Lower Rio Grande

Gary Esslinger, Elephant Butte Irrigation District Treasurer/Manager

Gary L. Esslinger is the Treasurer-Manager of the Elephant Butte Irrigation District. Gary is a third generation member of a pioneer farming family living in the Mesilla Valley. He has kept his roots in farming as well as other agricultural based industry. After receiving a bachelor's degree in business administration from Northern Arizona University in 1973, he worked six years in Los Angeles for a large west coast flour milling corporation as office manager. After becoming tired of the city life, Gary returned to the Mesilla Valley and began working for EBID in 1978 where he has been for the past 24 years. Gary began his District career as Purchasing Agent and has held other organizational positions such as Maintenance Chief and Assistant Manager. Gary is, and has been for the past 15 years, the District's Manager and has been the District's Records Manager for the past 2 years. Gary lives in La Mesa on the family farm with his wife, Tina, and three daughters.

J. Phillip King, Elephant Butte Irrigation District

J. Phillip King is the John Clark Distinguished Professor and Associate Department Head in the Civil Engineering Department at New Mexico State University. His research includes river and groundwater system modeling and management, optimization and decision theory, basin-scale management and policy, and hydrologic forecasting. His activities also include projects to enhance the diversity of the country's STEM workforce. Phil is also Principal Engineer for King Engineering & Associates, a small New Mexico-based consulting firm. Phil has worked with government agencies, irrigators, municipalities, Native American tribes, and environmental groups to develop new and innovative approaches to water management and education. He served as a Peace Corps volunteer in Malawi, Africa, and as a Fellow of the American Association for the Advancement of Science at the National Science Foundation. Phil has a Ph.D. from Colorado State University, a B.S. from Berkeley, and an M.B.A. from NMSU. He is a registered Professional Engineer in New Mexico.

Editor's Note: The following presentation was prepared by Gary Esslinger, but due to last minute circumstances, Mr. Esslinger was unable to give the presentation, and J. Phillip King presented the talk on his behalf.

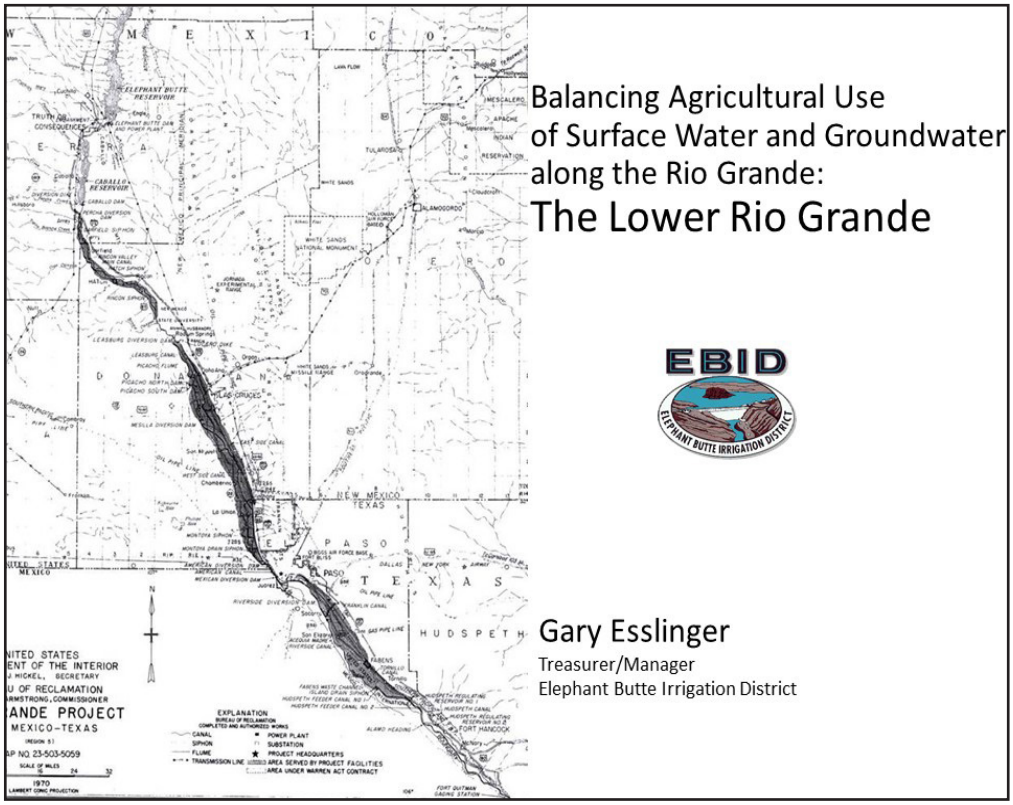

Figure 1. Introduction.

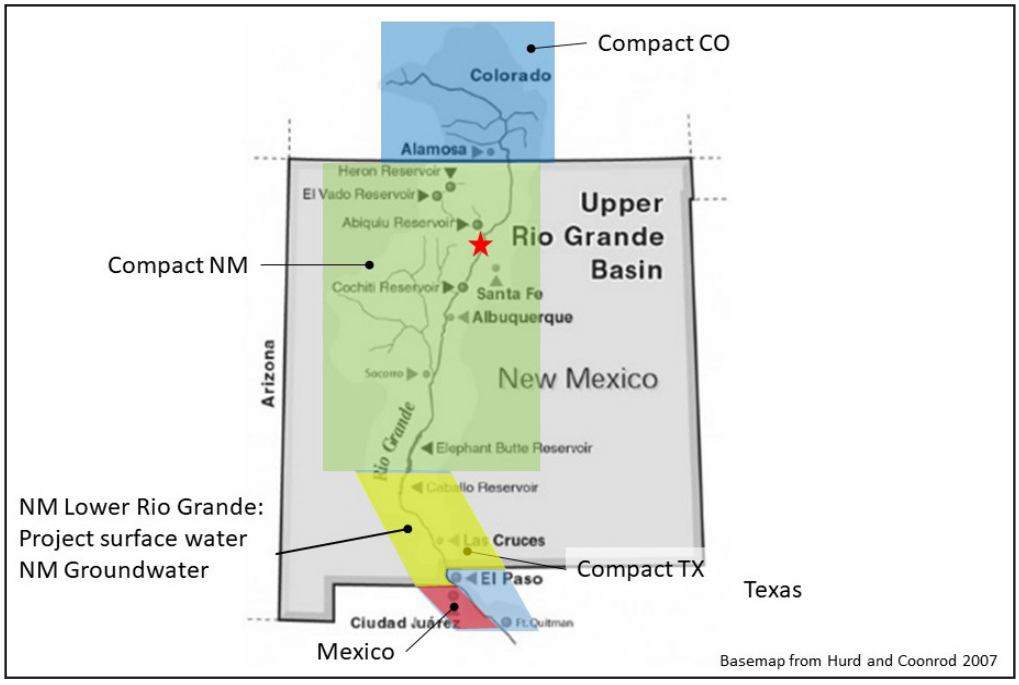

Figure 2. Compact states - three states, two countries, and Elephant Butte Irrigation District.

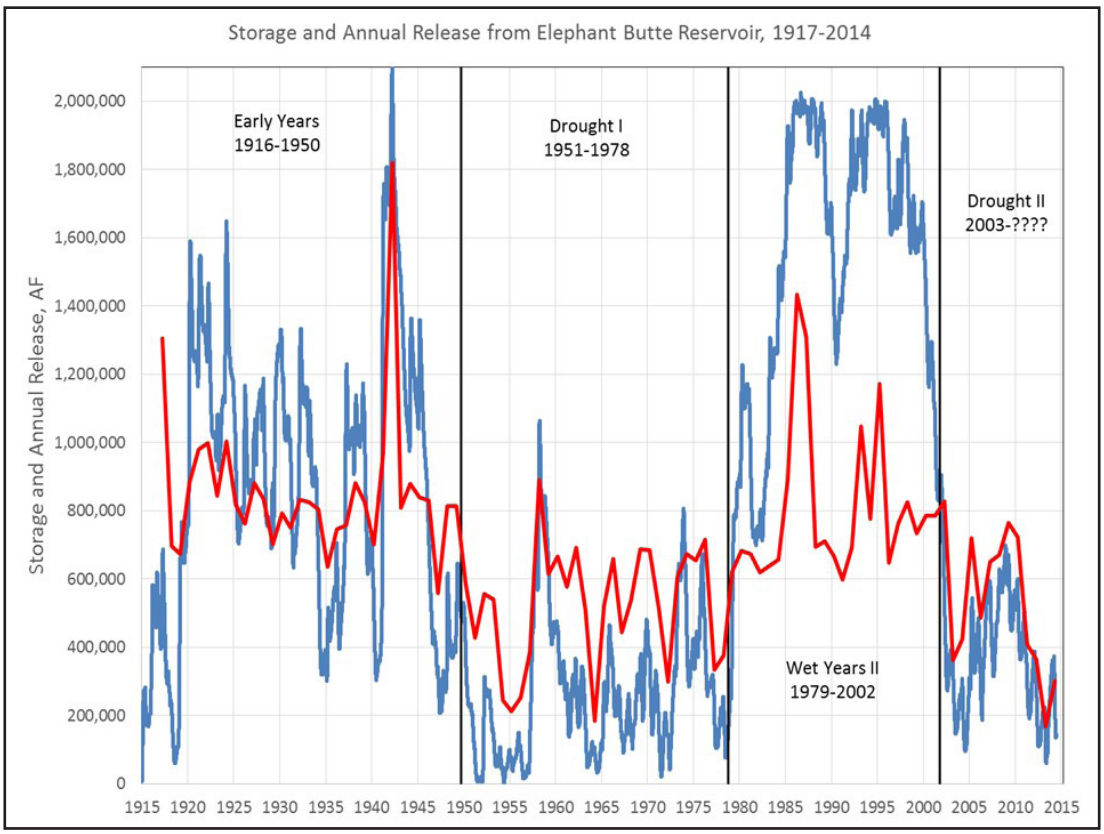

Figure 3. Storage and annual release from Elephant Butte Reservoir.

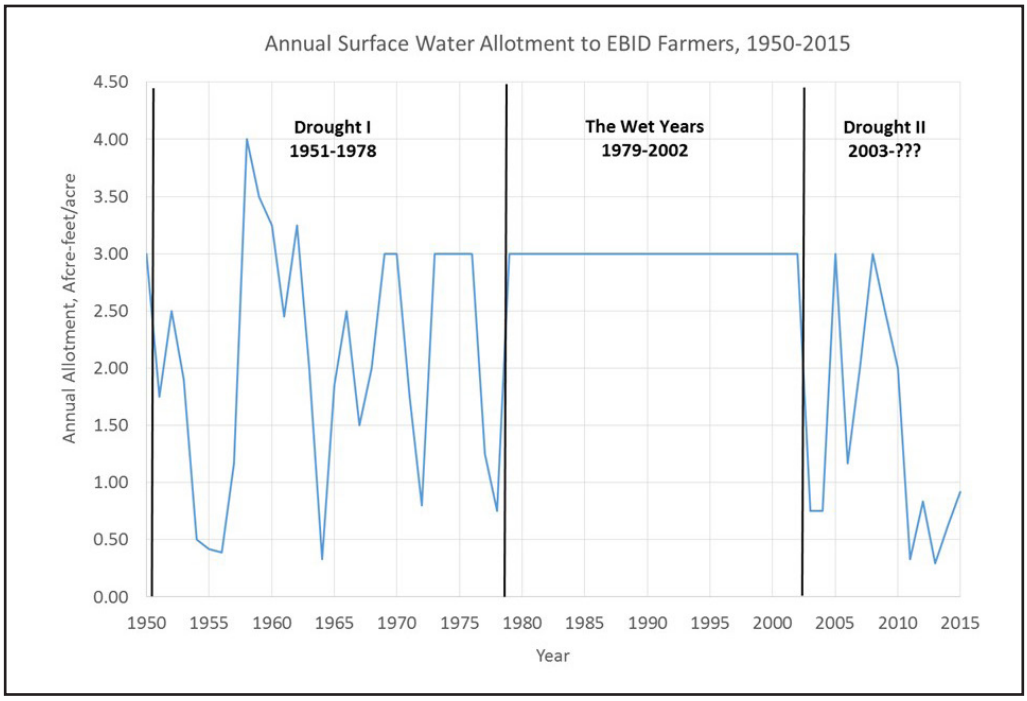

Figure 4. Annual surface water allotment to EBID farmers.

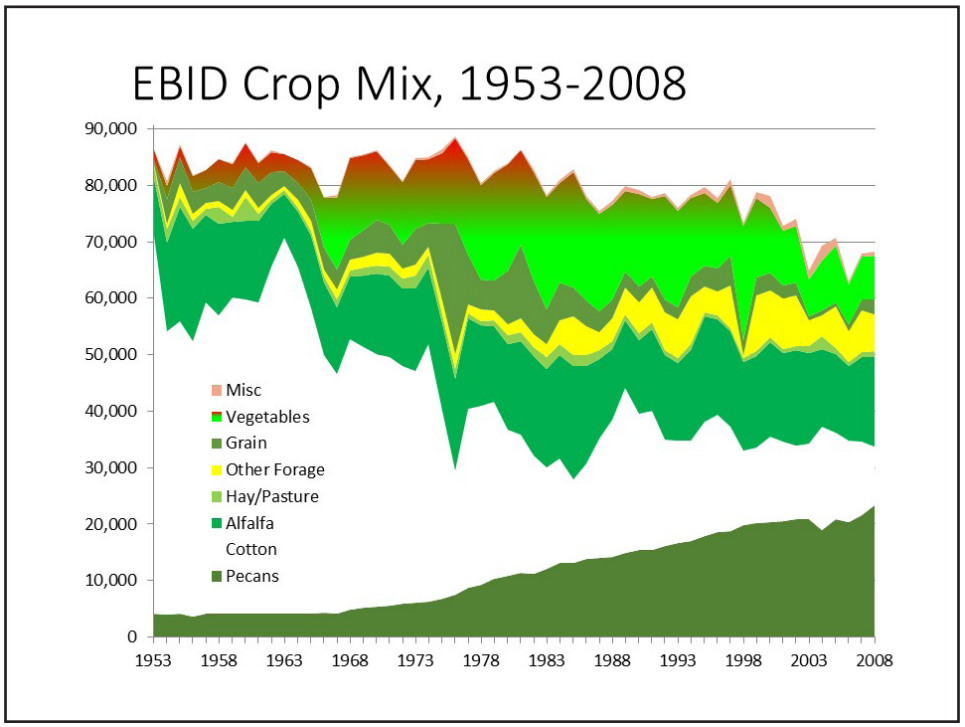

Figure 5. EBID crop mix composition from 1953-2008.

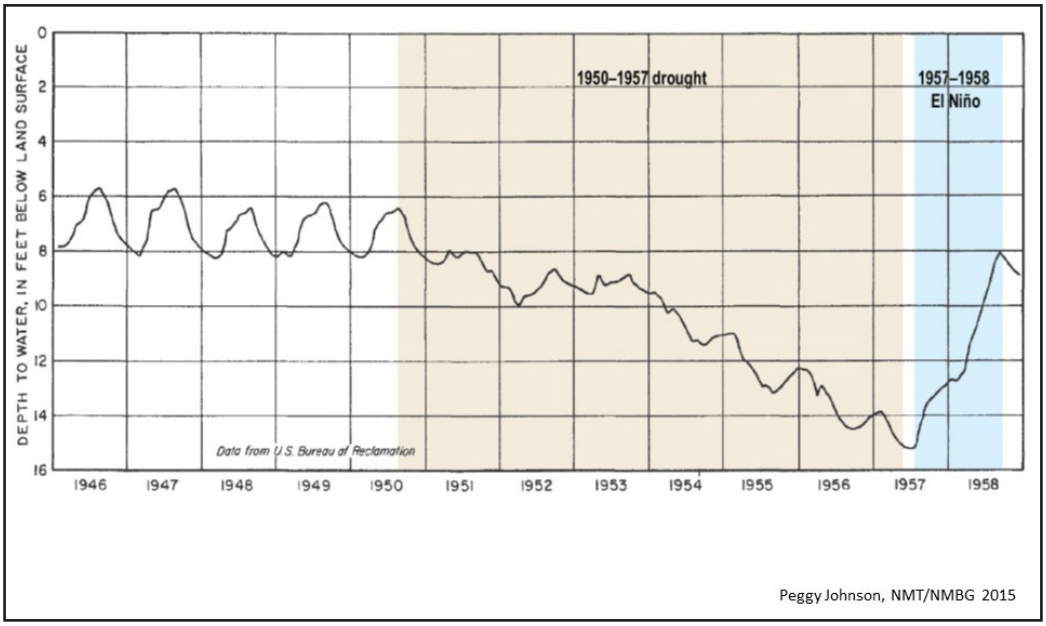

Figure 6. Average depth to groundwater in the Mesilla Valley from 1946 to 1958.

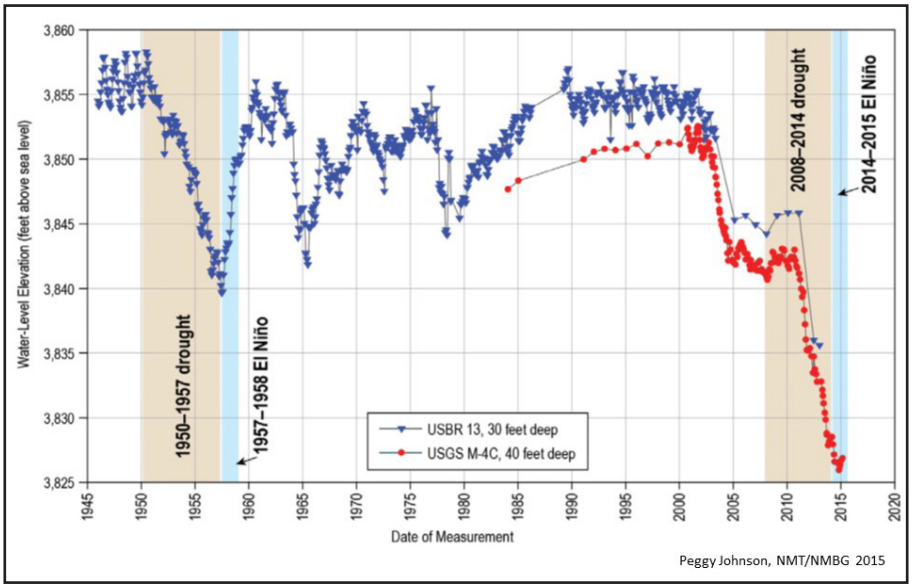

Figure 7. Groundwater elevation in the Mesilla Valley from 1946 to 2015.

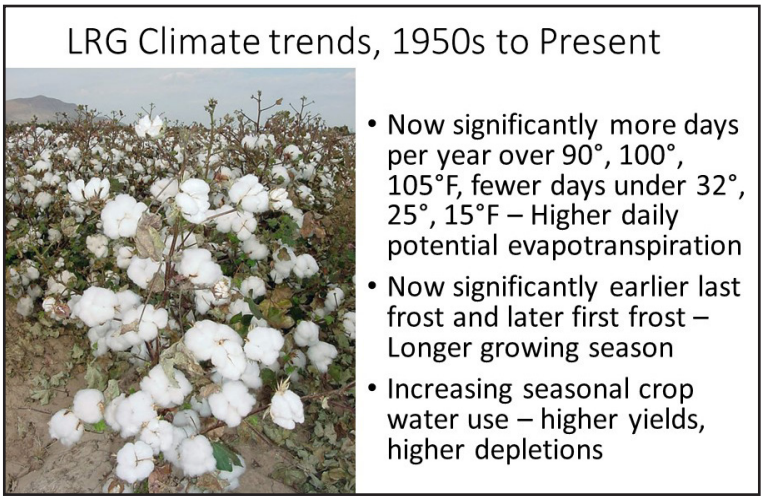

Figure 8. Lower Rio Grande climate trends from the 1950s to 2015.

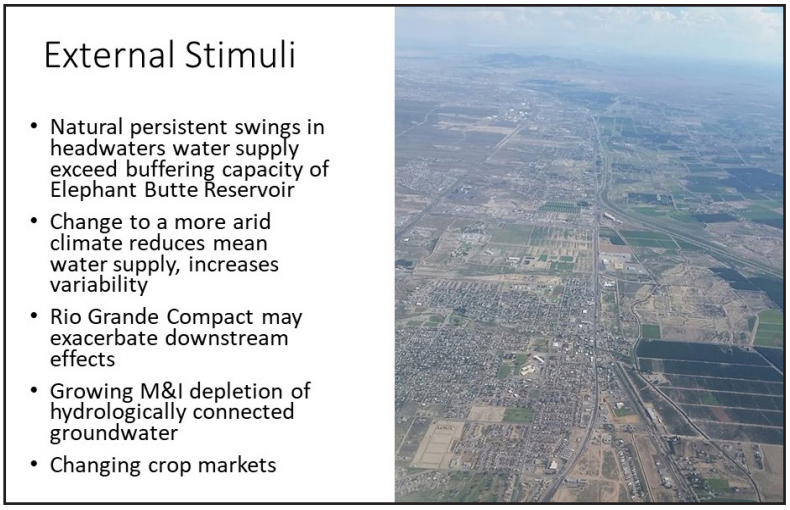

Figure 9. External stimuli.

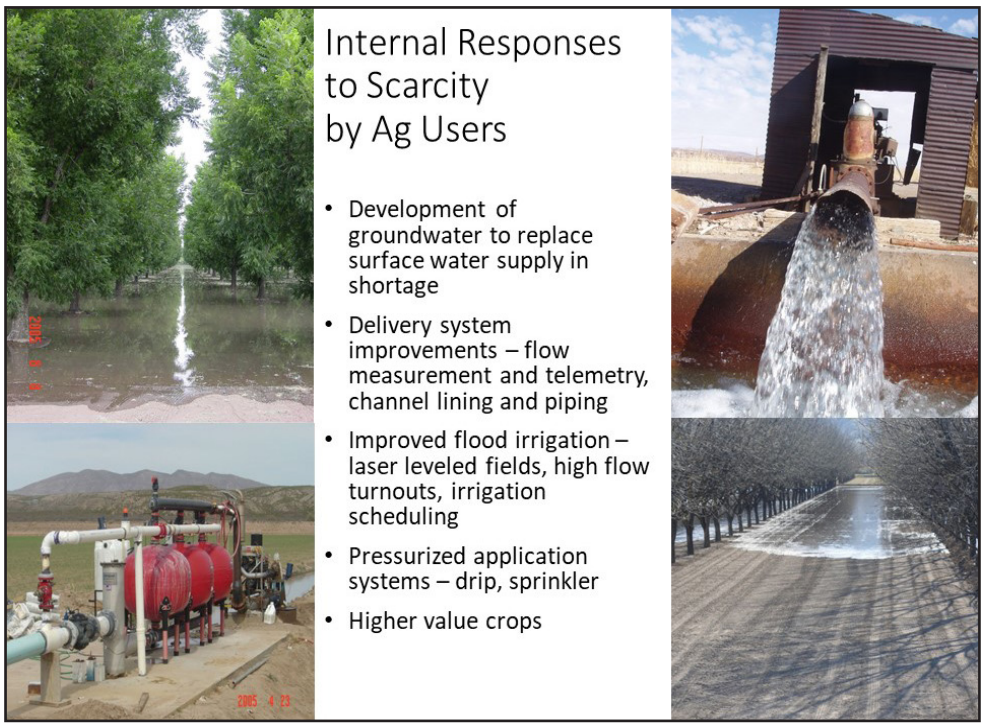

Figure 10. Internal responses to scarcity by agricultural users.

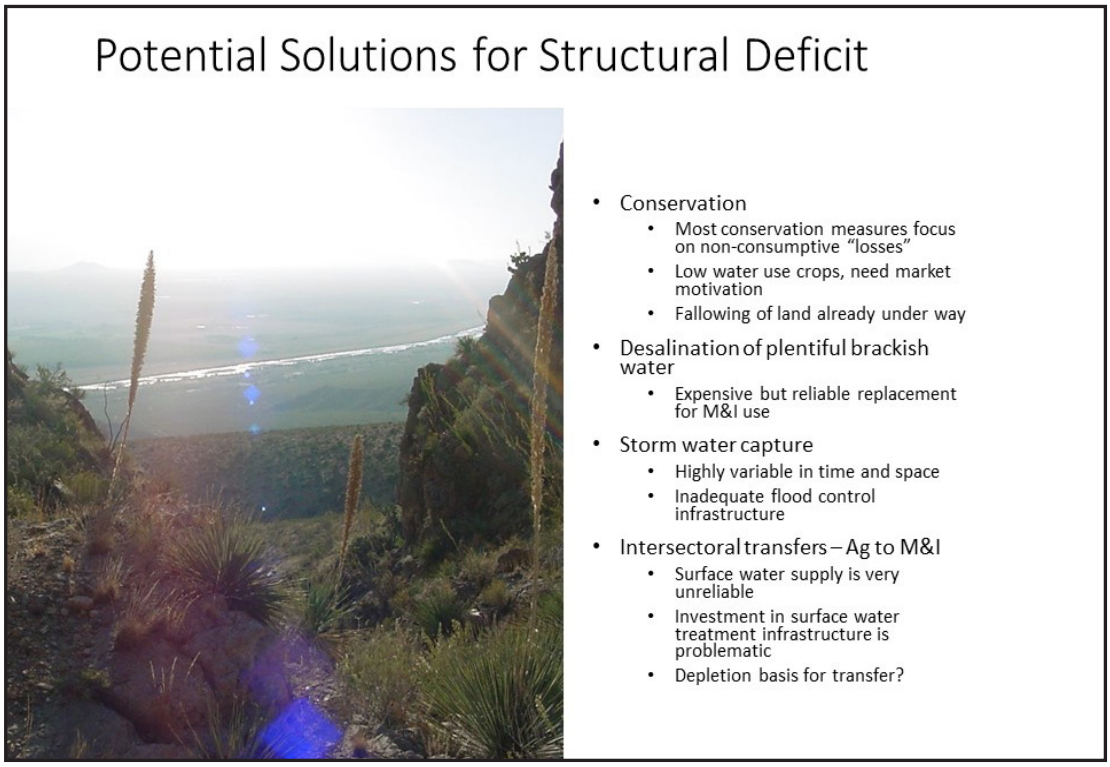

Figure 11. Potential solutions for structural deficit.