



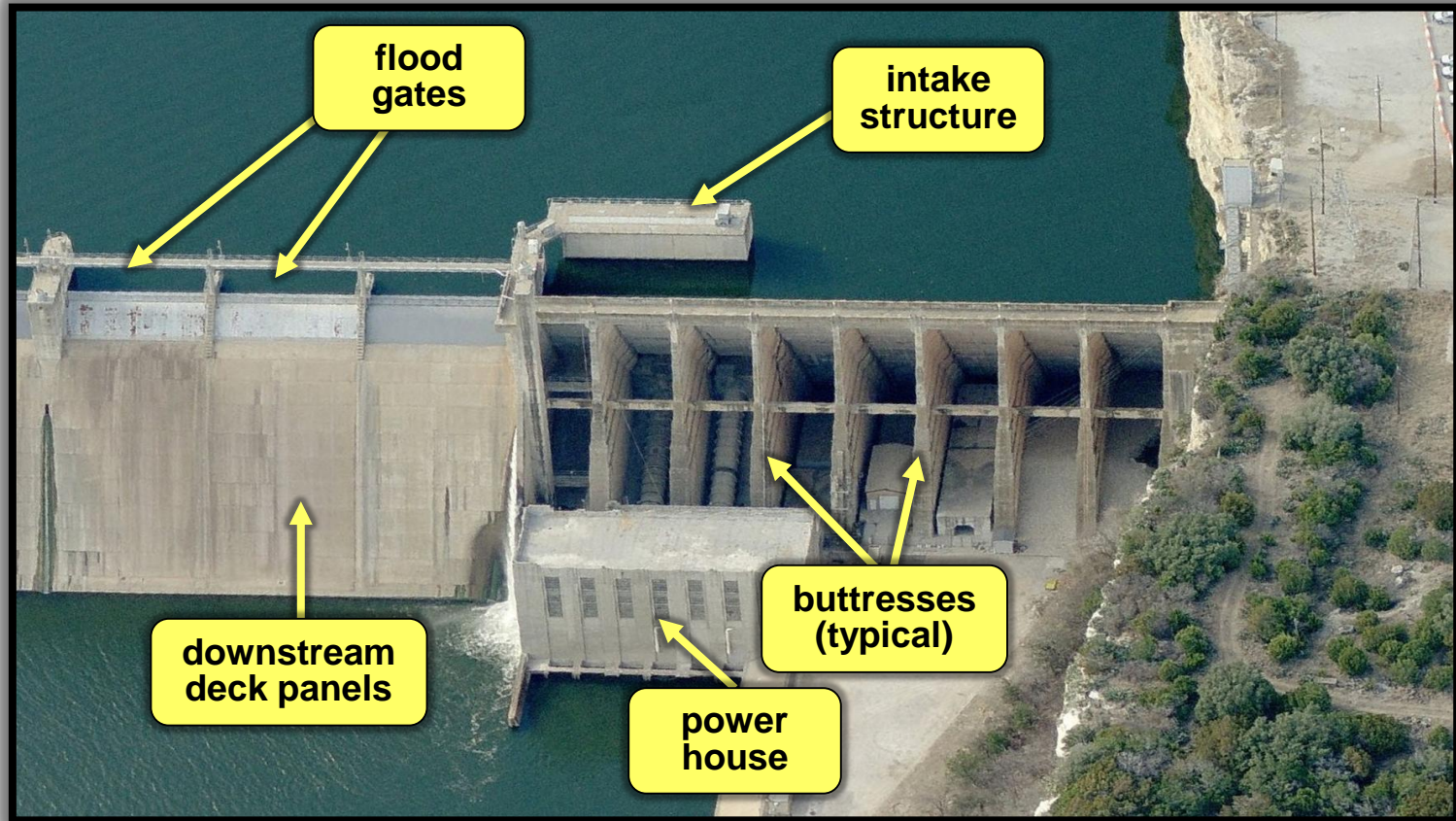
Possum Kingdom Lake Morris Sheppard Dam Concrete Assessment

***Presented by
Michael McClendon
Upper Basin Regional Manager
&
Mark Stendahl
Engineering Services Manager***

Meeting Date: April 25, 2016

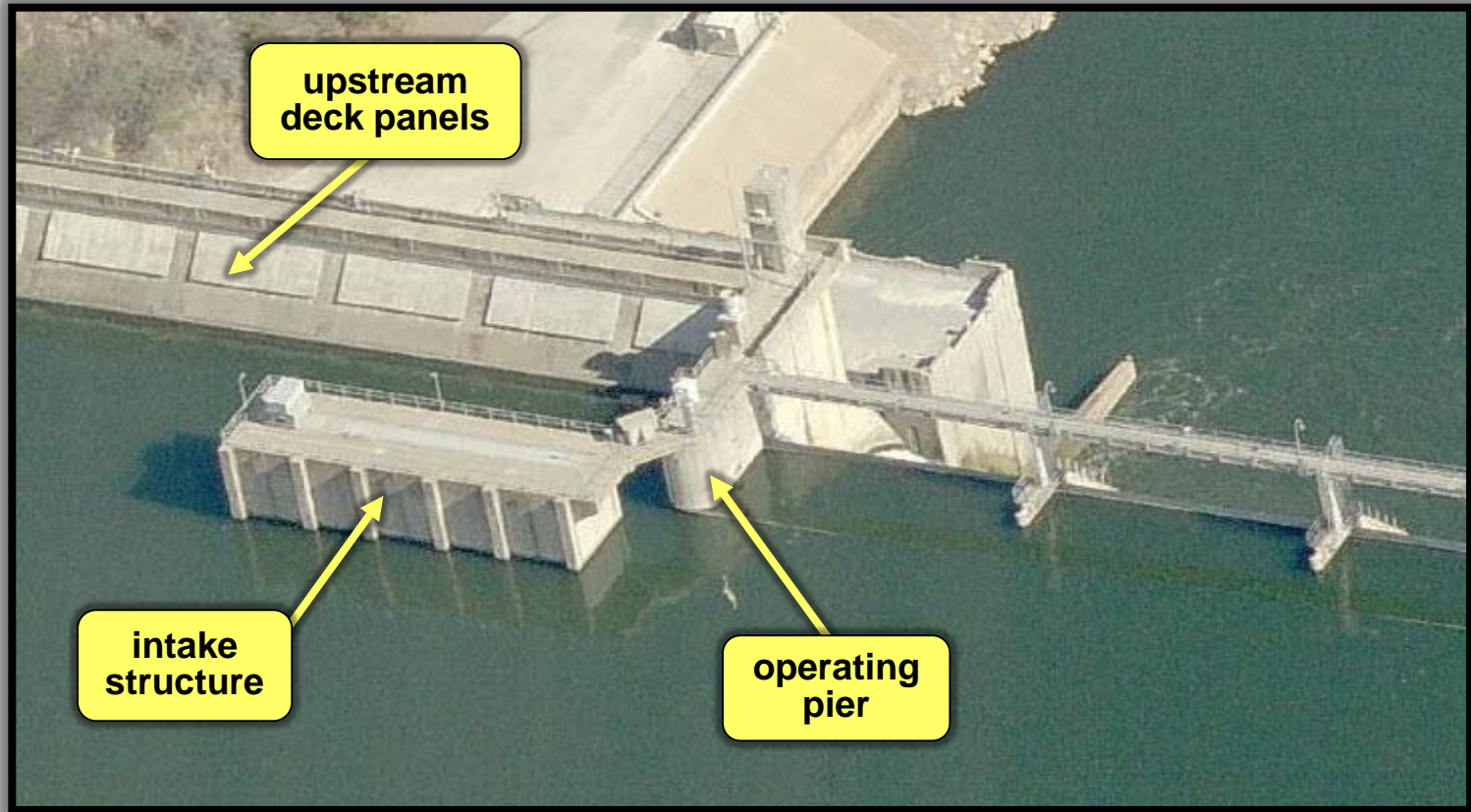


Mass Concrete Elements (downstream view)





Mass Concrete Elements (upstream view)



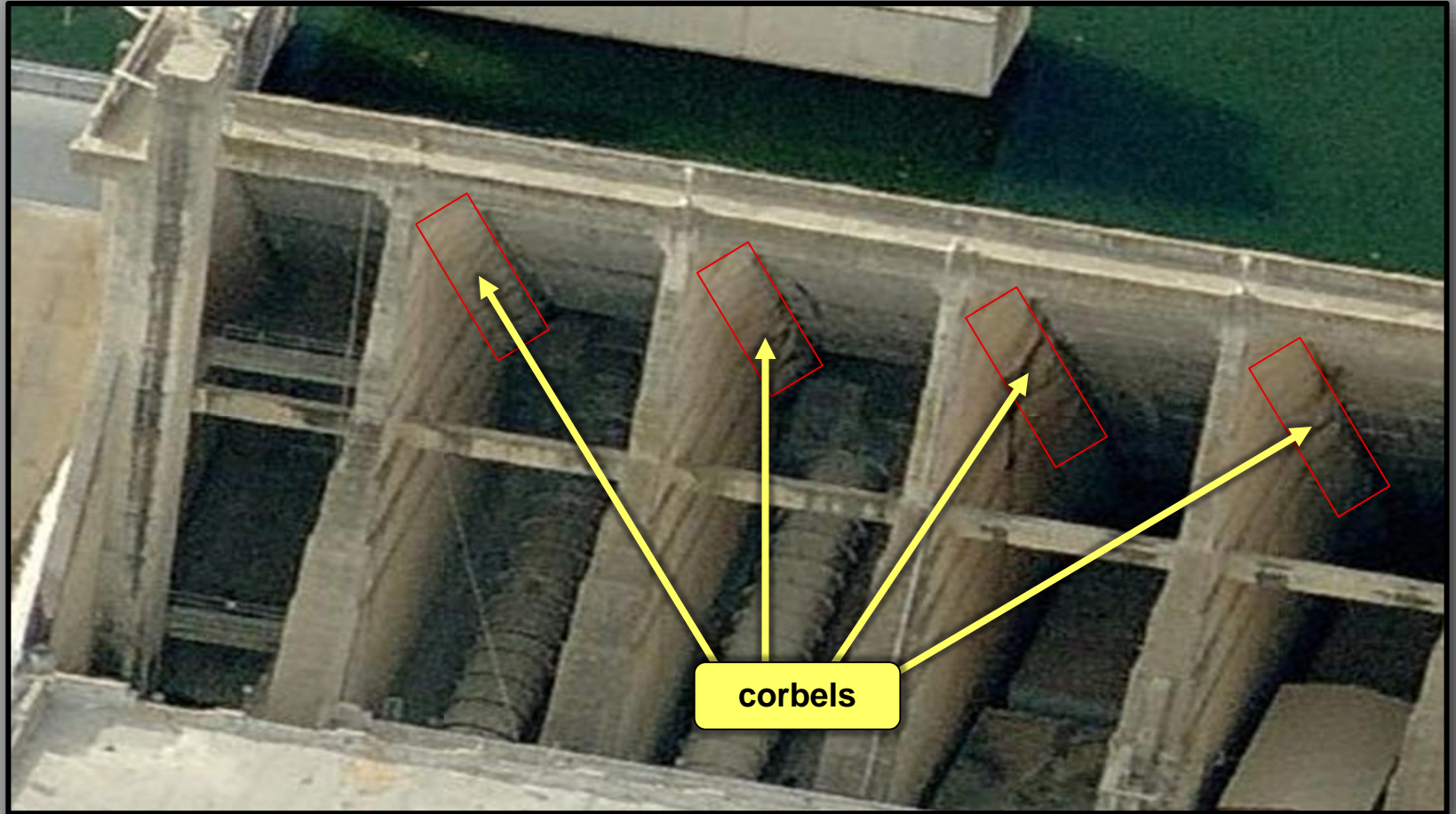
Morris Sheppard Dam History

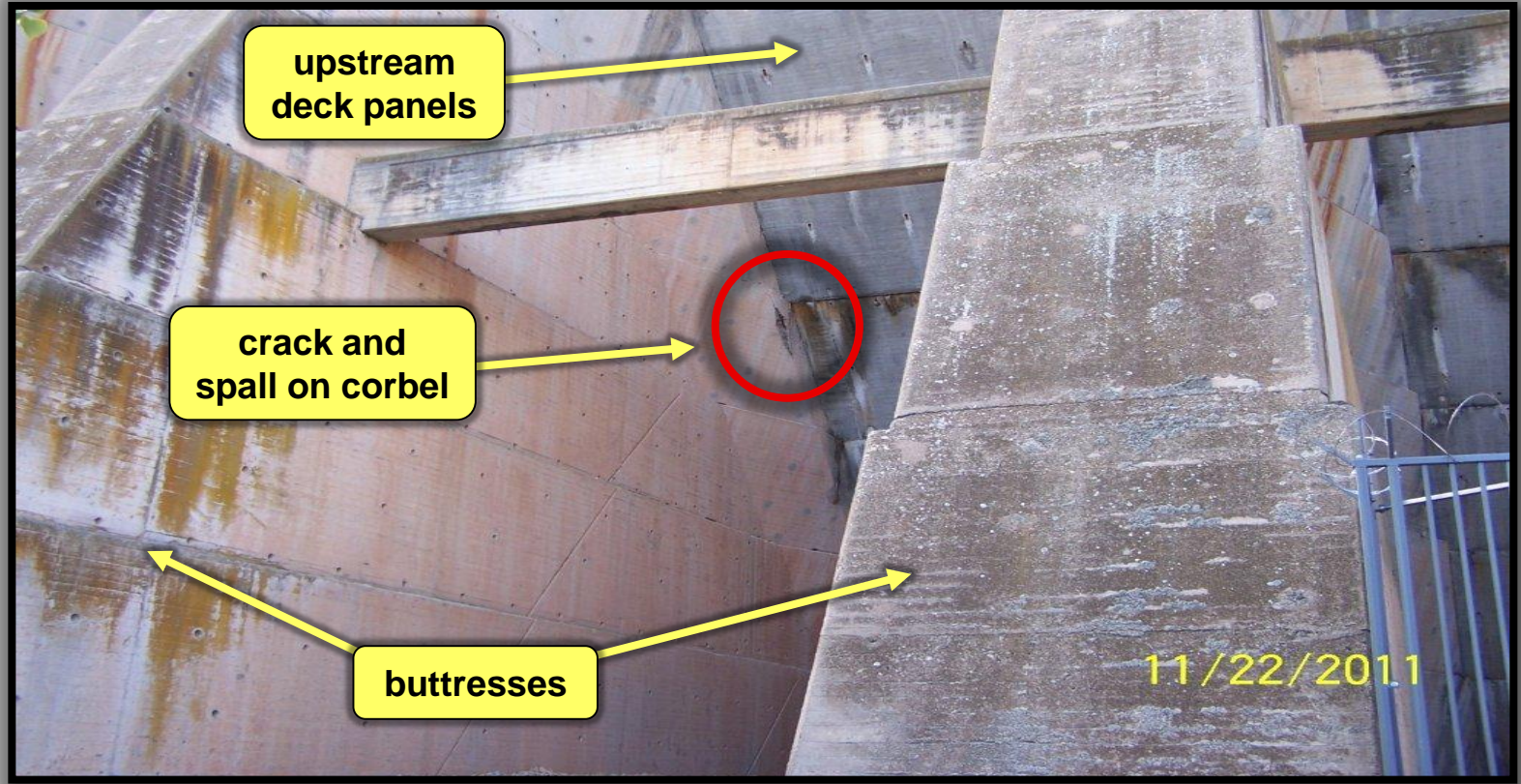
- **Constructed** ***1938 to 1941***
- **Service Life to Date** ***75 Years***
- **Movement Detected** ***1987***
- **Correction Completed** ***1994***
 - **Relief Wells Installed**
 - **Ballast Blocks Added**
 - **Selected Cracks Repaired**
 - **Stilling Basin Extended**
 - **Foundation Monitoring Increased**



Bay 22 – Downstream Deck Panel with Spalling and Rebar Corrosion

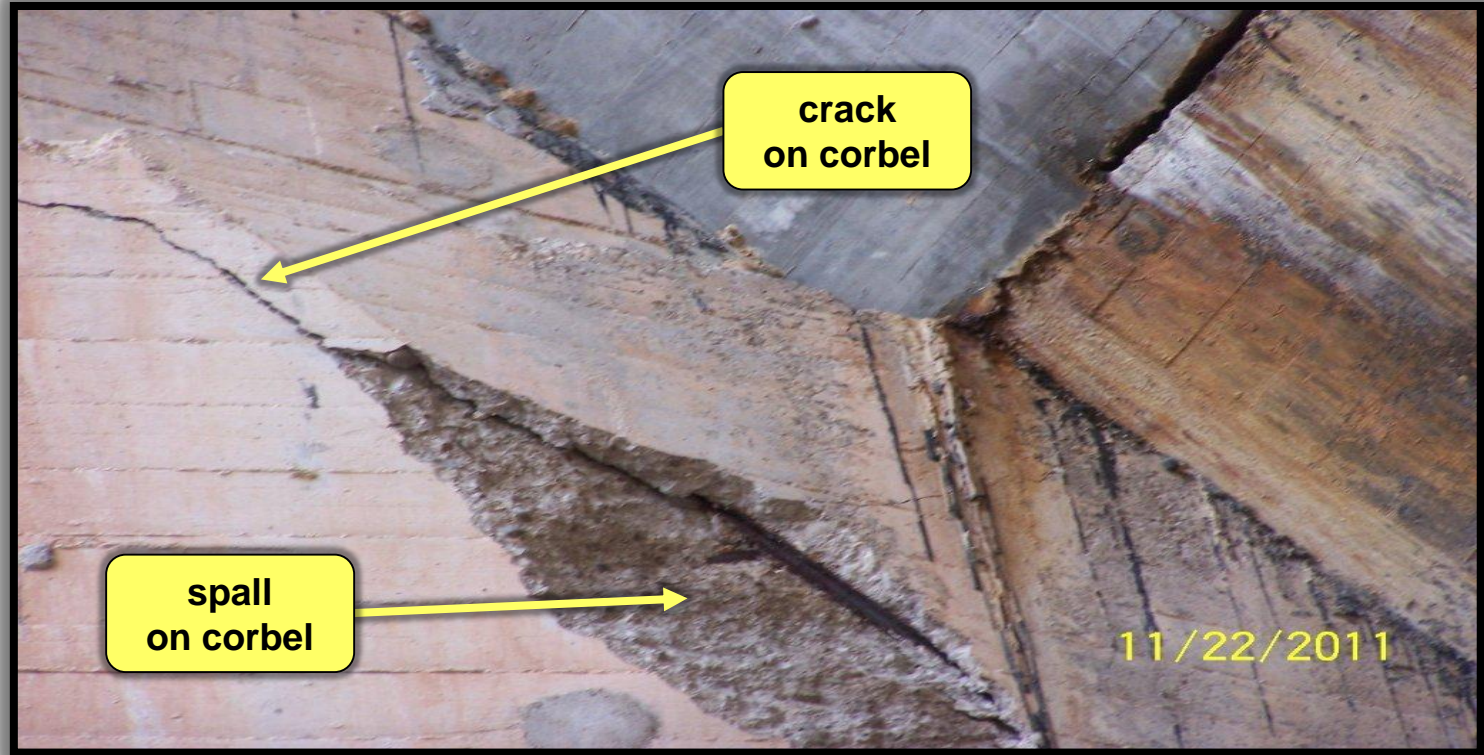








Buttress 28 – Close-up of Crack and Spall at Corbel



spall area: 4 x 6 feet; 4 to 9 inches deep



Buttress 28 – Removal of Deteriorated Concrete



Removal of deteriorated concrete



New rebar & zinc anodes

Buttress 28 Repair



Grout pour from man lift



Forms and bracing



Buttress 28 – Following Repair by RSMU Crew





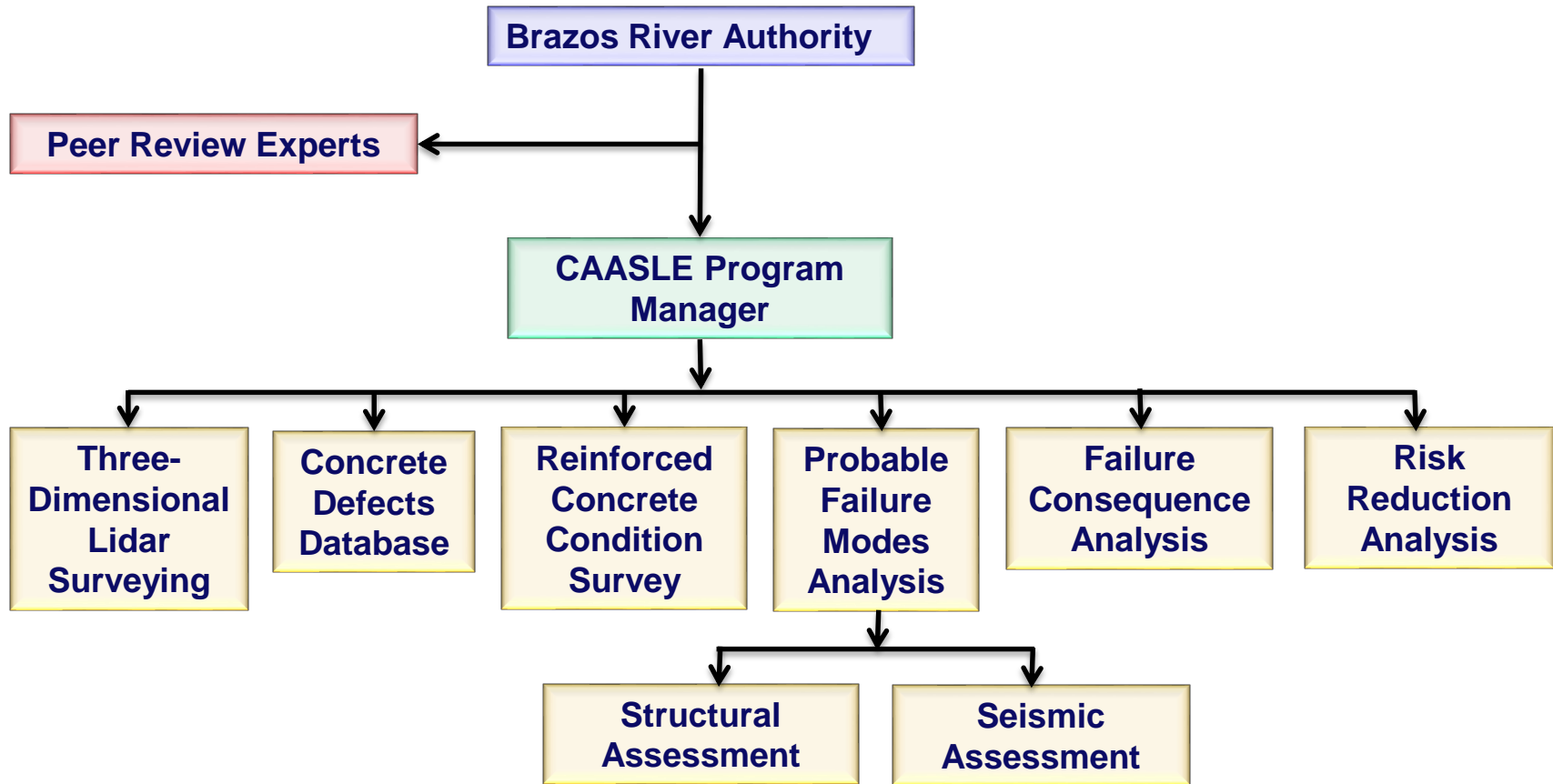
Concrete Assessment Program

Actions to Date:

- Hired Peer Review Consultants
- Developed RFP/Reviewed submittals/conducted interviews
- Recommended Wiss, Janney, Elstner Associates as Program Manager
- Negotiated Scope of Work and Not-to-Exceed Fee

Next Steps/Project Schedule:

- Contract with Program Manager (May 2016)
- Perform Assessment/Report Findings (May 2016 – March 2018)
- Contract for Repair Options/Design (TBD)
- Contract for Construction, if necessary (TBD)



Program Manager Deliverables

Develop a concrete defects database	\$ 205,800
Perform destructive and non-destructive testing	\$ 1,008,200
Determine the causes of concrete deterioration	\$ 655,800
Develop 3-D structural model	\$ 203,700
Provide repair recommendations based on risk assessment and priority	\$ 431,900
Develop implementation plan, budget and schedule	\$ 160,900
Provisional testing and modeling	\$ <u>219,600</u>
Budget	\$ 2,885,900

Project Objectives

- **Remedial Action Road Map**
 - Program Manager develops options
 - Authority selects best option for BRA
 - Program Manager develops an implementation plan, budget and schedule for selected option
 - BRA adopts implementation plan

The following resolution is presented for consideration to the Board of Directors of the Brazos River Authority for adoption at its ~~January 25, 2016~~ **April 25, 2016** meeting:

“BE IT RESOLVED that the Board of Directors of the Brazos River Authority hereby authorizes the General Manager/CEO to negotiate and execute a contract with Wiss, Janney, Elstner Associates Inc. to perform a comprehensive concrete assessment and service life recommendation study for Morris Sheppard Dam in an amount not to exceed of \$2,885,900.”



**Brazos
River
Authority**