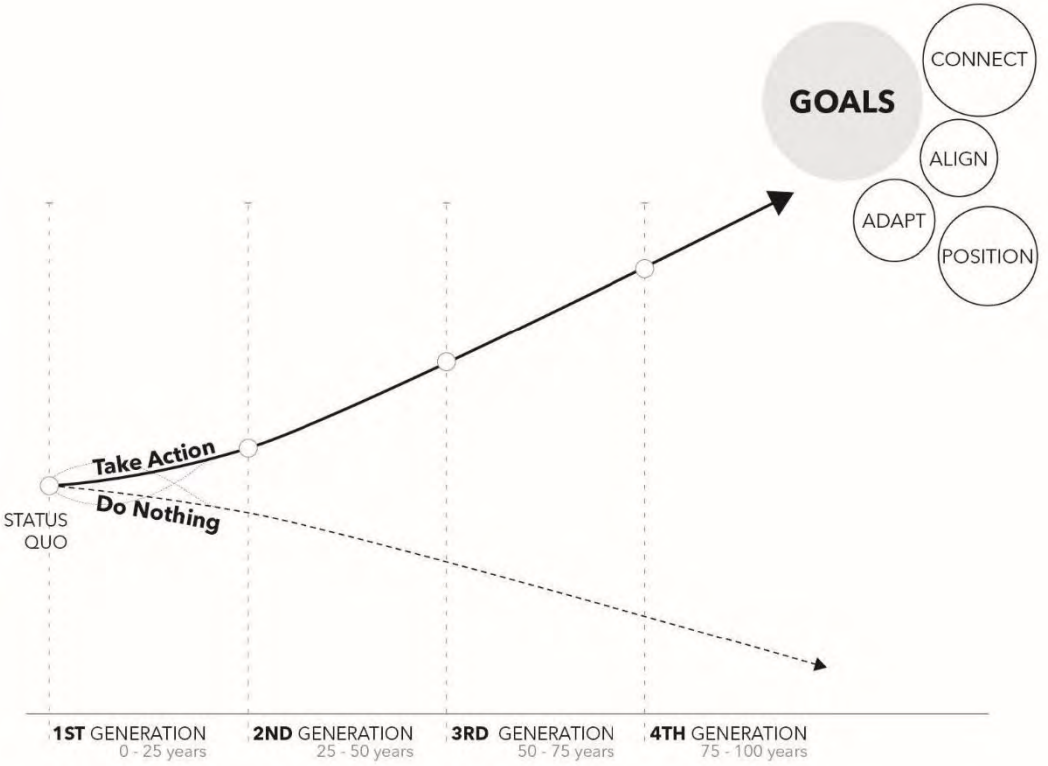






Functional flood-pulse ecosystem of Atchafalaya River basin

100 year, 4 Generation Timeframe



Four Generations

- Individuals do not think in 100-year increments
- Develop an actionable strategy from small business to global commerce

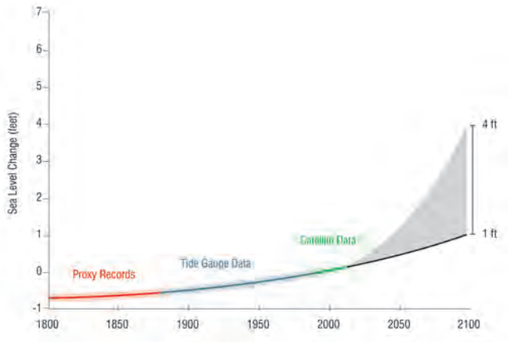
Coastal Forest

Freshwater Marsh

Brackish Marsh Zone

Salt Marsh Zone

1st Generation - Connect: From Flood Control to Controlled Flood-Pulses

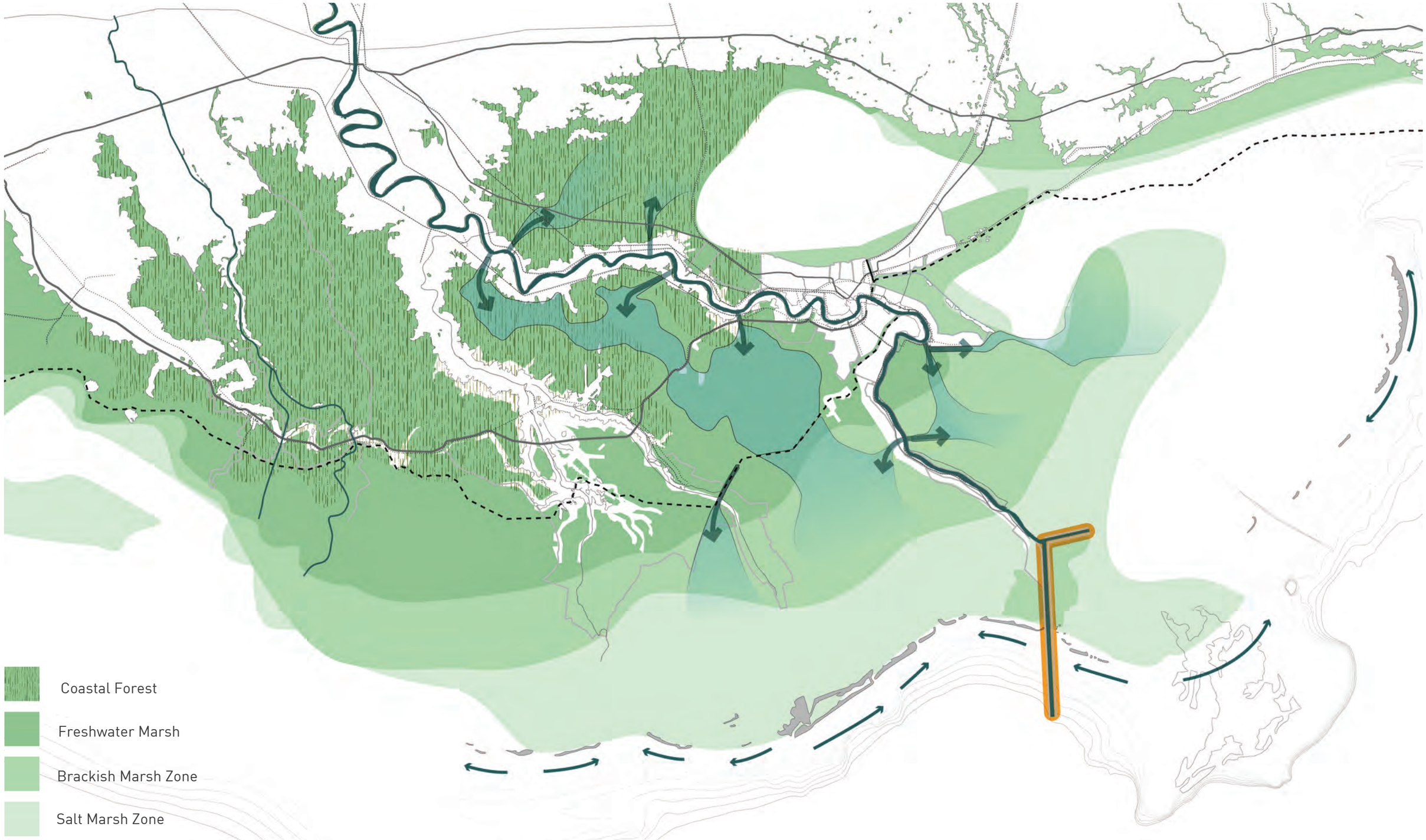


Past and Projected Changes in Global Sea Level

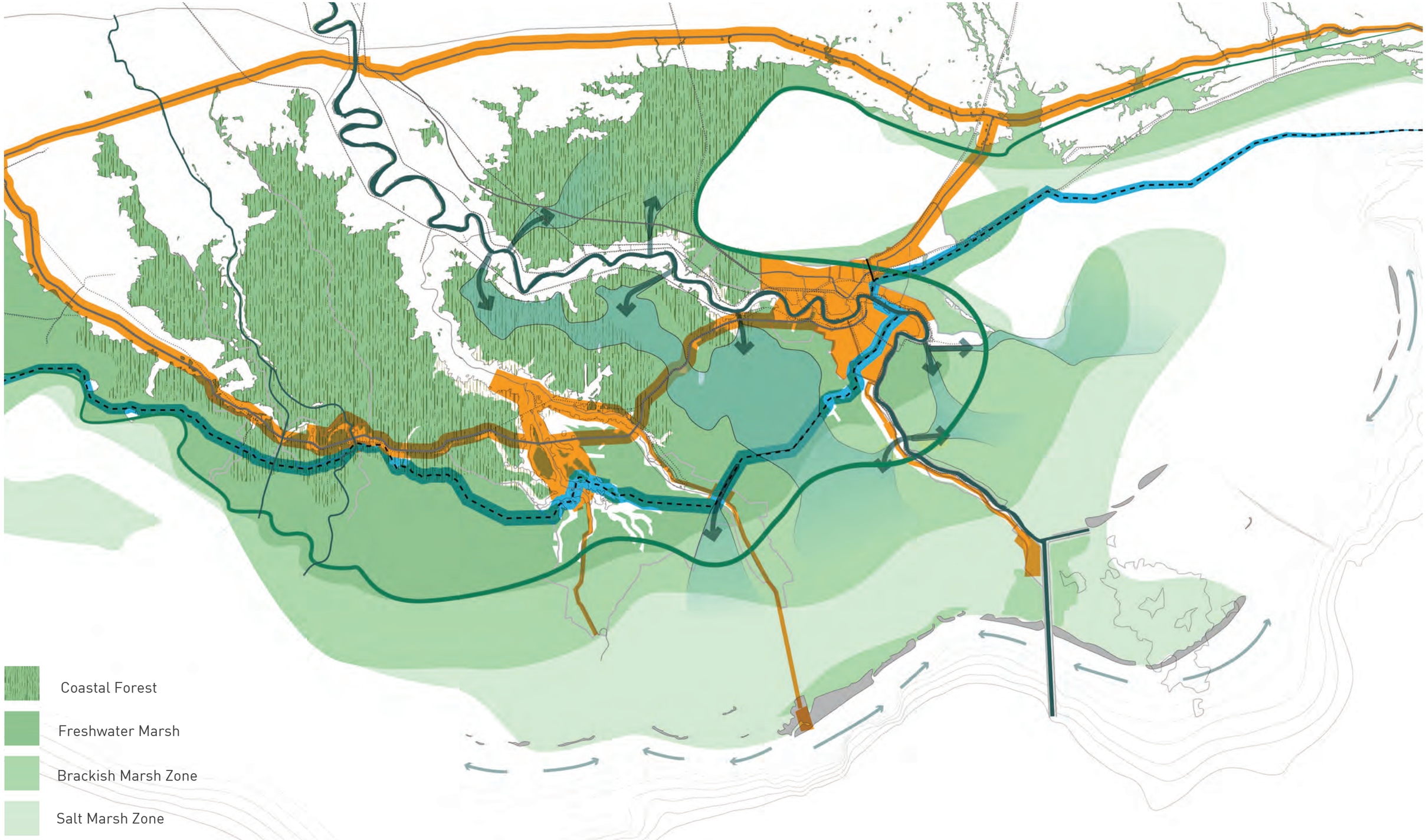
ANNUAL RATES OF SUBSIDENCE

- 24 mm +
- 22 mm
- 20 mm
- 18 mm
- 16 mm
- 14 mm
- 12 mm
- 10 mm
- 8 mm
- 6 mm
- 4 mm
- 2 mm

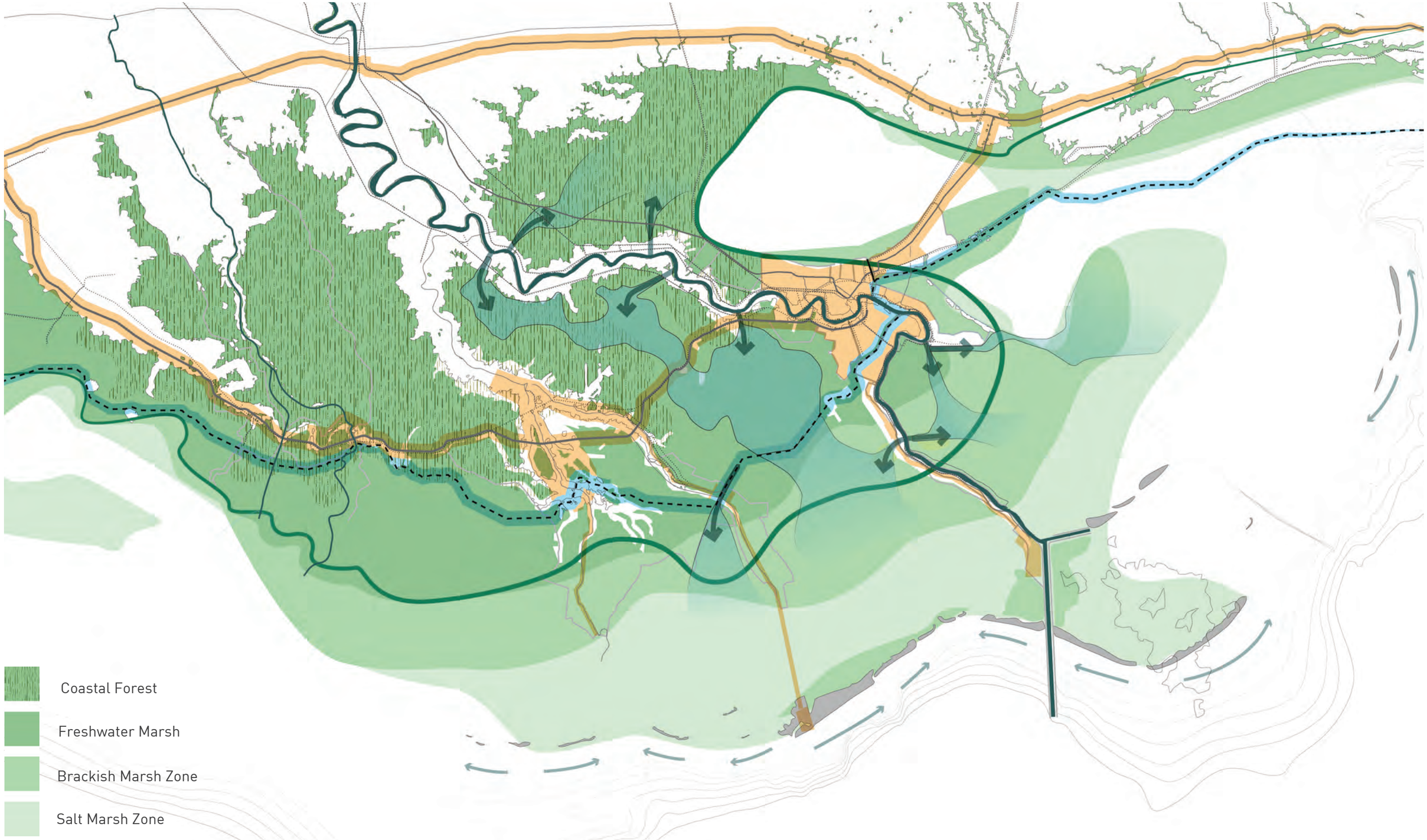
Geologic Risk



2nd Generation - Align: Transform the Lower River



3rd Generation - Adapt: Consolidation and Economic Dividends

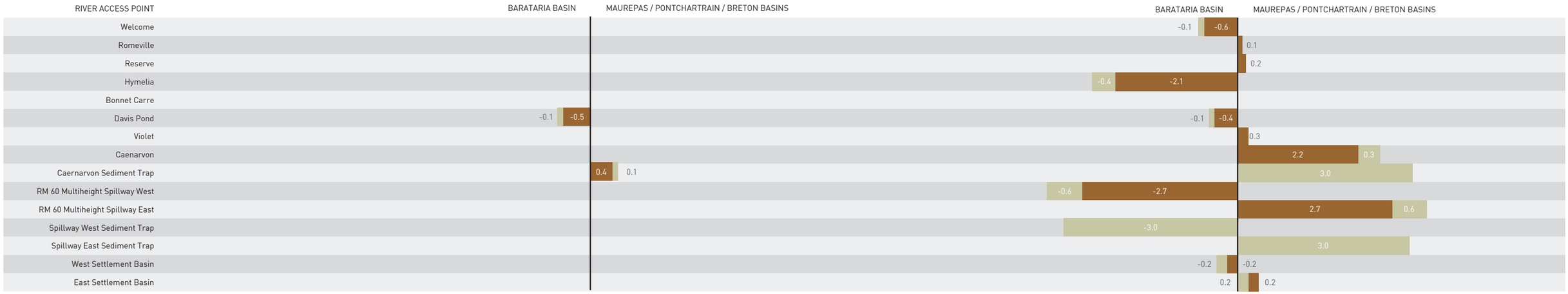


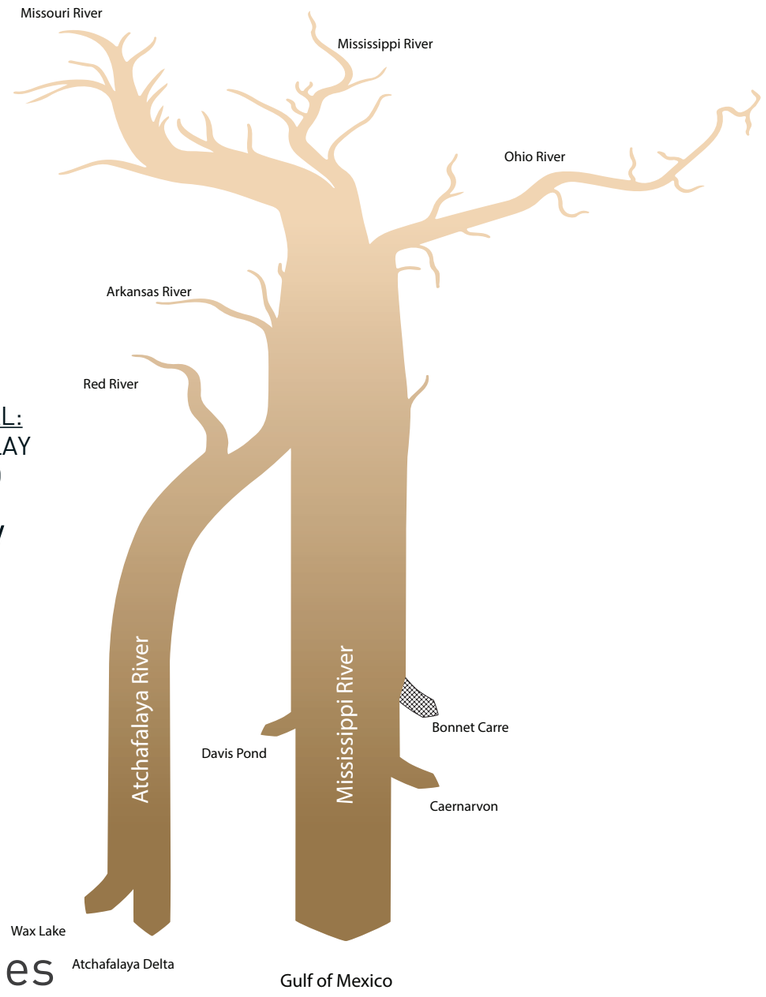
4th Generation - Position for Change

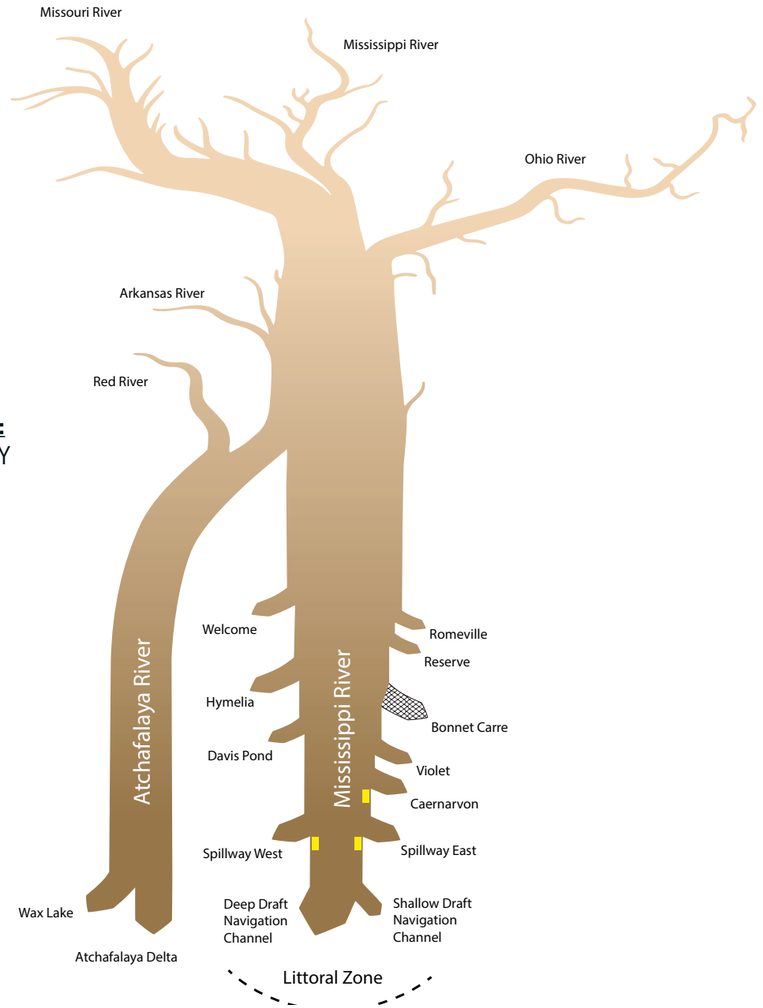
Generation 4 - Status quo

Connecting The River

1. Salinity And Residence Time
2. Controlled Floodways & GIWW
3. Multi-height Spillways
4. Sediment Traps with Dedicated Dredging
5. River Cut and Port Sulphur
6. Sand Engines







CURRENT TOTAL:
0.9 MCY SILT+CLAY
0.2 MCY SAND

700 ACRE-FT / YEAR

PROJECTED TOTAL:
11.7 MCY SILT+CLAY
11.6 MCY SAND

15,000 ACRE-FT / YEAR

Annual Sediment Volumes

Generation 4 - Position

Atchafalaya Basin

Terrebonne Basin

Barataria Basin

Breton Basin

Pontchartrain Basin

5 Distinct Places, Economies, and Environments

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