

Instream / Environmental Flows for Texas

Oklahoma Governor's Water Conference

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Texas Water Development Board**



Environmental Flows for Texas

- Freshwater Inflows – Bays and Estuaries
- Instream Flows – Rivers and Streams

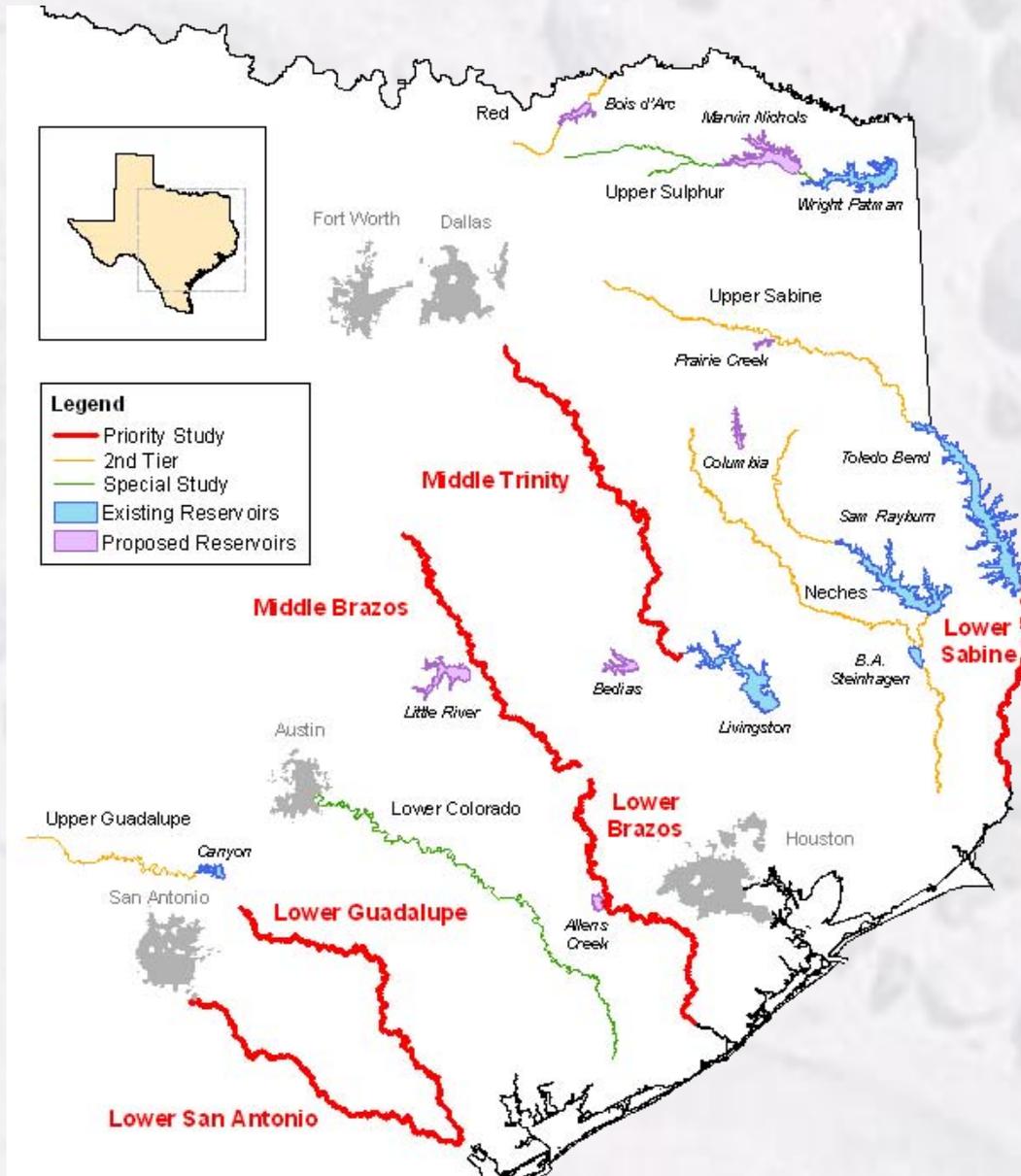


Instream Flows in Texas

- 1957 – Water planning (TWDB)
- 1985 – Water rights permitting (TCEQ), Recommendations (TPWD)
- 1997 – SB1 – Regional water planning
- 2001 – SB2 – Studies to determine flow conditions for a Sound Ecological Environment (TCEQ, TWDB, TPWD)
- 2007 – SB3 – Local (rapid) assessment of environmental flow requirements (with future refinement)



SB2 Texas Instream Flow Program



Current Priority Studies

- Lower Sabine
- Middle & Lower Brazos
- Lower San Antonio

Completed Studies - 2012-13

Remaining Priority Studies

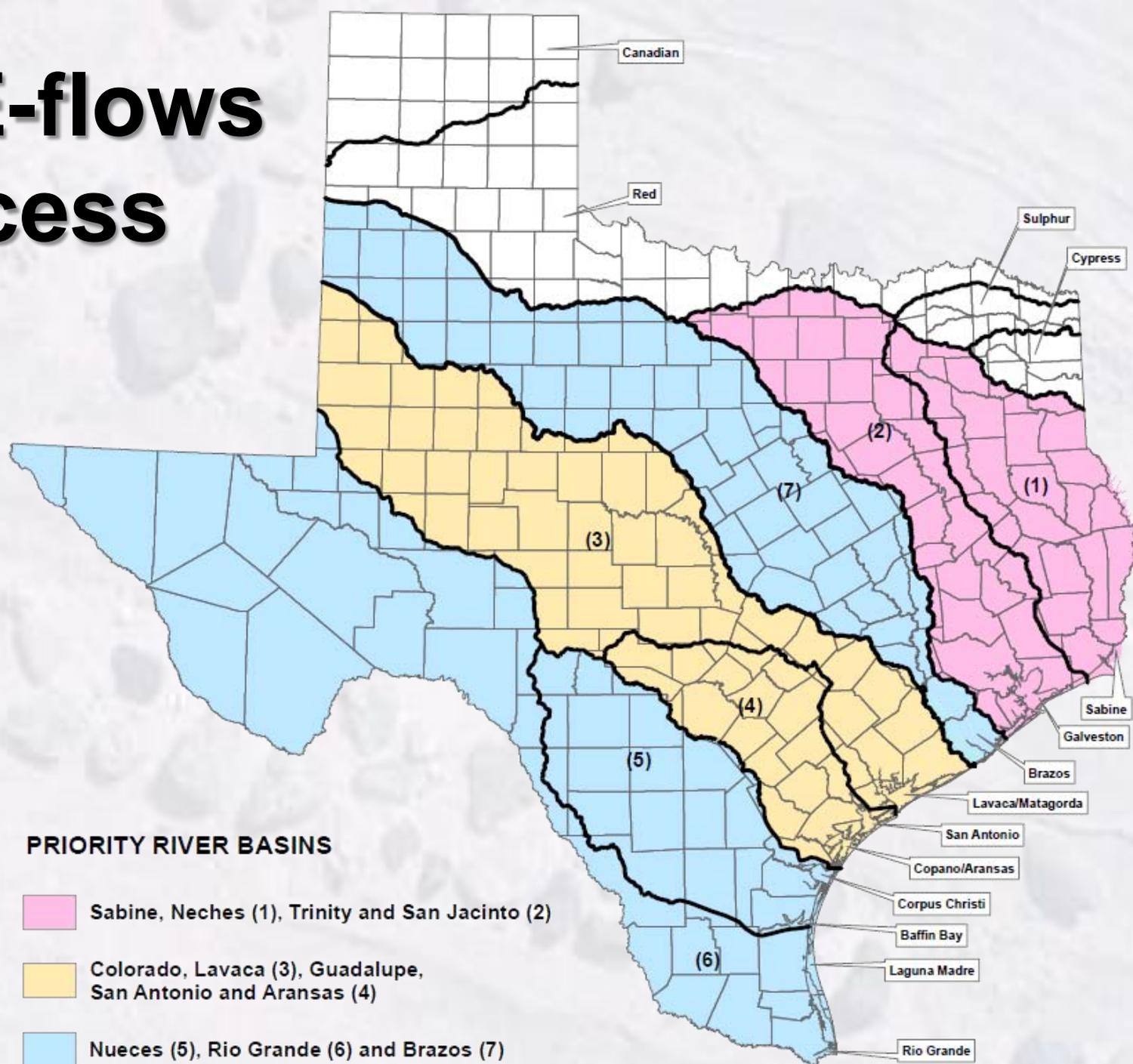
- Middle Trinity
- Lower Guadalupe

Second Tier Studies

- Upper Guadalupe
- Neches
- Upper Sabine
- Bois d'Arc

Completed Studies - ?

SB3 E-flows Process



PRIORITY RIVER BASINS

2008-2011

 Sabine, Neches (1), Trinity and San Jacinto (2)

2009-2012

 Colorado, Lavaca (3), Guadalupe, San Antonio and Aransas (4)

2010-2013

 Nueces (5), Rio Grande (6) and Brazos (7)

Lessons Learned

- **Pre Senate Bill 2** (individual agency programs)
Project specific studies
- **From Senate Bill 1** (Regional Water Planning)
Local stakeholders leading regional process
- **From Senate Bill 2** (Texas Instream Flow Program)
Regional studies with combined agency resources and local stakeholder input
- **From Senate Bill 3** (Eflows Process)
Local stakeholders and scientists leading the process for basin-bay systems using best available science plus refinement over time

Lessons Learned

Pre Senate Bill 2

- Different disciplines/agencies (Biology/Parks and Wildlife and Hydrology-Engineering/Water Development Board) think/speak/act completely differently
- Agencies as adversaries don't get a lot done (instream flow activities)
- Agencies as partners can get results (Freshwater Inflow Program)
- Impacts of projects extend throughout a stream or river system (one or two project specific studies equals one study of an entire sub-basin)

Lessons Learned

From Senate Bill 1

- Water planning (like developing environmental flow recommendations) is part science and part local goals and values
- With assistance, regional stakeholders can do a decent job with the science
- Regional stakeholders do an excellent job with local goals and values
- Regional stakeholders take the results they develop much more seriously than the ones state agencies develop for them

Lessons Learned From Senate Bill 2

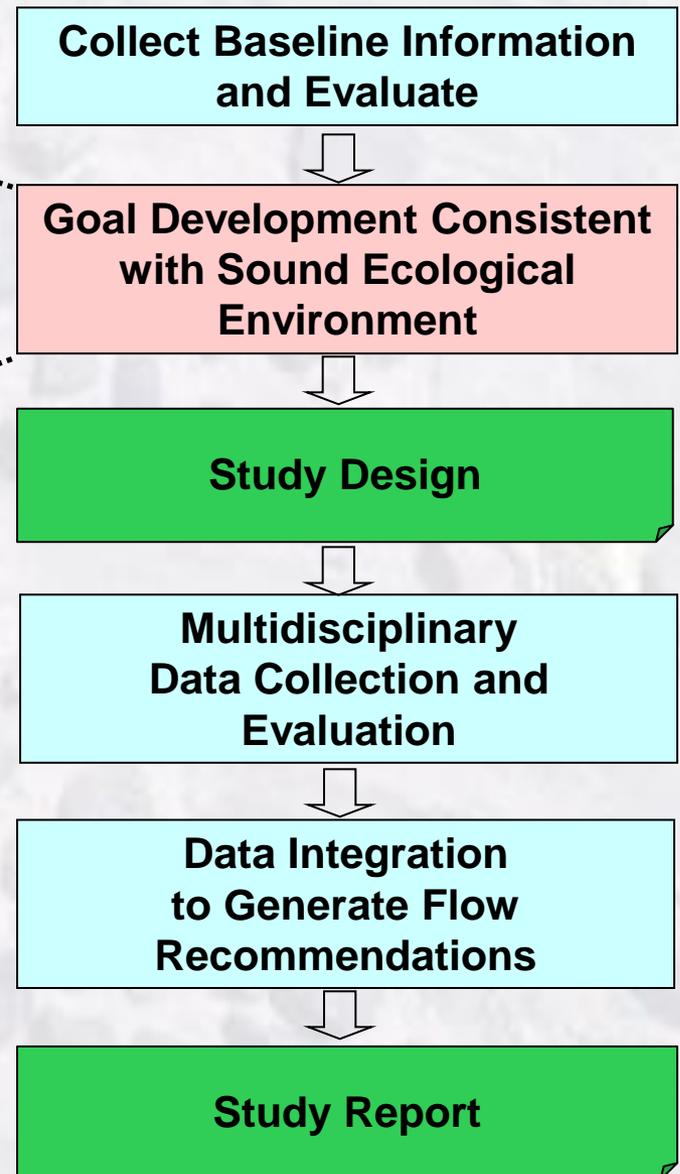
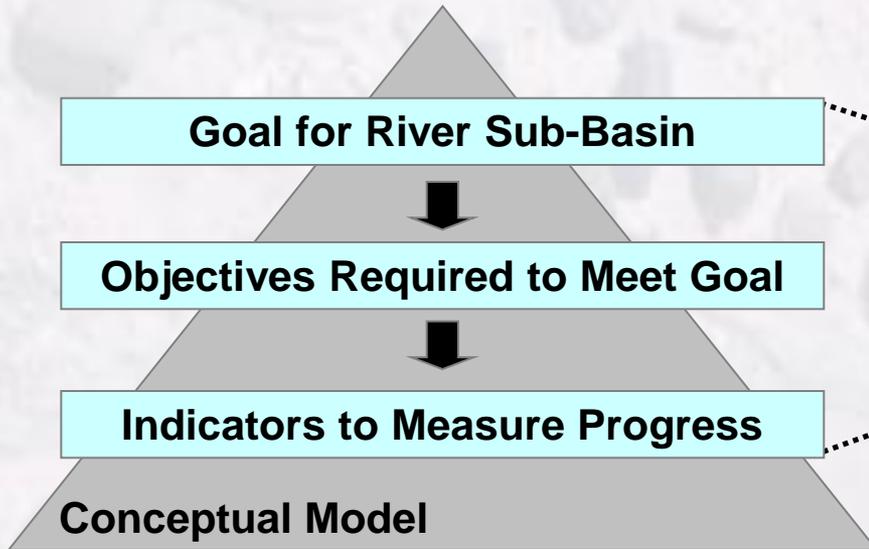
Texas Instream Flow Program

Senate Bill 2 (2001)

“...conduct studies and analyses to determine appropriate methodologies for determining flow conditions in the state’s rivers and streams necessary to support a sound ecological environment.”



Stakeholder Involvement



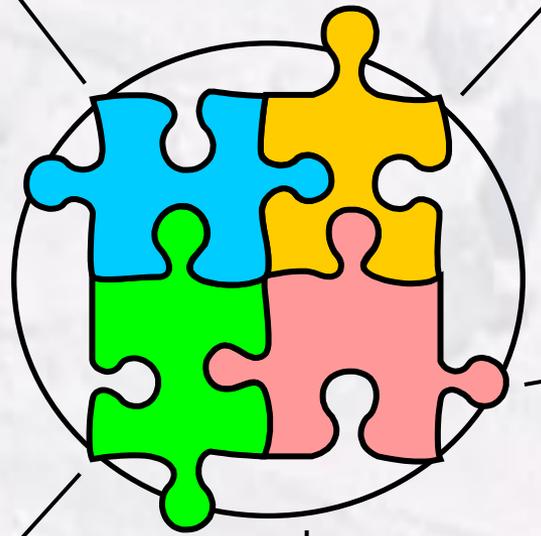
Lessons Learned From Senate Bill 2

- Local stakeholder input on goals, objectives, and indicators makes for a better study

Hydrology and
Hydraulics

Physical
Processes

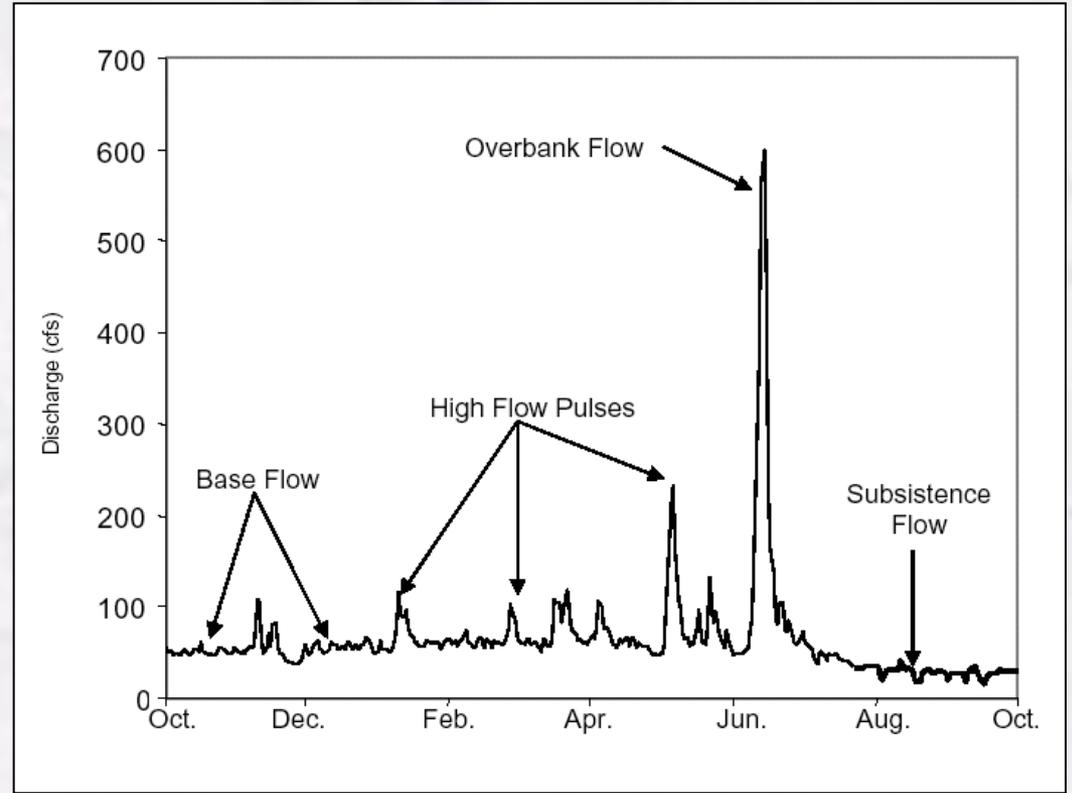
Multi-Disciplinary Approach



Water
Quality

Biology

Connectivity



Flow Regime

Lessons Learned From Senate Bill 2

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- There is a synergy when different disciplines and agencies work together
- Rivers and streams are more complex than we thought (single flows to flow regime)

THE SCIENCE OF INSTREAM FLOWS

A Review of the Texas Instream Flow Program

Scientific Peer Review

National Academy
of Sciences (2005)

Review of the TIFP

- “conforms with the best practices”
- “will provide enormous benefits to the state”
- identified several opportunities for improvement

Lessons Learned From Senate Bill 2

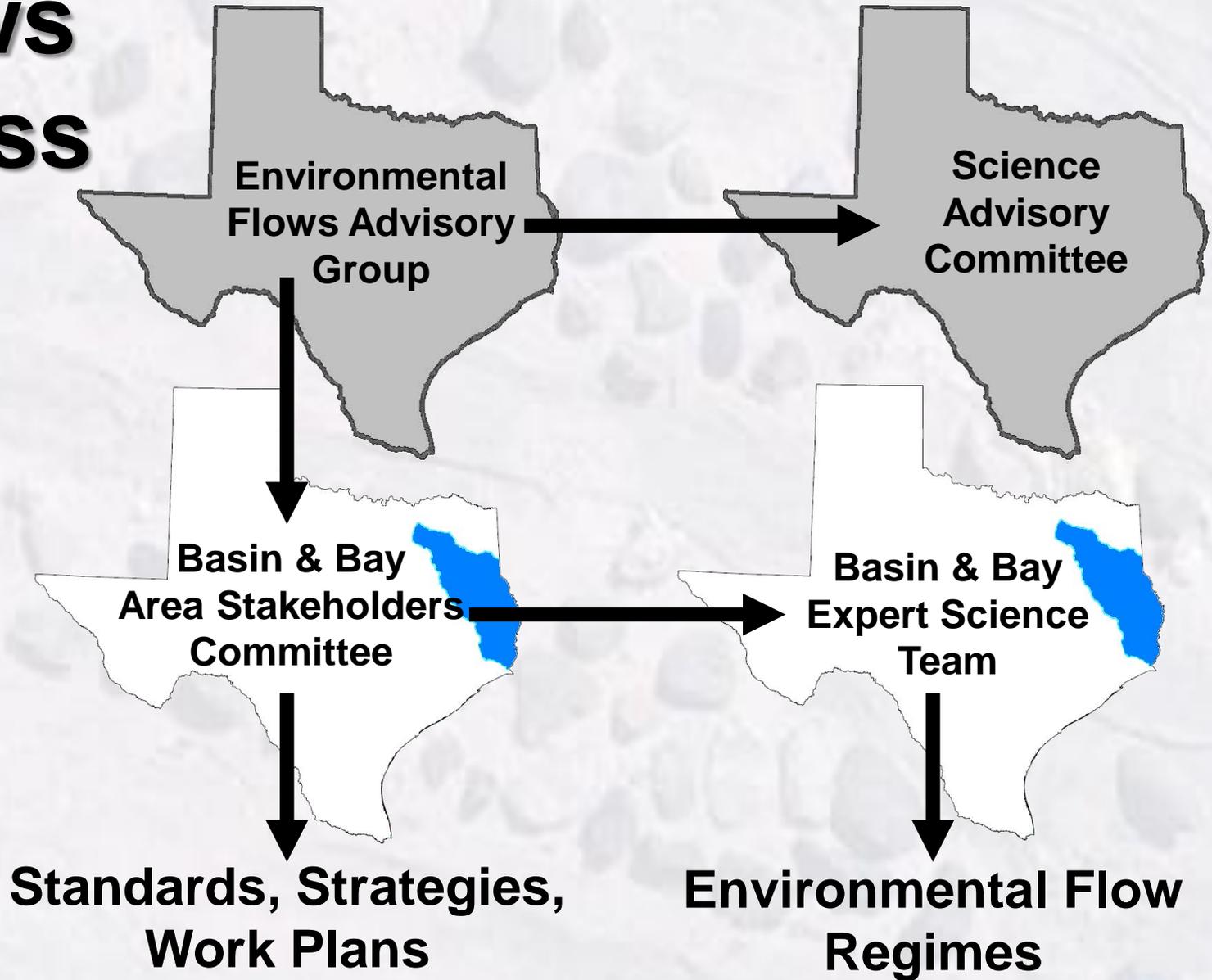
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- There is a synergy when different disciplines and agencies work together
- Rivers and streams are more complex than we thought (single flows to flow regimes)
- Scientific peer review is worth its weight in gold
- We can learn from others' successes and failures

Lessons Learned From Senate Bill 3

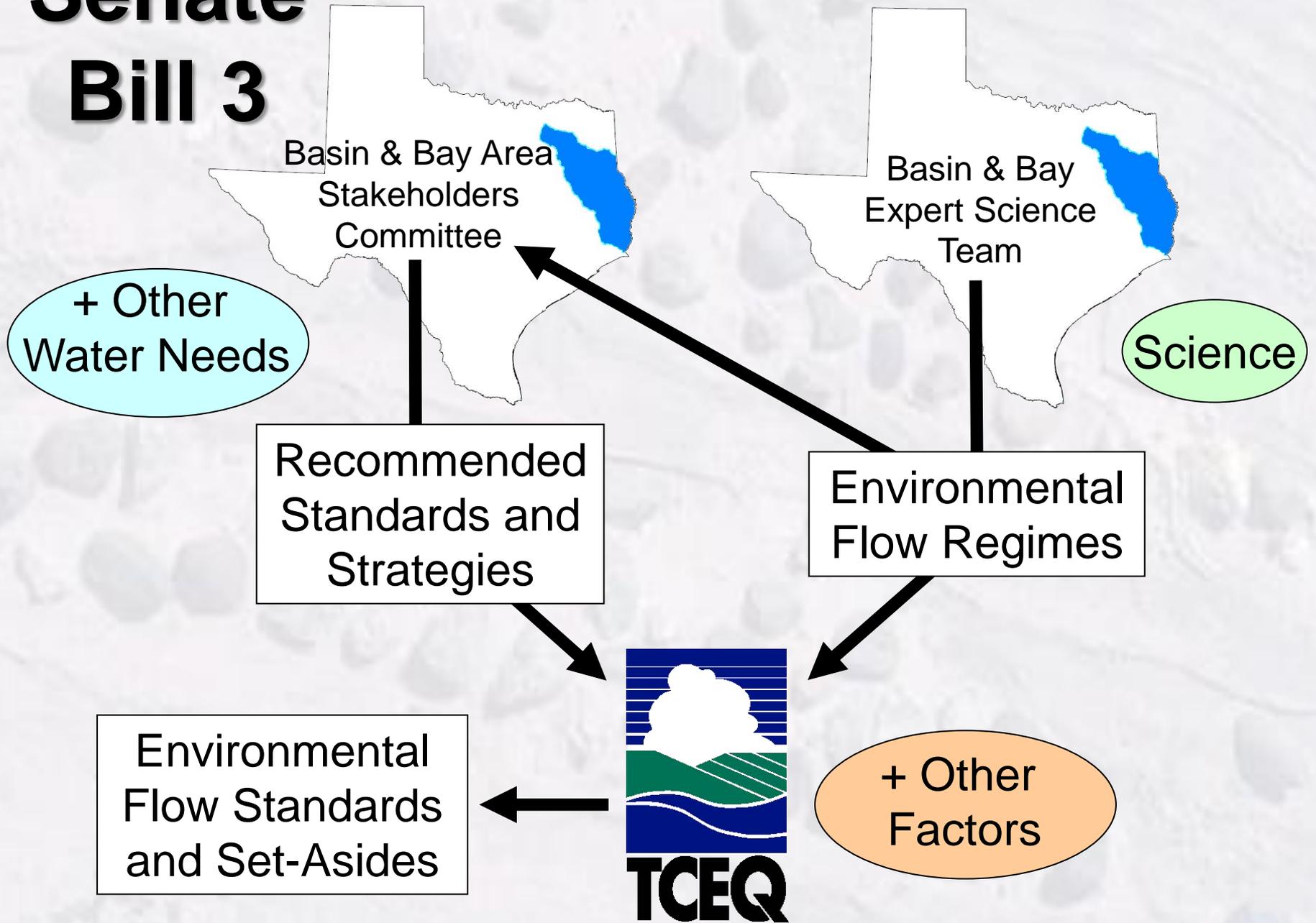
SB3 E-flows Process



Lessons Learned From Senate Bill 3

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Senate Bill 3



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- Its very difficult for scientists to come up with flow recommendations in only one year
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- Results are improved with better available science and stakeholder relationships not necessarily more plentiful water

Lessons Yet to be Learned

- Balancing the needs of a complex ecosystem versus a relatively simple regulatory framework
 - What to do with high pulse and overbank components of flow regime
 - How to provide inter-annual variability
- How to provide flows in over allocated systems
- How to bridge a language barrier between water rights regulators/holders (firm yield) and instream flow scientists/engineers (inter- and intra-annual flow variability)

Questions?

