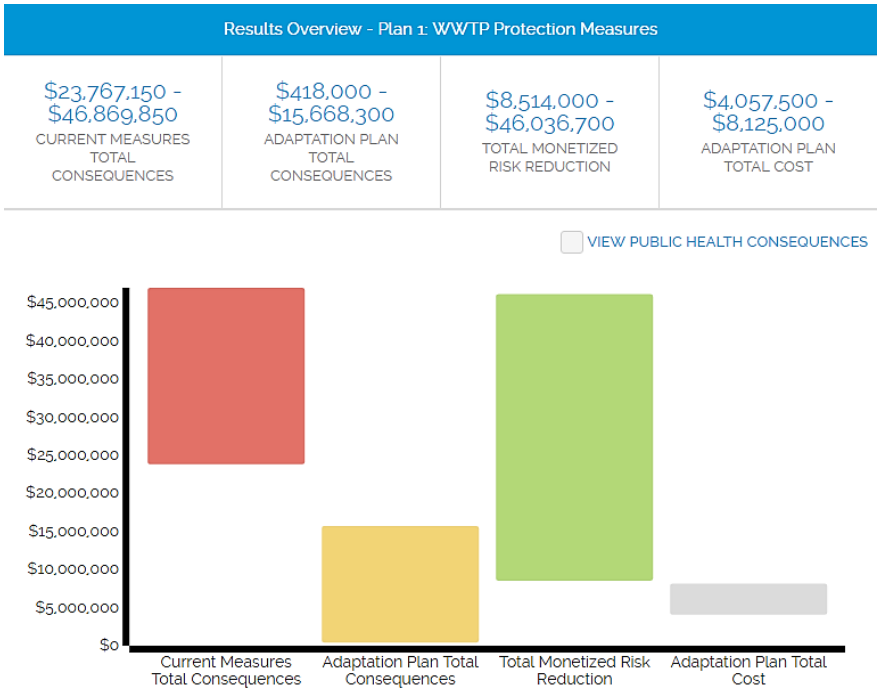
United States Environmental Protection Agency

EPA's CREAT: Decision Support Example

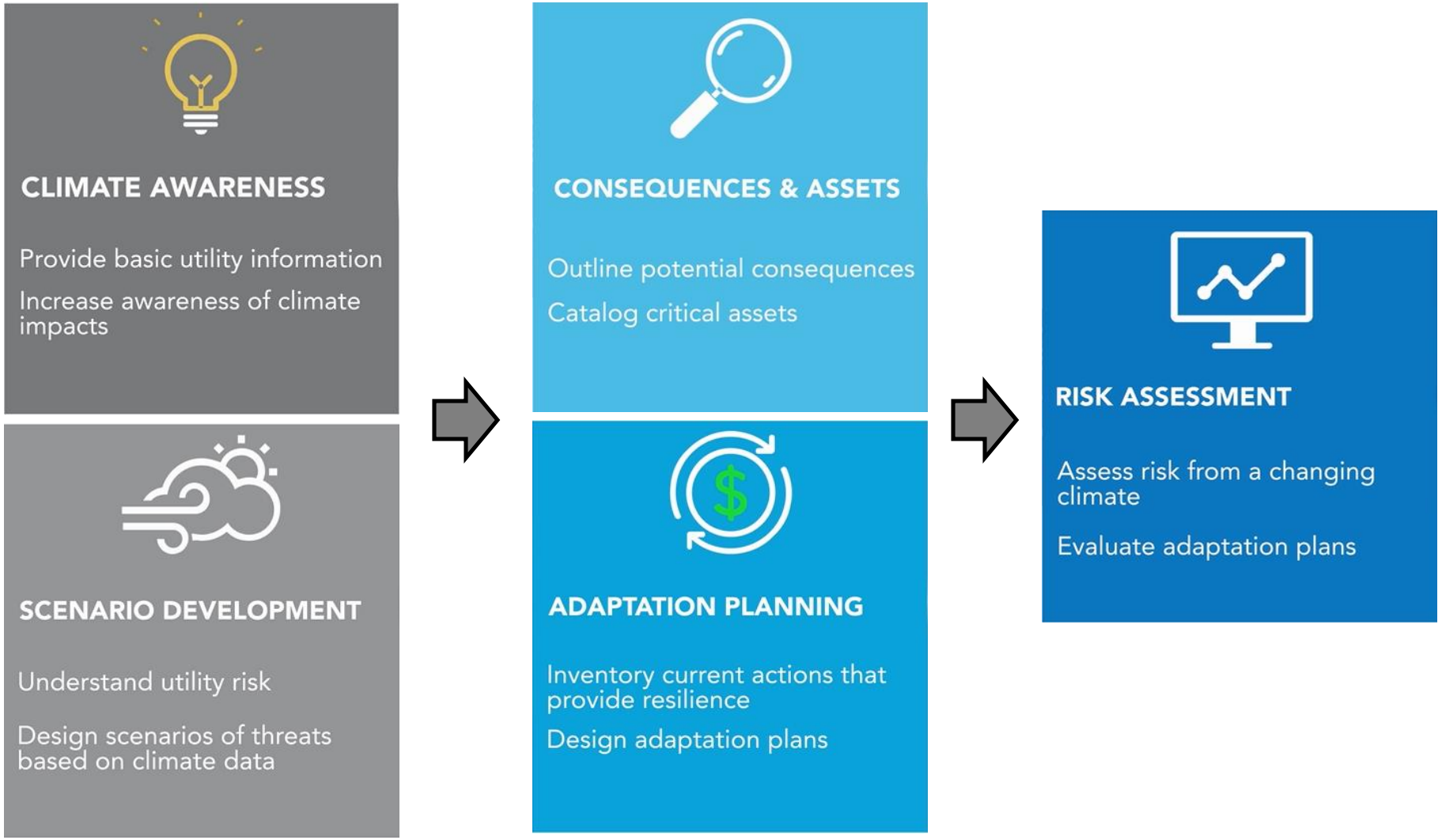
EPA's Creating Resilient Water Utilities (CRWU)

The CREAT Process

- **Web-based tool** for assessing risk of potential impacts
- **Module-based process** with clearly defined goals and reports
- Multiple scenarios provided to help **capture uncertainty**
- **Assessment of current resilience** will help inform adaptation planning
- Results help utilities compare **risk reduction** and **implementation costs**



Tool Resource - CREAT 3.0 Modules

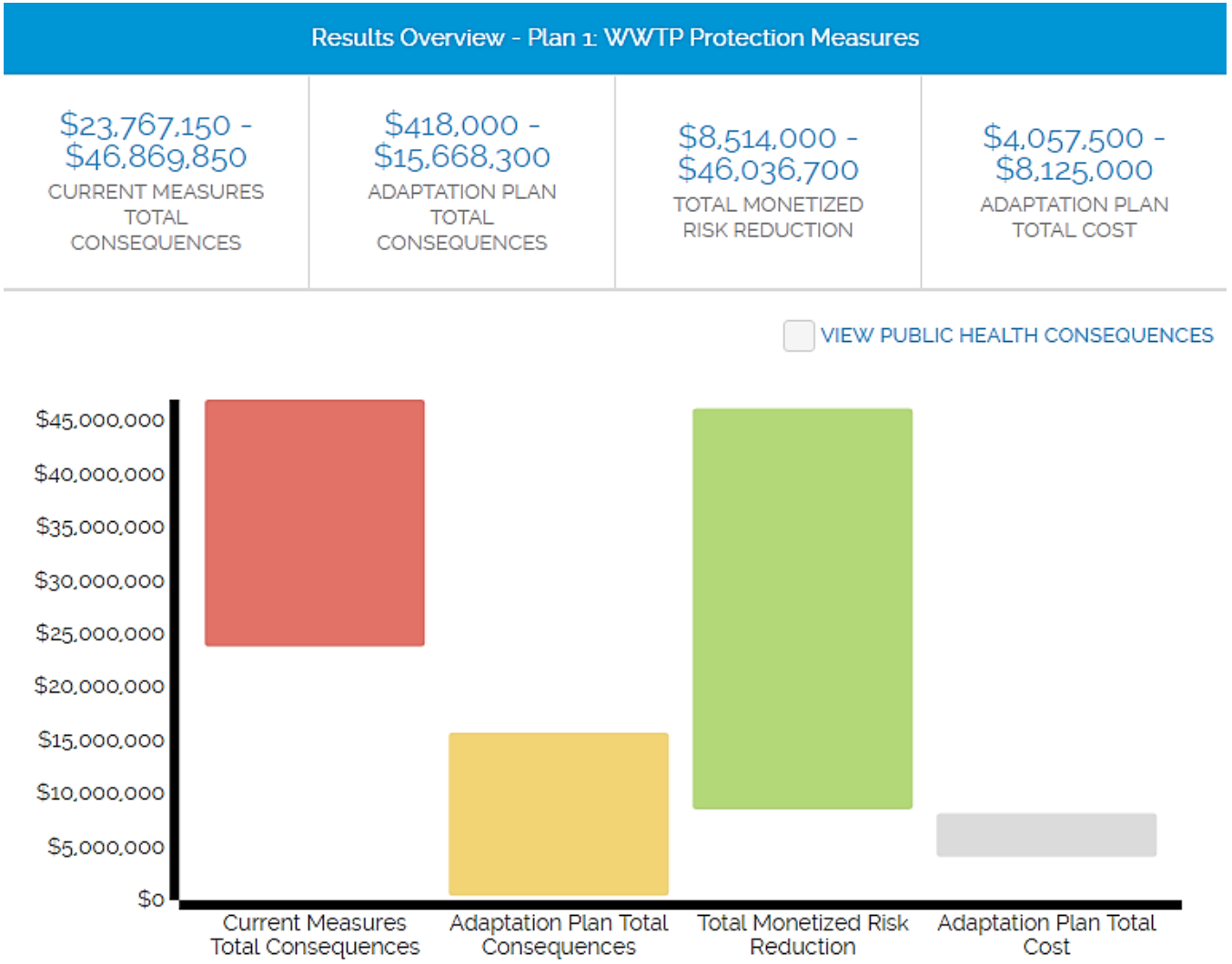


Economic Consequences

LEVELS	Utility Business Impacts
VERY HIGH	Long-term or significant loss of expected revenue or operating income
	$1,590,000+
HIGH	Seasonal or episodic compromise of expected revenue or operating income
	$1,062,000 - $1,590,000
MEDIUM	Minor and short-term reductions in expected revenue
	$531,000 - $1,062,000
LOW	Minimal potential for loss of revenue or operating income
	$0 - $531,000

- Ranges of values are provided for each category based on utility information
- Basis for default values are published sector survey data
- Values can be modified, additional categories can be considered
- Additional assessments of public health and regional economic consequences can be made

CREAT Outputs: Risk Results



Consider Other Economic Factors/Impacts

Contribute your risk assessment results to the Adaptation Case Study and Information Exchange Map to share your lessons learned with others. The map provides an opportunity for utilities to learn about climate change adaptation planning efforts from their peers across the United States.

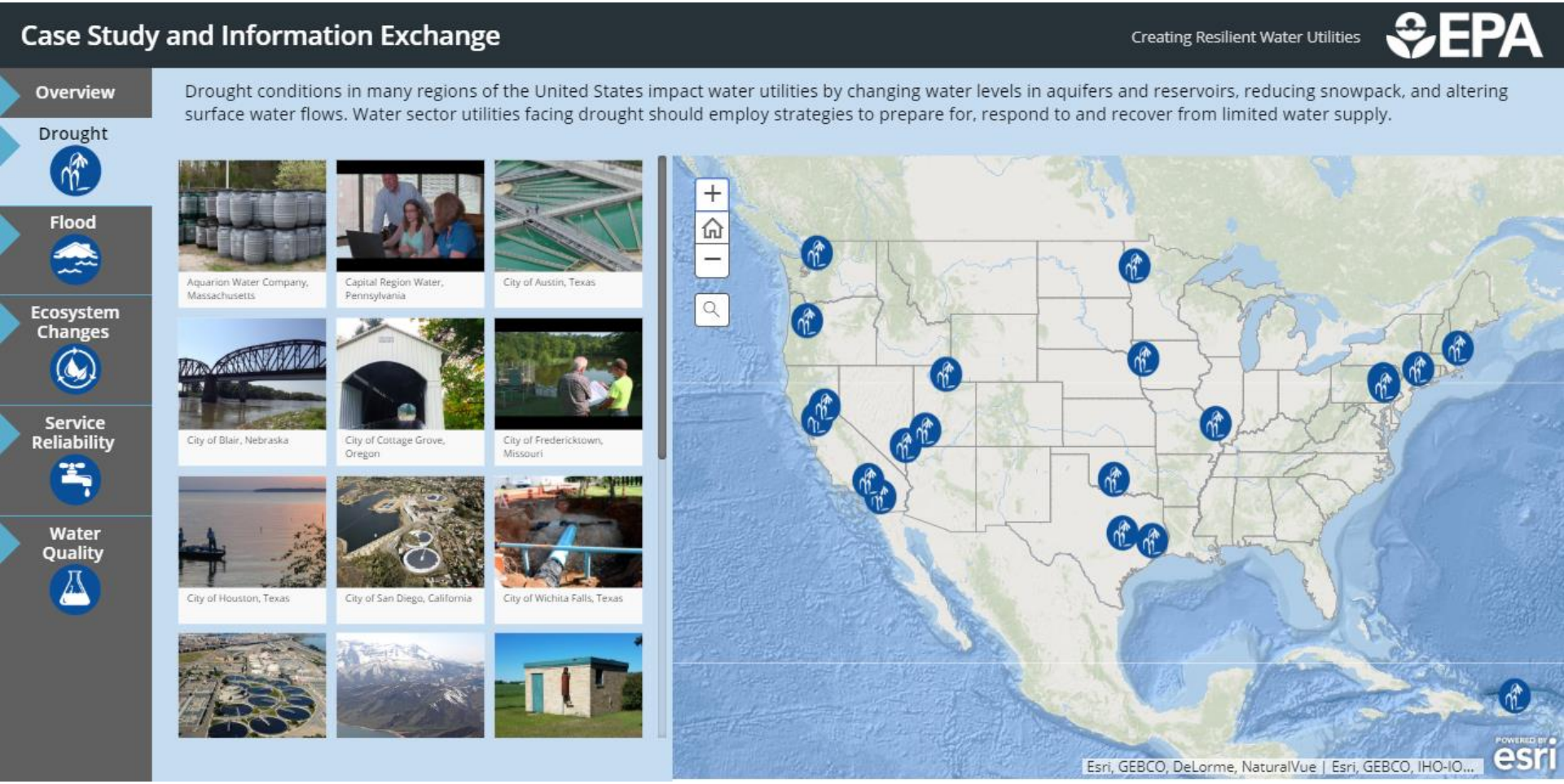
Add Custom Impact

PLAN REPORT	PLAN NAME	TOTAL COST	ENERGY IMPACTS	SOCIO-ECONOMIC IMPACTS	COMMUNITY PUBLIC HEALTH IMPACT	UTILITY BUSINESS IMPACTS	SOURCE/RECEIVING WATER IMPACTS
Download	Collection Priority	$25,000 - $100,000	Low	Neutral	Beneficial/Ene	Neutral	Beneficial/Ener
Download	System Protection	$275,000 - $1,100,000	Low	Medium	Beneficial/Ene	Beneficial/Er	Beneficial/Ener

Note: CREAT generates a plan report you can view and download after you complete at least one critical asset/threat pair assessment for each adaptation plan. If you are viewing this report on a tablet, it will display best using the Microsoft Word App.

Back | Export Data | Complete Analysis File

Case Studies



Example Case Studies – Wichita Falls (TX)

- City of Wichita Falls serves to approximately 150,000 customers in northern Texas, drawing water from area lakes
- Recent, prolonged droughts (1995-2000 and 2011-2015) have led the city to pursue measures to augment its water supply

TYPE	RESILIENCE STRATEGIES
Current Measures	Updating Water Conservation and Drought Plans to reflect lessons learned during the 2011–2015 drought
	Increasing media coverage of water conservation messages
	Implementing an Automated Meter Infrastructure (AMI) program to better account for the quantity and timing of water consumption
	Constructing an indirect potable reuse plant to supplement surface water supply and establishing non-potable reuse infrastructure for industry
Potential Resilience Strategies	Expanding the water main replacement program
	Planning and building a new surface water reservoir

Example Case Studies – Austin and Houston

City of Austin, Texas

Davis Water Treatment Plant

Austin Water (AW) provides wastewater, drinking water, and non-potable recycled/reclaimed water services to the city of Austin. AW's facilities include two main wastewater treatment plants, several smaller wastewater treatment facilities, a biosolids facility and three drinking water treatment plants that draw water from Lake Travis and Lake Austin. AW is concerned with several issues, including drought, changes in water quality and intense precipitation events.

Read more information

Utility type: Combined

Threats Addressed: Drought

Adaptive Measures Used: Water Conservation, Reclaimed Water Projects, Integrated Water Resource Planning

City of Houston, Texas

Lake Livingston

The city of Houston's Public Works and Engineering Department provides drinking water services for the greater Houston area. Historically, the city of Houston's drinking water has been sourced from both groundwater and surface water; however, due to local subsidence from groundwater extraction, surface water from three lakes – Lake Livingston, Lake Houston and Lake Conroe – now provides 80% of the area's water supply. Although the city may not be immediately threatened by water scarcity, the city wants to ensure that it is planning appropriately and anticipating potential changes in water demand and availability.

You will be hearing from these partners later today!

United States Environmental Protection Agency

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Visit us on the web and register for the CRWU newsletter at: www.epa.gov/crwu