

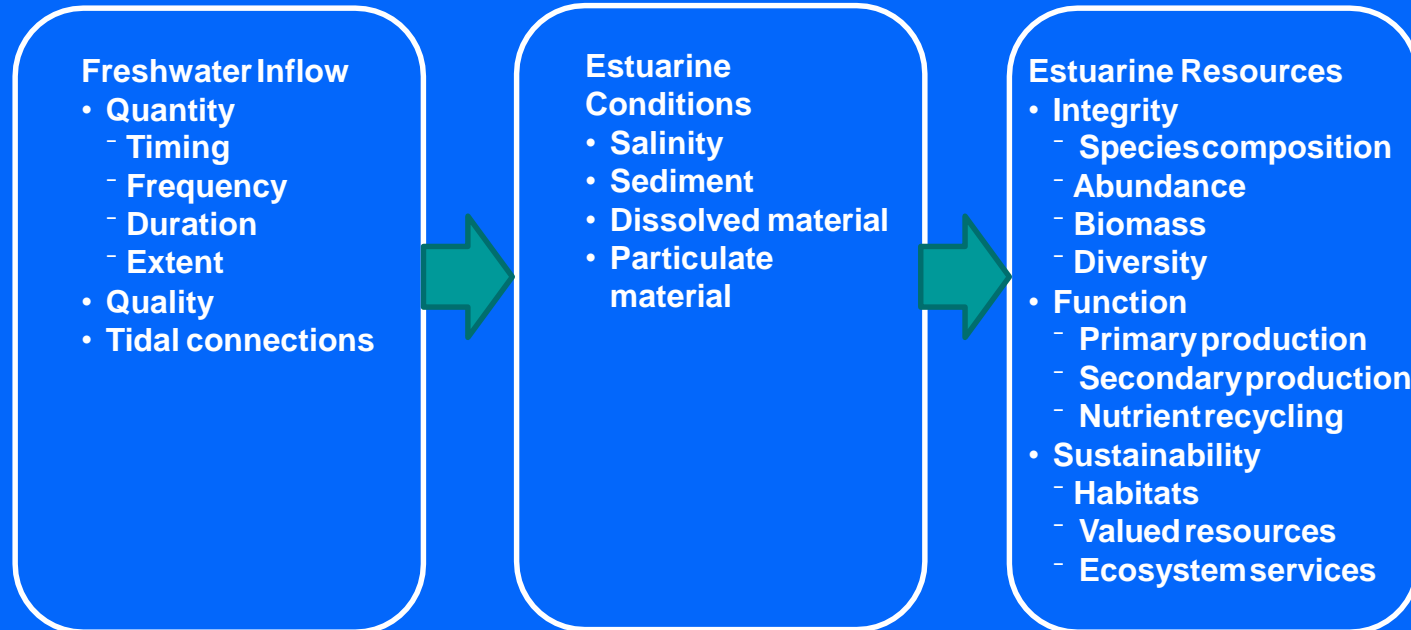
***Fresh Water Inflow (FWI) Management for the
San Antonio Bay – Guadalupe Estuary System:
Where Do We Go From Here?***

**James A. Dodson, San Antonio Bay Partnership
January 22, 2020**



The Future of San Antonio Bay
The San Antonio Bay Partnership is Planning for It!

FWIs Have Direct/Indirect Effects on Estuaries



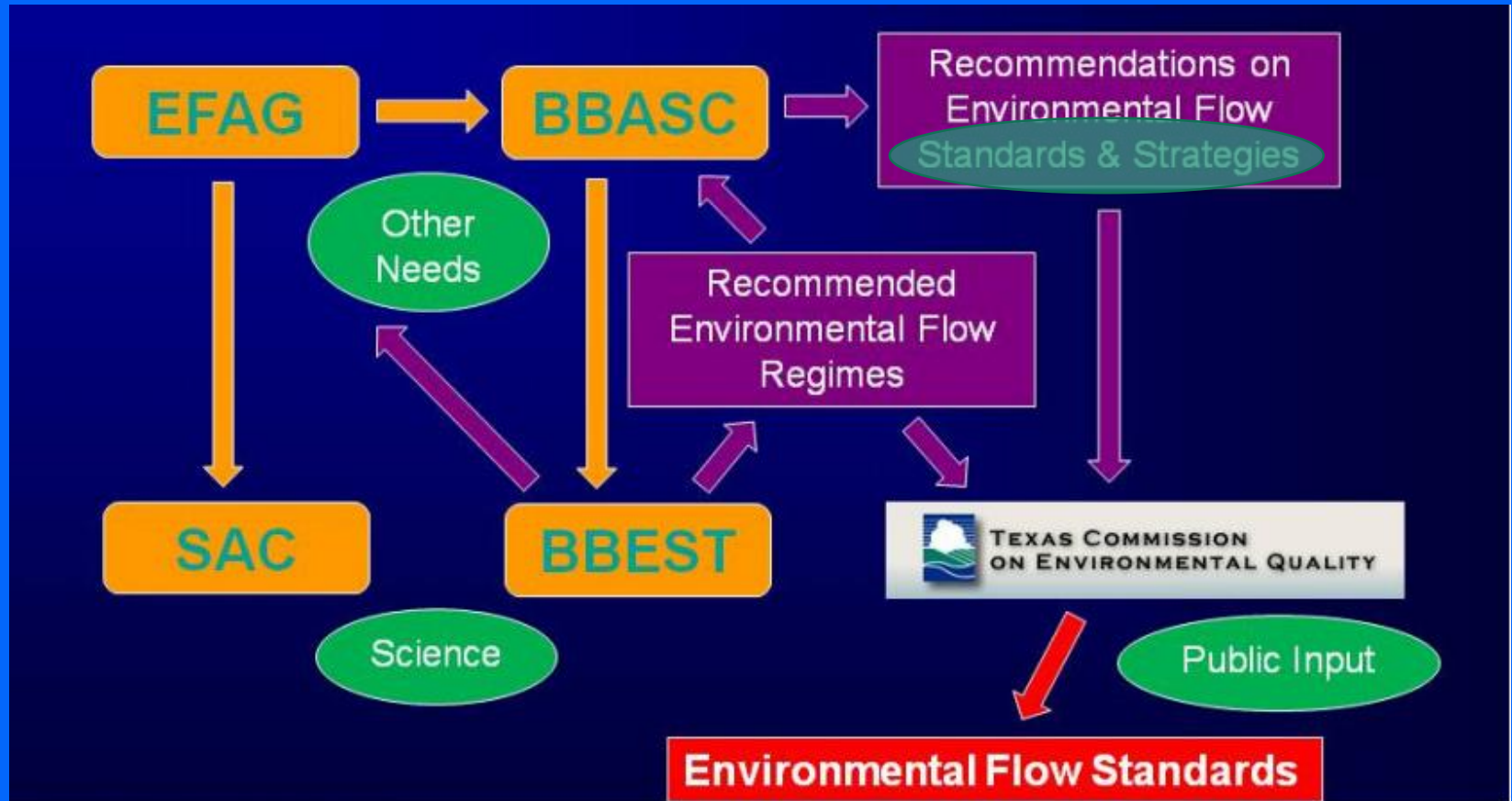
Evolution of the idea:

- **Alber, *Estuaries* (2002)**
- **Science Advisory Committee, *Methodologies for Establishing a Freshwater Inflow Regime* (2009)**
- **Palmer et al., *Hydrobiologia*, 667:49-67 (2011)**
- **Montagna et al., *Hydrological Change and Estuarine Dynamics* (2013)**

Texas Law Contains the Legal Basis for Providing Freshwater Inflows to Estuaries:

- HB 2 (1985): “maintain a sound ecological environment” in Texas bays and estuaries.
- HB 1629 (2001): “maintain the ecological health and productivity of the Matagorda Bay system.”
- SB 1639 (2003): “provide for the freshwater inflows necessary to maintain the viability of the state's bay and estuary systems.”
- SB 3 (2007): “adequate to support a sound ecological environment and to maintain the productivity, extent, and persistence of key aquatic habitats . . .”

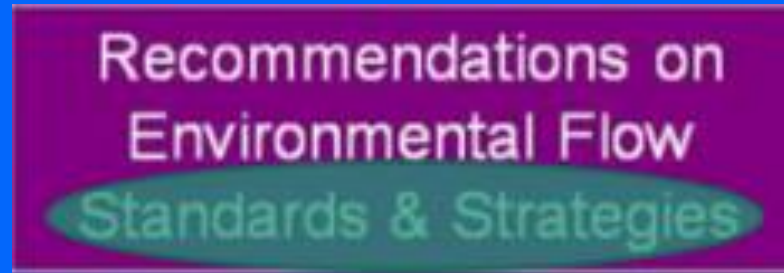
SB3* Environmental Flows Planning



https://www.tceq.texas.gov/assets/public/permitting/watersupply/water_rights/eflows/20110901gsabbasc_report.pdf

(*Senate Bill 3, 80th Texas Legislature, 2007)

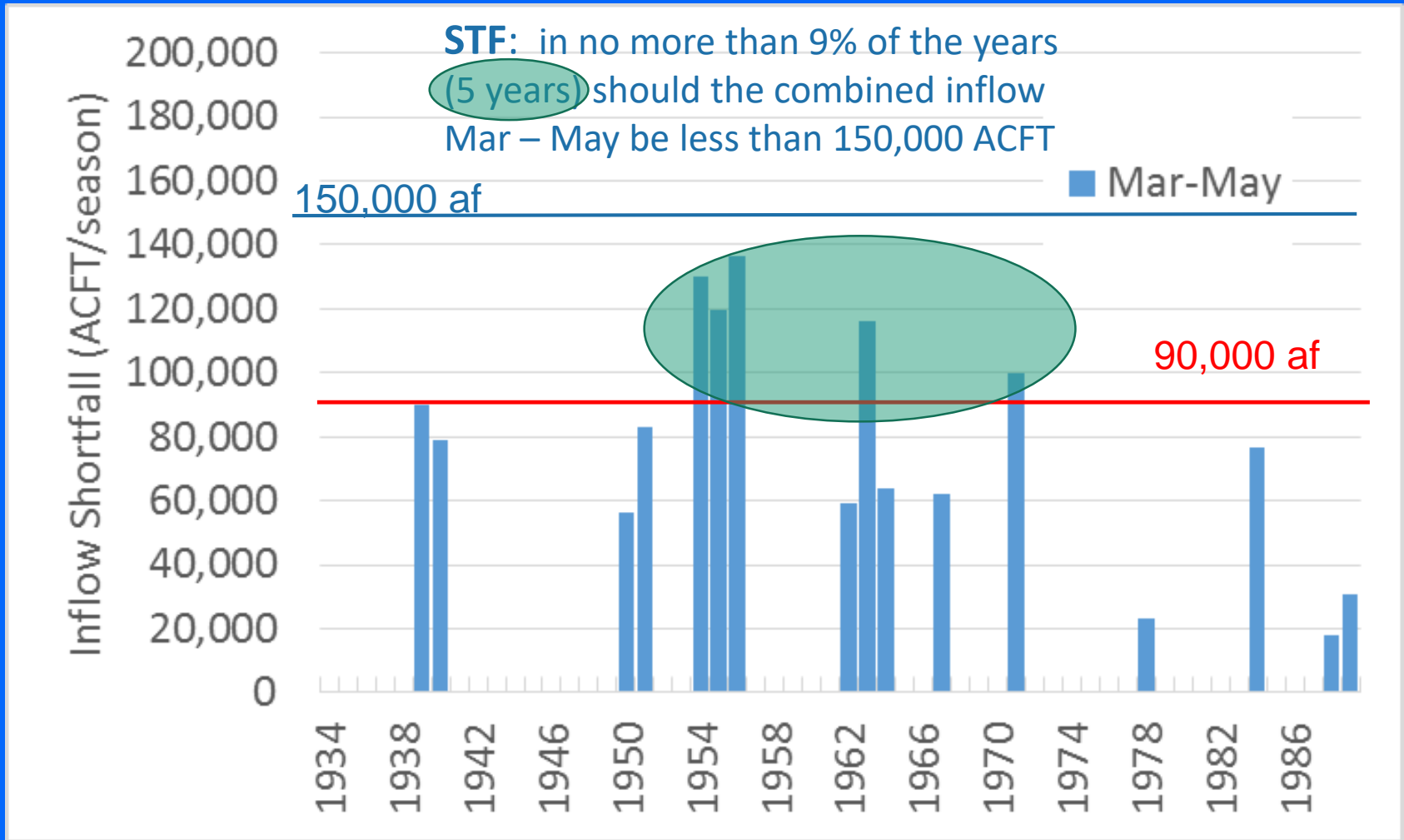
SB3 Environmental Flows Planning



Standards vs. Strategy Target Frequencies vs. Strategies:

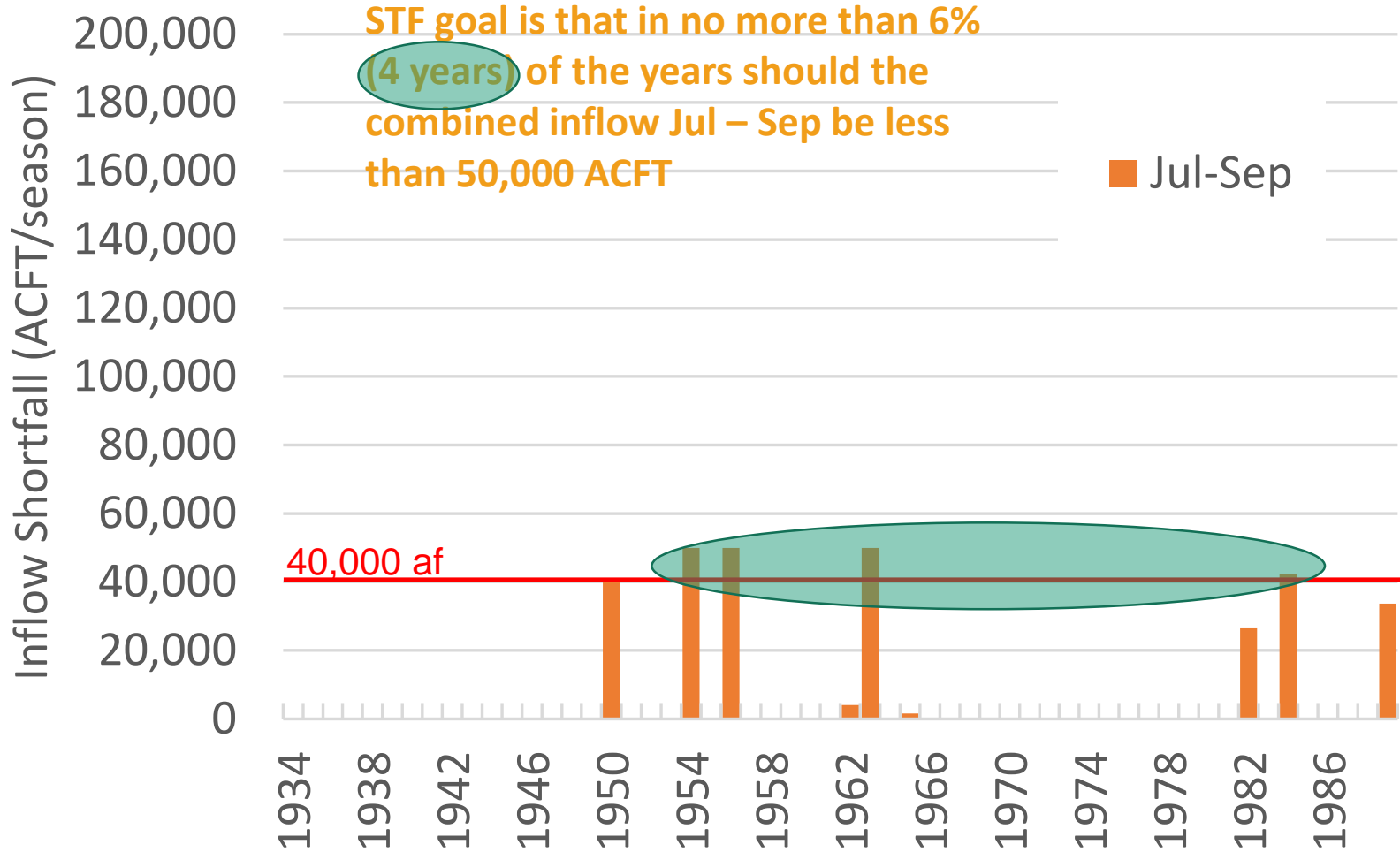
- **Standards:** Numerical values for e-flows, including FWIs, adopted by TCEQ through a rule-making process and applied as **legally binding conditions of new or amended water rights permits**
- **Strategy Target Frequencies (STF):** Recommendations on how frequently the standards should be met over a period of years (i.e., “at least 12% of the years,” or “no more than 9% of the years.”)
- **Strategies:** Methods of achieving the Standards or Strategy Target Frequencies (i.e., permit conditions, dedication of water rights, Aquifer Storage and Recovery, . . .), adopted on a voluntary basis

Spring Shortfalls



Modeled Shortfalls for Spring Freshwater Inflow Targets

Summer Shortfalls



Modeled Shortfalls for Summer Freshwater Inflow Targets

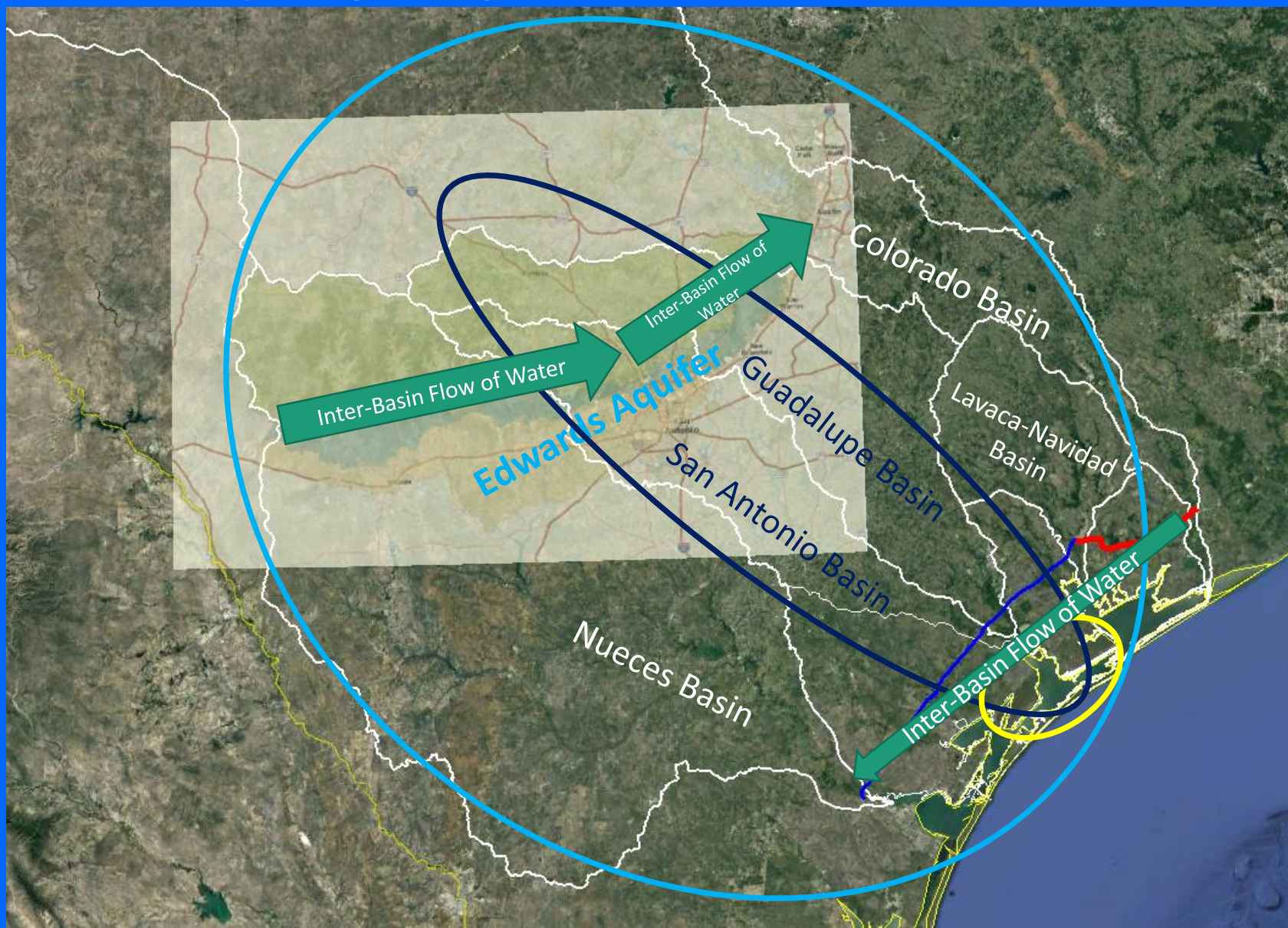
**FWI Management for the
San Antonio Bay – Guadalupe Estuary System:
*SABP is Working with Other Organizations to
Focus Attention on, and Identify Solutions to the Needs***

- GSA BBASC Study on Management Strategies for Attaining FWI “Strategy Target Frequencies” (STFs)
 - Looked at using Wastewater Return Flows, Bed and Banks Permits, Unappropriated Water Rights and Aquifer Storage and Recovery (ASR) to meet Spring and Summer STFs
- SABP-ICF Study on Stakeholder-Driven FWI Planning Opportunities
- Focusing Continued Attention on the Needs, Issues and Possible Solutions – at the Watershed and Inter-Regional scale

FWI Needs Call for Watershed-Scale, Stakeholder-Driven Planning and Management

- **Drought impacts on FWI for the SAB-GES continues to be a critical issue**
- **New “Drivers” call for Innovative Planning**
 - **New and increasingly large demands for industrial water supplies along the coast; population growth in the upper watersheds creates increasing demand for municipal water supplies**
 - **New issues regarding instream flow and FWI needs (i.e. FW mussels being listed as Endangered Species)**
- ***Stakeholder driven programs to develop water management policies and programs for environmental flows may be the best path forward***
 - ***Good example: Edwards Aquifer Recovery Implementation Program/Habitat Conservation Plan***
 - ***Potential Venues: GBRA-TAP White Paper/Agreement and GBRA Basin-Wide Habitat Conservation Plan (HCP)***

Inter-Regional Scale Planning: A Hydrogeologic-Infrastructure Framework



NEXT STEPS FOR SABP?

- Engaging stakeholders in discussions about FWI management planning and implementation options
- Working with GBRA, TAP, SARA and other entities involved in water management issues affecting the San Antonio Bay-Guadalupe Estuary System
- Implementing projects to increase FWIs during critical drought periods
- Looking for additional funding to address this issue.



The Future of San Antonio Bay
The San Antonio Bay Partnership is Planning for It!