

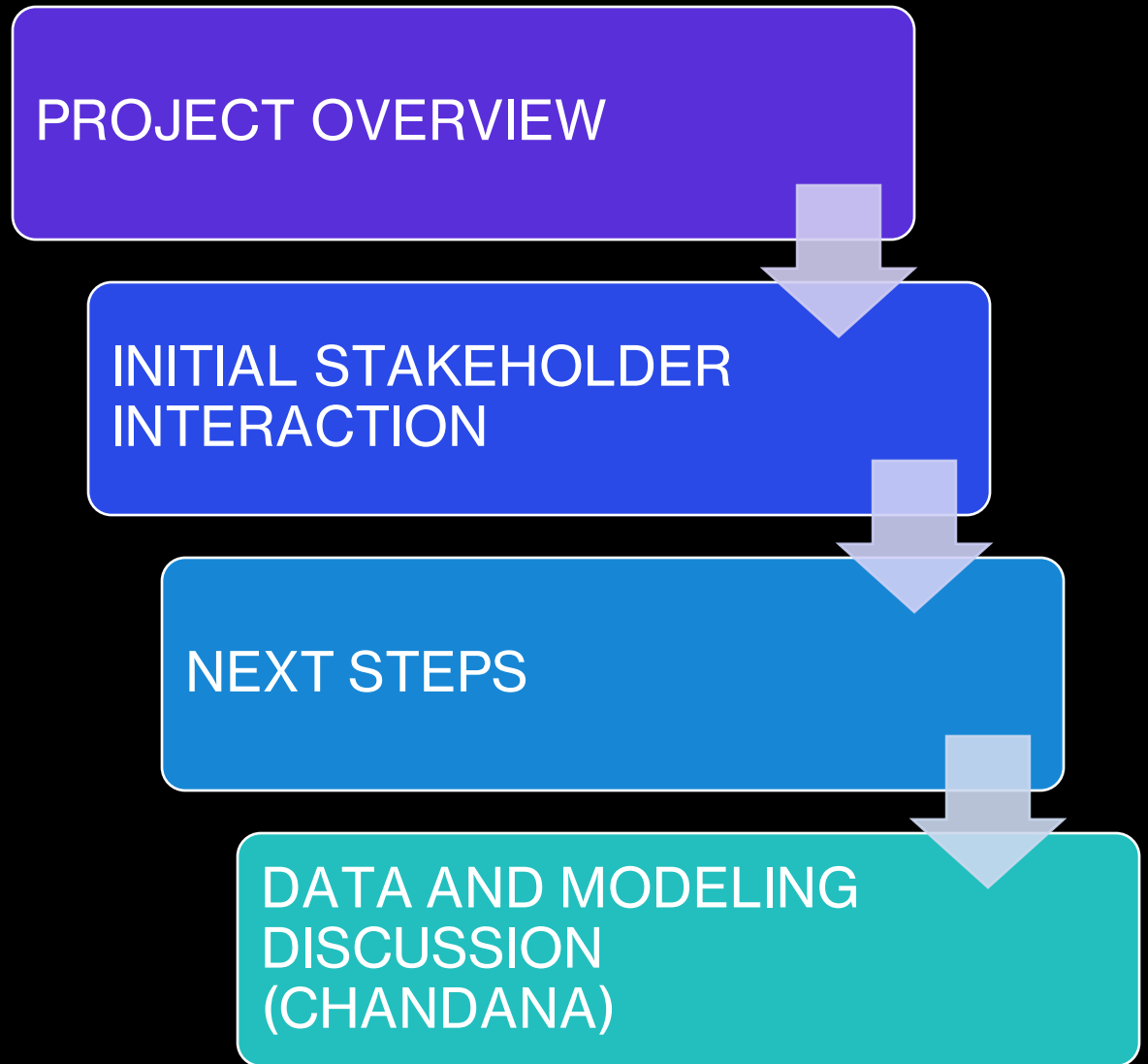
# Enhancing Hydrologic Forecasting in the Rio Grande Basin

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RIO GRANDE REGIONAL WATER PLANNING  
GROUP (RGRWPG) (REGION M) MEETING

May 15, 2024

# Outline

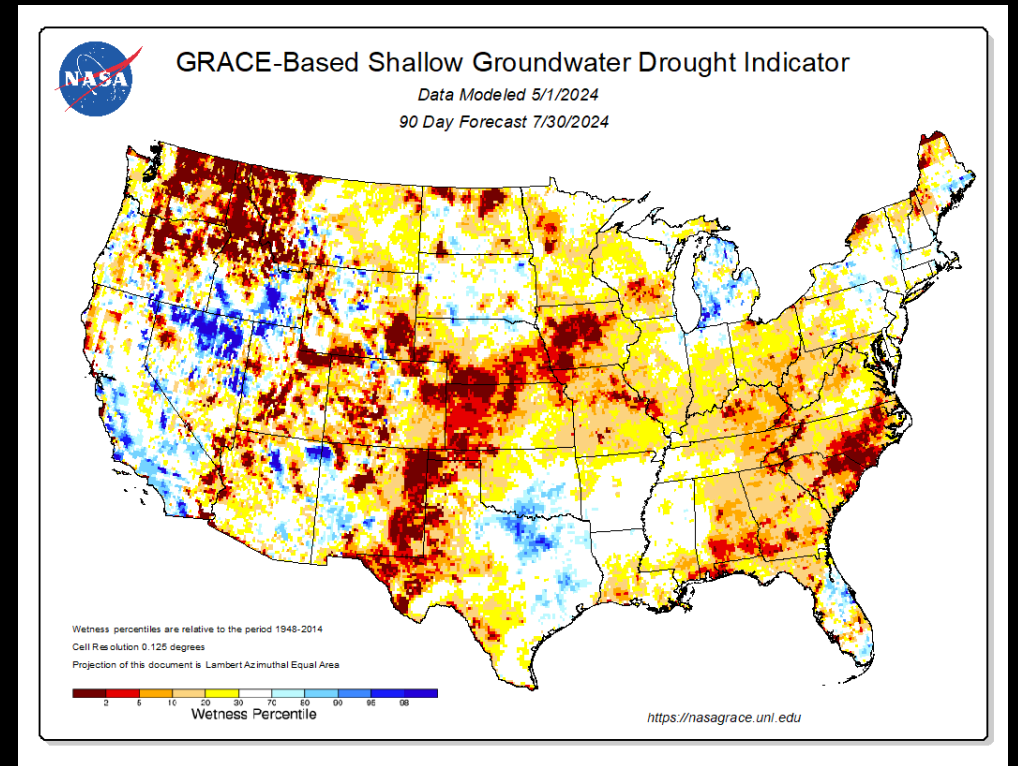




# Project Overview

## NASA DATA

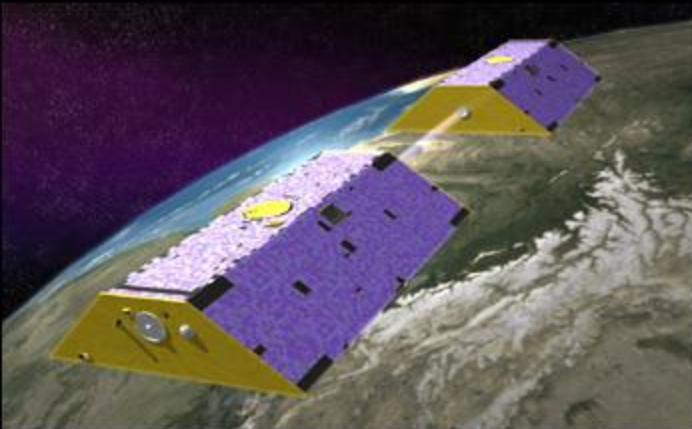
- Satellite Imagery (e.g., MODIS)
- Precipitation (e.g., IMERG)
- Soil Moisture (e.g., SMAP)
- Water Anomalies (e.g., GRACE)
- Stream Discharge, Width, and Water Surface Elevation (e.g., SWOT)
- Computer Model Outputs (e.g., NLDAS)
- Etc.



## NASA TECHNOLOGY

- Computer Models (e.g., LIS)
  - + Historic
  - + Real-time analysis
  - + Forecasting

What is their value to regional and local stakeholders?

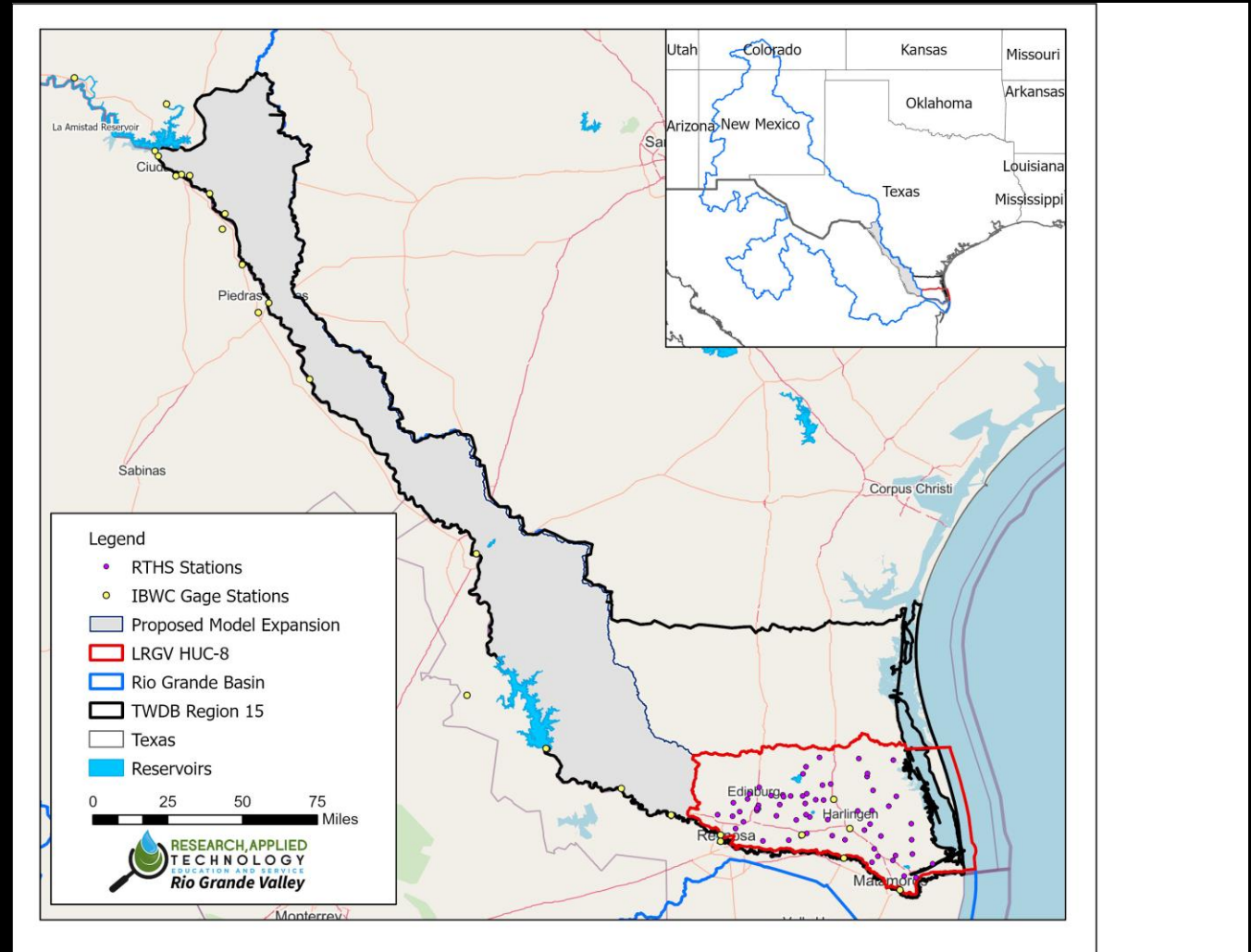


Water  
Cycle

*Hydrologic  
Cycle*

# Project Overview

- Use NASA data and technology to assist with Rio Grande Basin water supply forecasting
- Not focused on mainstem Rio Grande but water supplies and communities in Texas that are part of the Rio Grande basin
- Host workshops (2) with stakeholders and decision makers to understand data needs
- Build a prototype decision support tool that attempts to address data needs



# Initial Stakeholder Interaction

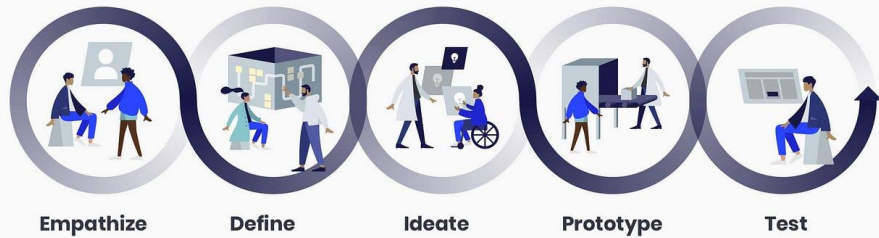
- April 17-18, 2024
- Del Rio, Texas
- RATES personnel met with:
  - + Del Rio officials
  - + United States International Boundary Water Commission (USIBWC) Hydrologists
  - + Texas Council on Environmental Quality (TCEQ)
  - + Others



- Initial takeaways
  - + IBWC working on model to forecast near term streamflow's with using historic data and accounting
  - + TCEQ employs a water master for the Rio Grande that acts as “air-traffic control” for water allocations

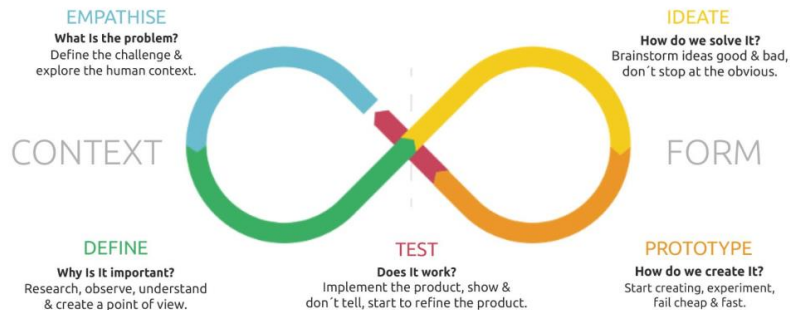


Introduction to  
Design Thinking



# Next Steps

## DESIGN THINKING A FRAMEWORK FOR INNOVATION



### Q1

- Continue stakeholder engagement process and model testing in preparation for Workshop #1
- Workshop #1 planning
- Workshop #1 will assess what the data needs are for the stakeholders in the region and initial model and dataset inventory will be presented

### Q2

- Host Workshop #1
- Begin to refine modeling, data, and decision support tool based upon Workshop #1 feedback

### Q2-Q7

- Modeling, data, and decision support tool refinement
- Continued informal engagement with stakeholders

### Q7-Q8

- Host Workshop #2 to present refined decision support tool powered with NASA data and technology
- Project wrap-up and reporting

# Thank you!

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Chief Science Officer

RATES

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