



Aquifer Storage and Recovery (ASR) Pilot and Program Management – Phase 1a

James Dwyer & Kristi Shaw - HDR

Water Forward Task Force | April 14, 2021



Scope Basis



Understand the candidate aquifer areas and implementation challenges



Consider integration of the ASR supply into the existing distribution system



Use proven decision tools to identify preferred project alternatives



Develop mindful outreach strategies to educate and engage the community

Task 4

- Initial storage zone screening
- Heat mapping of aquifer characteristics
- **Key outcome: potentially suitable ASR wellfield areas**

Task 5

- Integration point scoring using criteria
- **Key outcome: potentially suitable integration points**

Task 8

- Develop plan and budget for field testing
- **Key outcome: Exploratory Drilling & Testing Plan**

Task 1.
Project Management

Task 2.
AW and Consultant Team Chartering

Task 4.
Preliminary ASR Storage Zone Identification & Characterization

Task 5.
Preliminary ASR Integration Point Identification and Characterization

Task 6.
Preliminary Project Alternatives Development & Evaluation

Task 7.
Project Alternatives Revision & Re-evaluation

Task 8.
Exploratory Drilling & Testing Planning

Task 6

- Use suitable wellfield areas & integration points to develop project alternatives
- Score each alternative using project criteria informed by community input
- **Key outcome: scored project alternatives**

Task 7

- Project alternative revision as needed
- Final report
- **Key outcome: preferred project alternative(s)**

Task 3- Community Engagement and Education, including equity and affordability tasks

Overview of Phase 1a Project Approach



Task 2 –Team Chartering

- Goal: support clarity of mission and tenets of success, and project team alignment
- Steps:
 - Project initiation chartering
 - Follow-up chartering sessions to realign goals and objectives as needed, particularly as a result of community engagement



Task 3 – Community Engagement

Consultant Community Engagement Team:



Kristi Shaw, HDR
Technical ASR-
Communications
Liaison



**Carmen Schofield,
HDR**
Communications Lead



**Shuronda Robinson,
Adisa
Communications**
Advisor- ASR
Introduction and
Education Task Lead



Lynda Rife, Rifeline
Advisor- Outreach and
Preliminary Project
Alternatives Public
Engagement
Task Lead



Task 3 – Project Introduction, Engagement, & Education

Engagement and Education Plan

- ◆ Project background, goals and objectives
- ◆ Identify roles and responsibilities within project team
- ◆ Identify project milestones and schedules
- ◆ Identify communities and stakeholders, including governmental entities, regulatory bodies, and public interest groups
- ◆ Outline Phase 1A engagement strategies

Introduction and Education Campaign

- ◆ Introduce the project to the community
- ◆ Demonstrate how ASR fits into Water Forward
- ◆ Engage stakeholders, including customers, elected officials, partner agencies, and the media
- ◆ Develop initial educational campaign and materials for ASR introduction and education



Task 3 – Equity & Affordability (E&A)

Roadmap

- Outline goals, criteria, and metrics that define E&A with an AW and ASR lens
- Conduct research on efforts undertaken by similar municipalities
- Gather community perspective and feedback through community meetings
- Develop final Roadmap to establish best practices and provide E&A strategy

Equity and Affordability Tool

- Evaluate project alternatives and implementation approaches through an E&A lens
- Identify E&A challenges associated with each project alternative and potential strategies to address them
- Identify criteria for an iterative evaluation process of project alternatives

Task 6.
Preliminary Project
Alternatives Development
and Evaluation

Task 7.
Project Alternatives
Revision and Re-
evaluation, as needed



Task 3 – Community feedback + evaluation criteria

Present draft criteria for evaluation of project alternatives.

Gather community input through collaborative workshops and other engagement tools.

Task 6.2
Preliminary Project
Alternatives Development
and Evaluation



**Share preliminary Task 6
project criteria and
weightings**

Collect input

Task 6.11
Preliminary Project
Alternatives Development
and Evaluation



**Consider and
incorporate input**
**Share refined project
criteria and weightings**
Collect additional input

Task 7.1
Project Alternatives Revision
and Re-evaluation



**Summarize input
provided on refined
criteria**

**Consider and
incorporate input**

Task 7.7
Project Alternatives Revision
and Re-evaluation

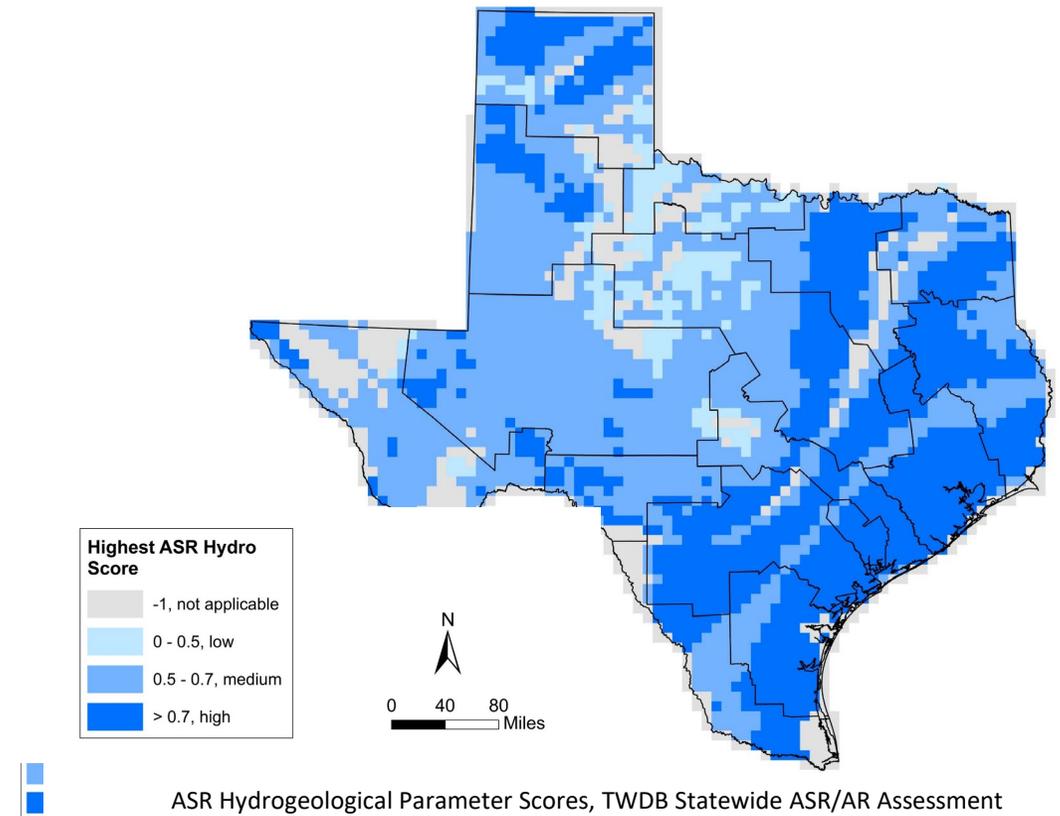


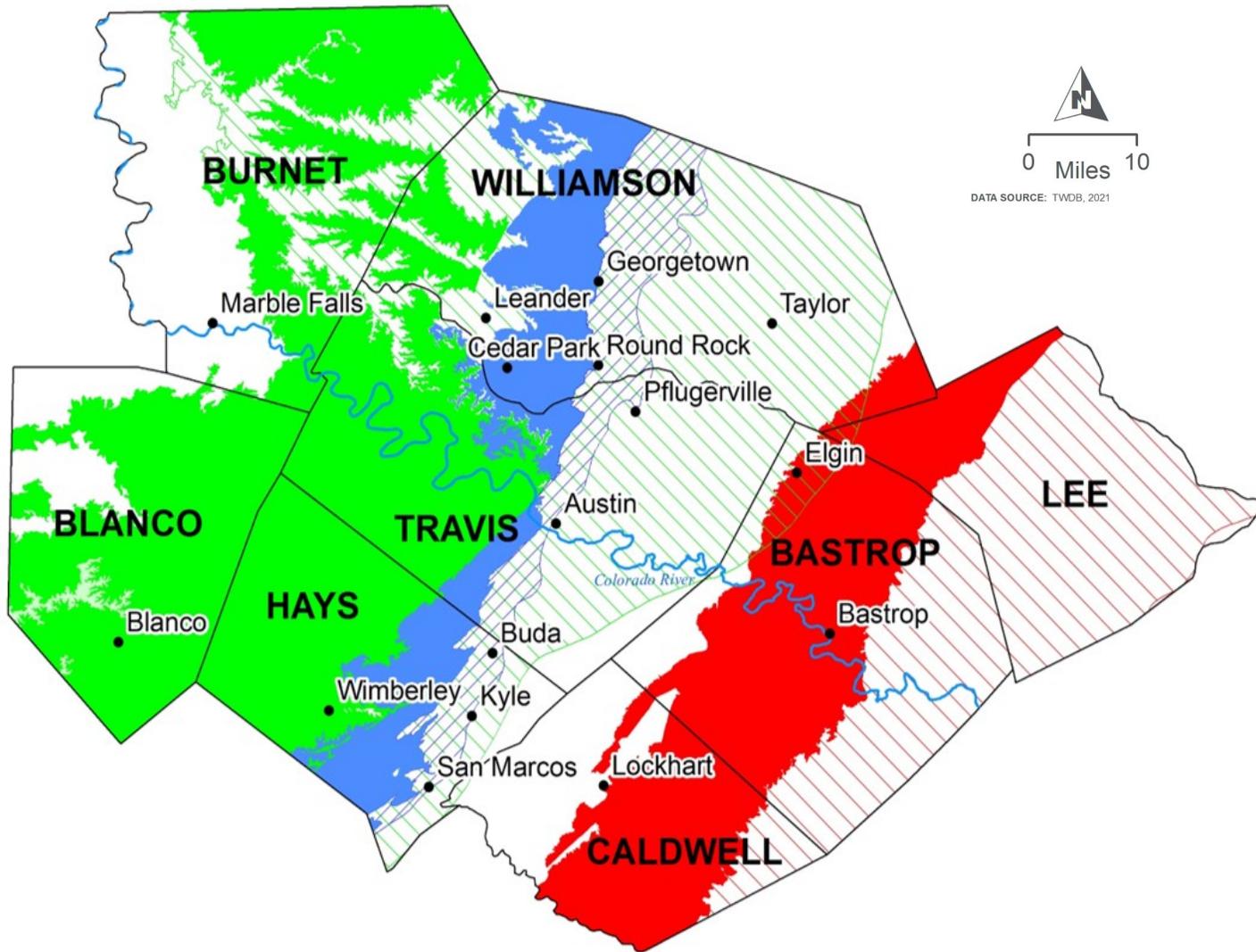
**Present final findings
and next steps**
**Final community
touchpoint of Phase 1A
program**



Task 4 - Preliminary ASR Storage Zone ID and Characterization

- ◆ Goal: Screen aquifer units in Travis & surrounding counties to identify potential ASR storage zones (SZs)
- ◆ Steps:
 - Define ASR wellfield performance objectives
 - Perform initial storage zone screening to determine which SZ are scored
 - Score SZs for aquifer and wellfield criteria
 - Detailed storage zone criteria mapping



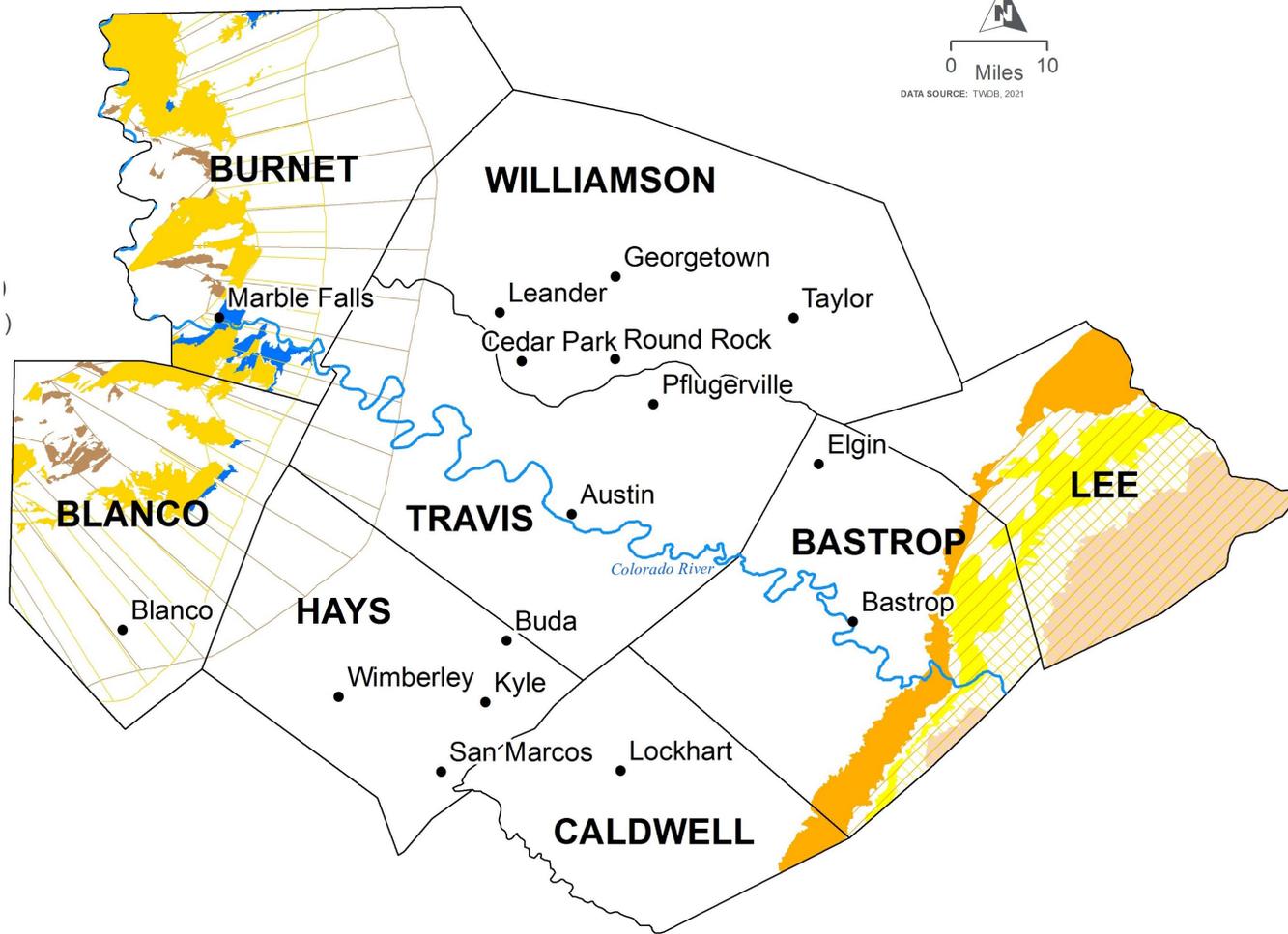


County/Aquifer Combinations for Initial Screening: Major Aquifers

LEGEND

- Major Cities
- Rivers
- Carrizo - Wilcox (outcrop)
- ▨ Carrizo - Wilcox (subcrop)
- Edwards - Trinity Plateau (outcrop)
- ▨ Edwards BFZ (outcrop)
- ▨ Edwards BFZ (subcrop)
- Trinity (outcrop)
- ▨ Trinity (subcrop)





LEGEND

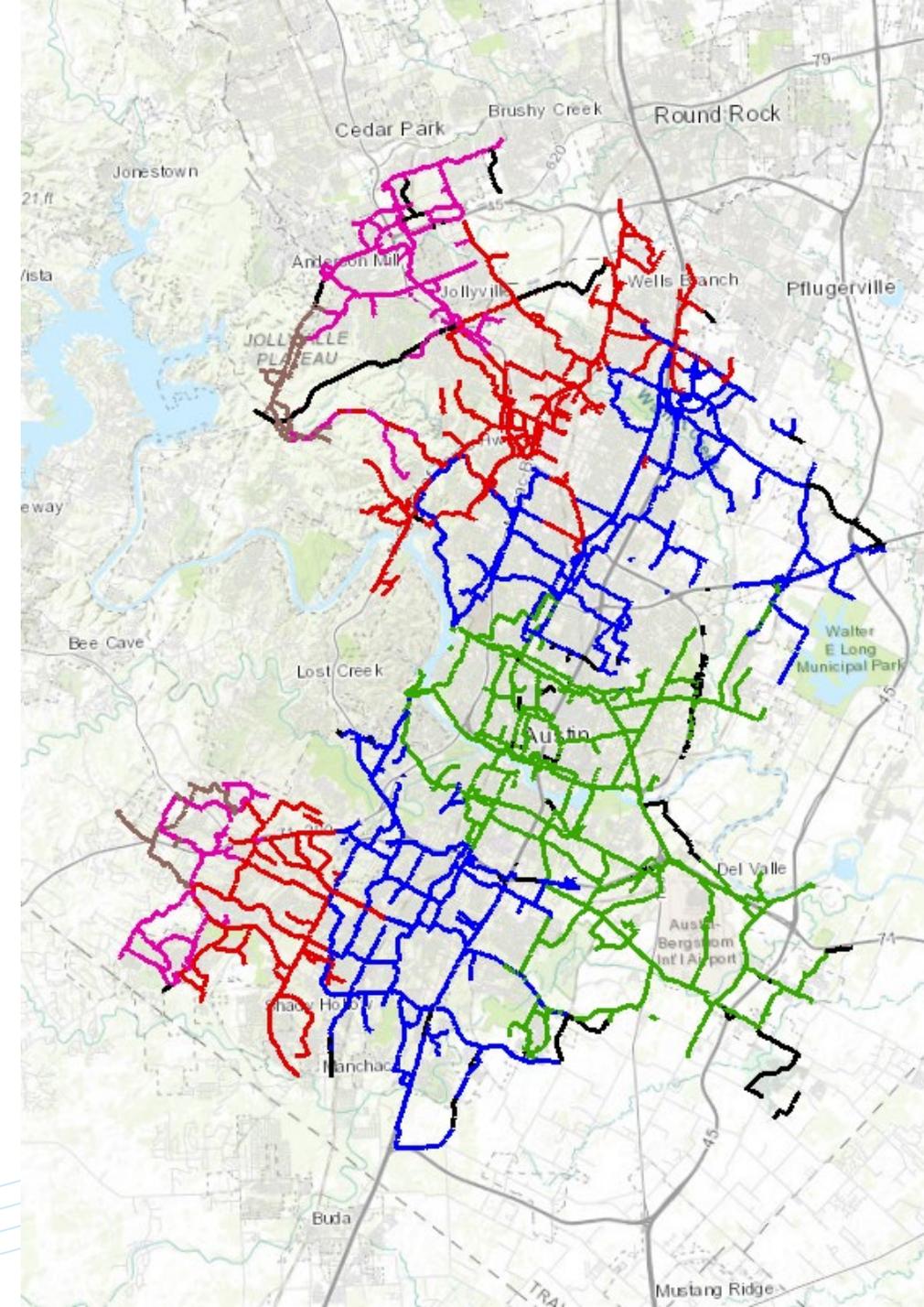
- Major Cities
- Rivers
- Yegua Jackson
- Sparta (outcrop)
- ▨ Sparta (subcrop)
- Queen City (outcrop)
- ▨ Queen City (subcrop)
- Marble Falls
- Ellenburger - San Saba (outcrop)
- ▨ Ellenburger - San Saba (subcrop)
- Hickory (outcrop)
- ▨ Hickory (subcrop)

County/ Aquifer Combinations for Initial Screening: Minor Aquifers



Task 5 - Preliminary ASR Integration Point ID & Characterization

- Goal: Identify and evaluate potential ASR integration sites
 - Evaluate normal and drought conditions
 - Consider future supply availability and demands
- Steps:
 - Define integration point objectives and needs
 - Nodal needs and availability modeling
 - Integration point identification and evaluation



Task 6 - Prelim Project Alternatives Development & Evaluation

- ◆ Goal: Develop & evaluate ASR project alternatives
 - Alternatives combine potentially suitable sites for ASR (Task 4) and integration options (Task 5)
 - Criteria & weighting will be informed by community engagement and equity work
- ◆ Steps:
 - Project alternative criteria & weighting
 - Conceptual designs and cost estimates for identified project alternatives



Task 6 - Prelim Project Alternatives Development & Evaluation (continued)

- Major element of Task 6 is engaging the community on what evaluation criteria are used
 - Seek community input on evaluation criteria and weightings
 - Refine criteria and weighting, as needed based on community input
 - Perform project alternative scoring with refined criteria and weighting



Task 7 – Project Alternatives Revision and Re-evaluation

- ◆ Goal: Project alternatives from Task 6 will be revised based on community input and preferred alternative(s) will be identified
- ◆ Steps:
 - Community engagement on scored project alternatives
 - Project alternatives revision
 - Identification of preferred project alternative(s)
 - Phase 1a ASR report

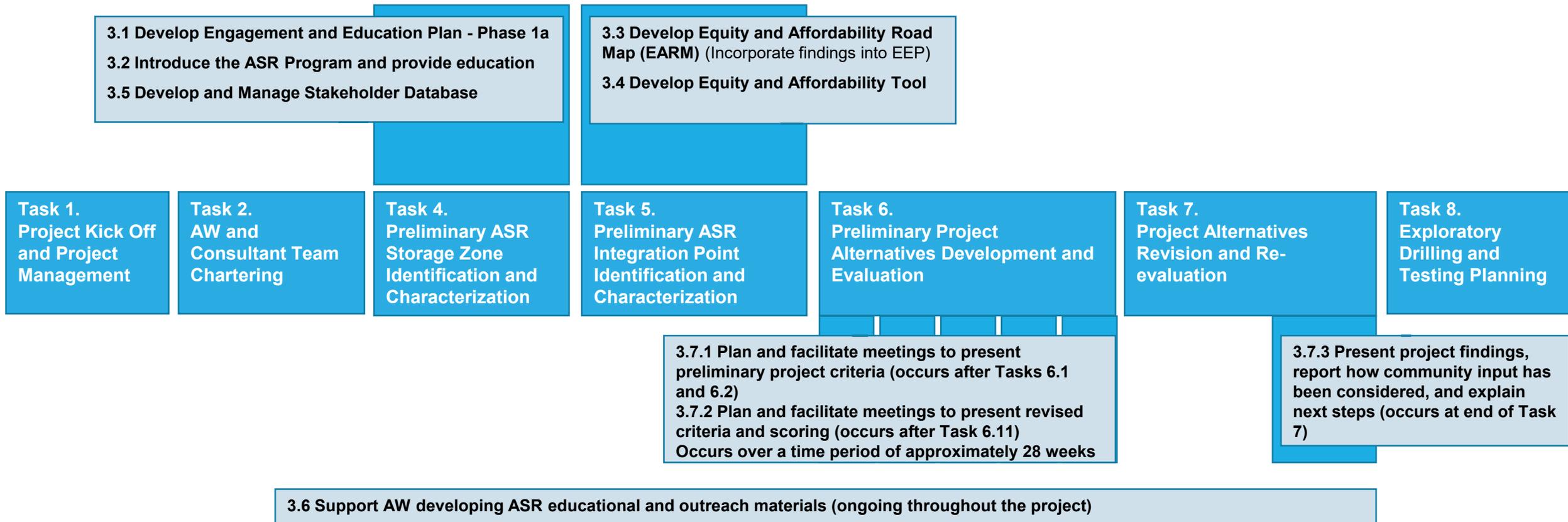


Task 8 - Exploratory Testing Planning



- Goal: Develop testing plan to address uncertainties and key assumptions in Phase 1a ASR evaluation
- Steps:
 - Exploratory Drilling & Testing work plan
 - Will include estimated costs for field testing
 - Lessons learned workshop

Overall Phase 1A ASR Pilot and Program Management Project Schedule



Questions?

