

Southwest Regional Partnership on Carbon Sequestration

Phase II: Sequestration Validation Tests

NETL Annual Partnerships Review

October 3 - 4, 2006

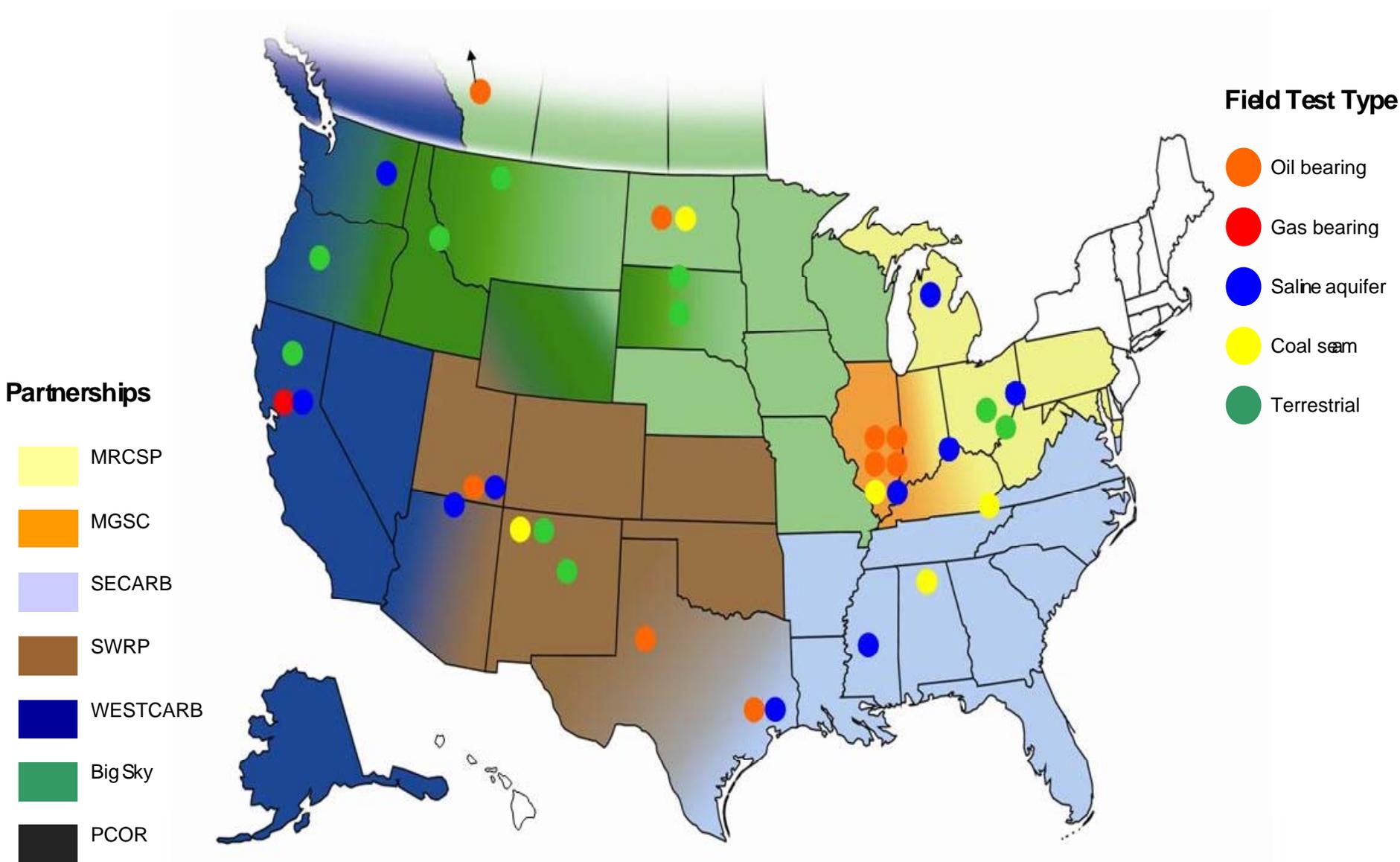
Pittsburgh, PA



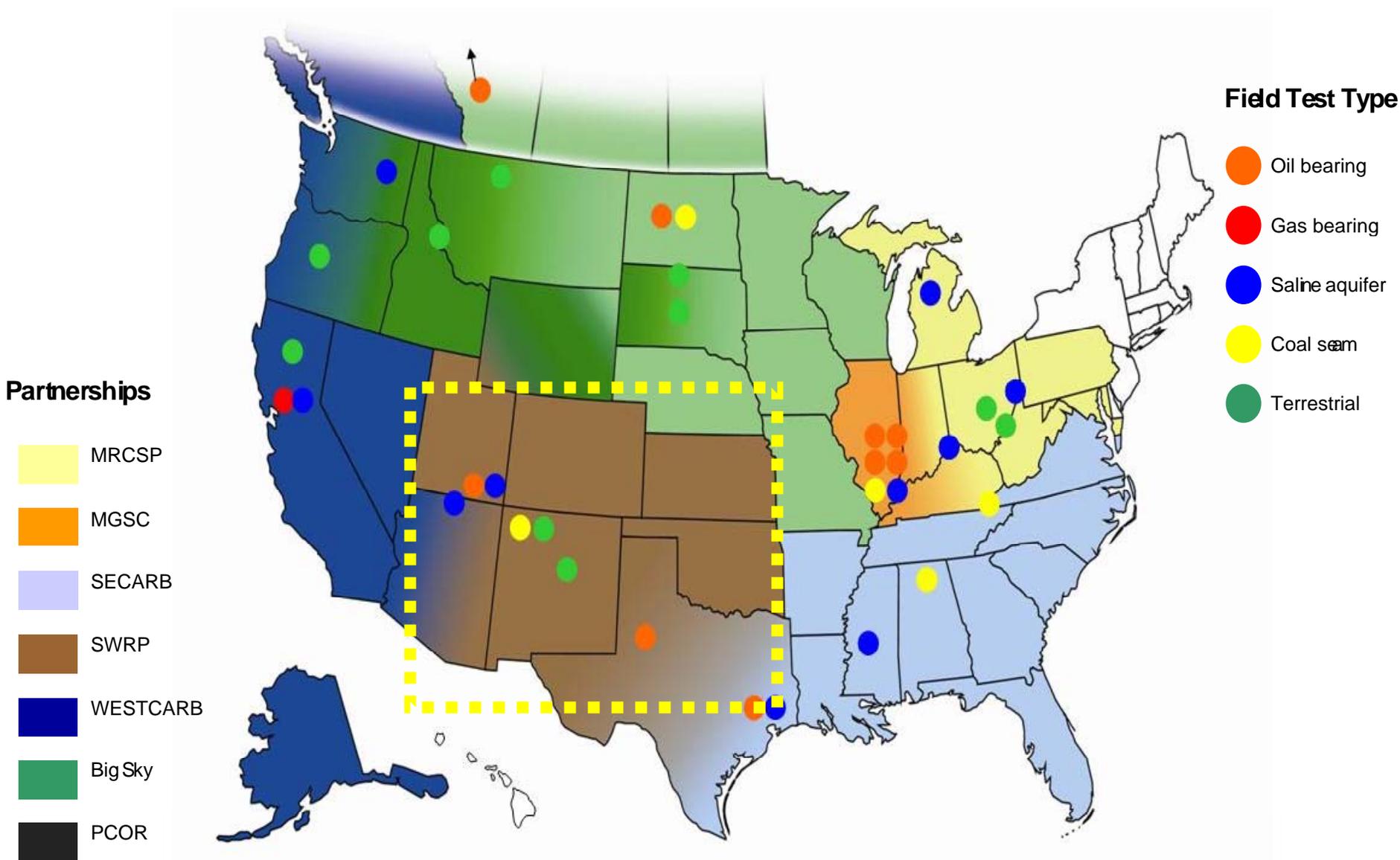
Brian J. McPherson
New Mexico Tech



National Portfolio



Southwest Portfolio



States in the Southwest Region

Region Covered:

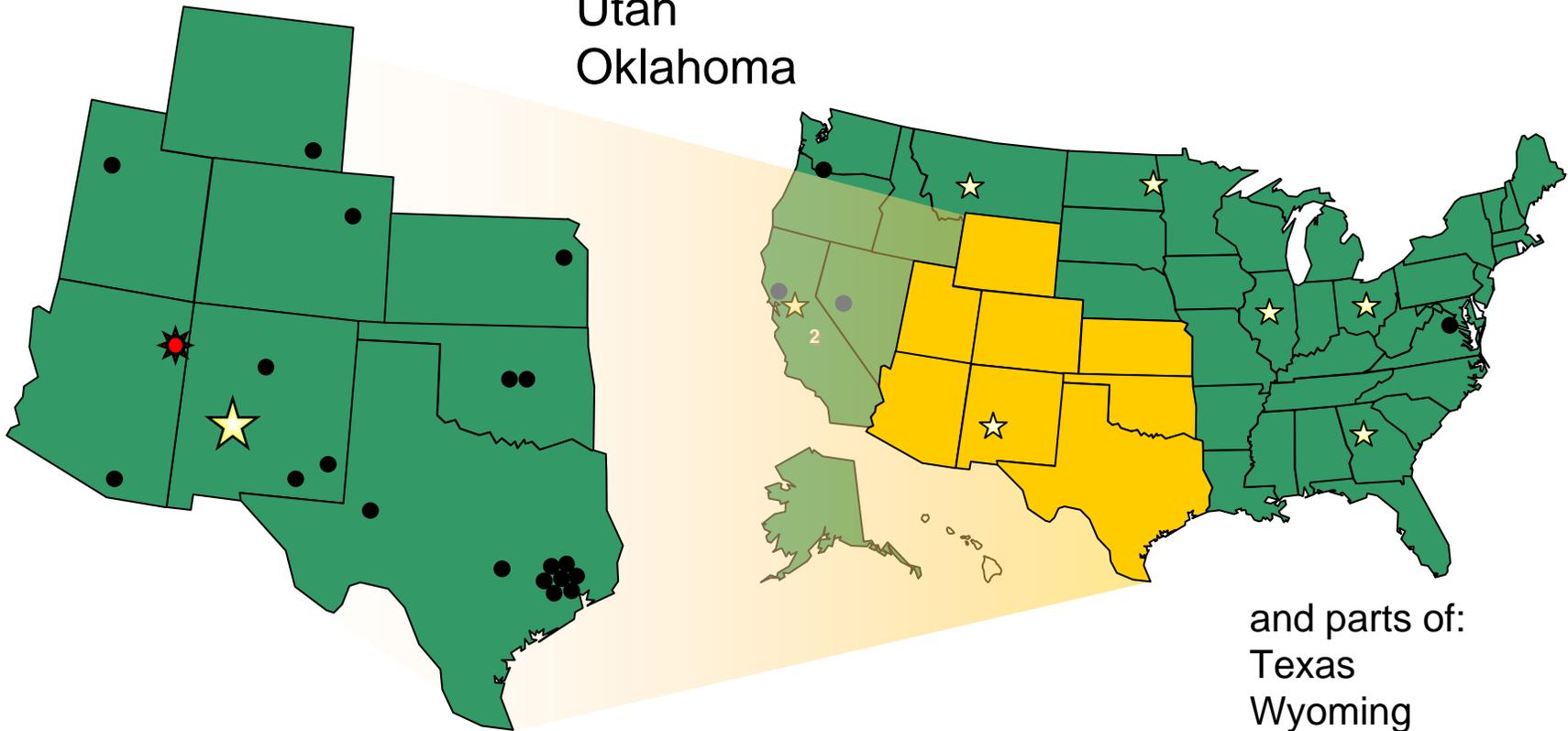
New Mexico

Colorado

Arizona

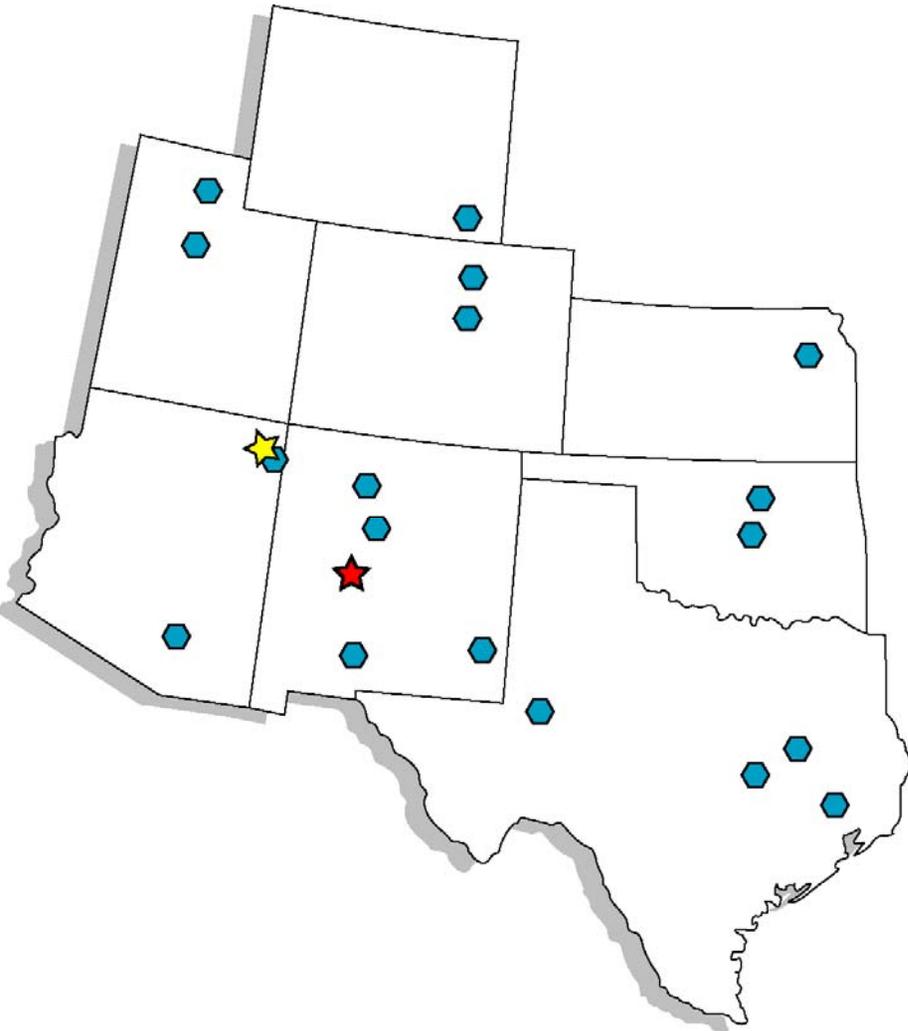
Utah

Oklahoma



and parts of:
Texas
Wyoming
Nevada
Kansas

The Southwest Carbon Sequestration Partnership



In all partner states:

- major universities
- geologic survey
- other state agencies
- lead organization: NMT

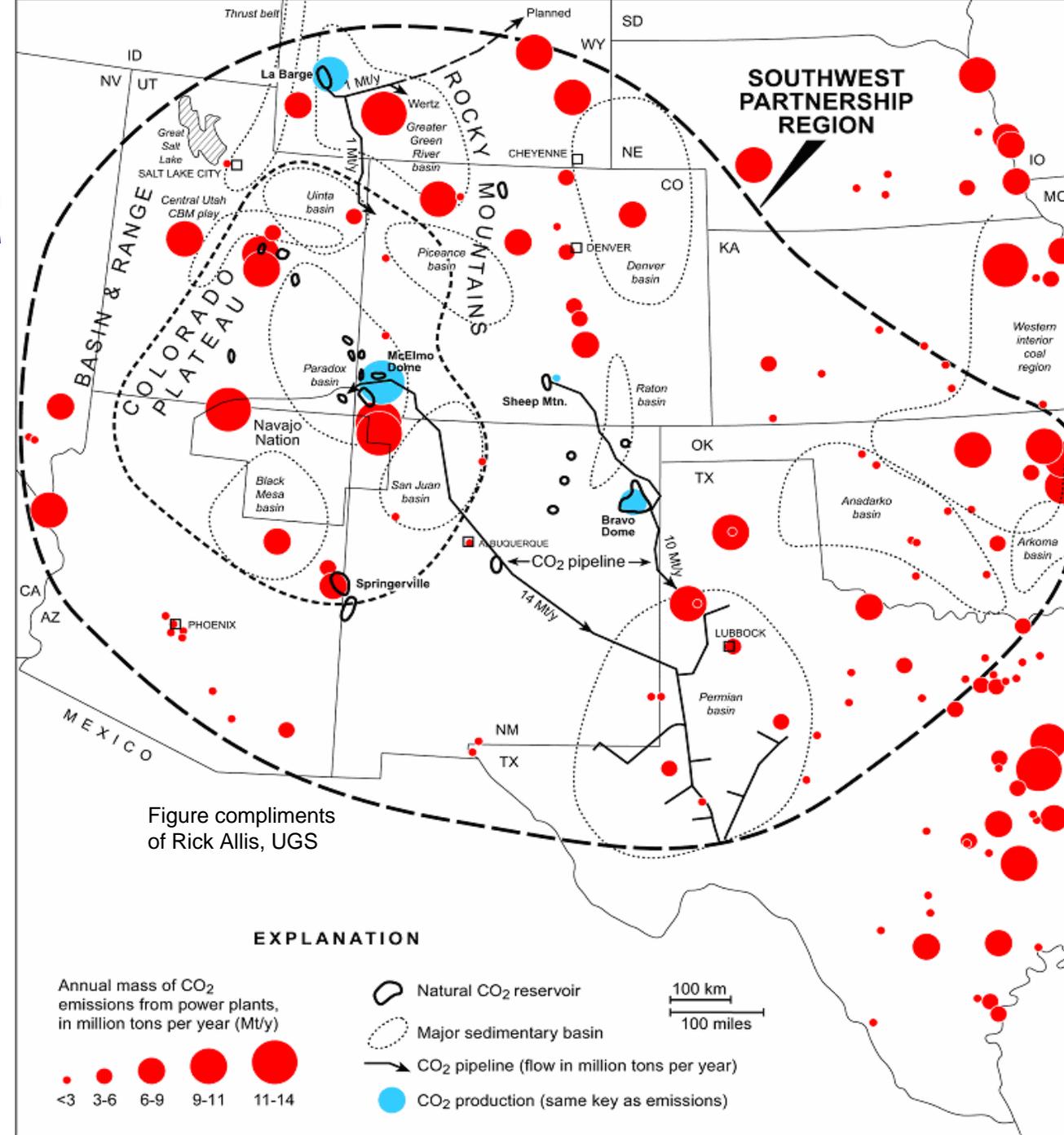
as well as

- Western Governors Association
- five major utilities
- seven energy companies
- three federal agencies
- the Navajo Nation
- many other critical partners

Southwest Sources

- electrical power plants
- cement & other plants
- urban centers
- non-point sources

Total regional point source emissions
 $\sim 10^8$ t/yr.



Southwest Major Sinks

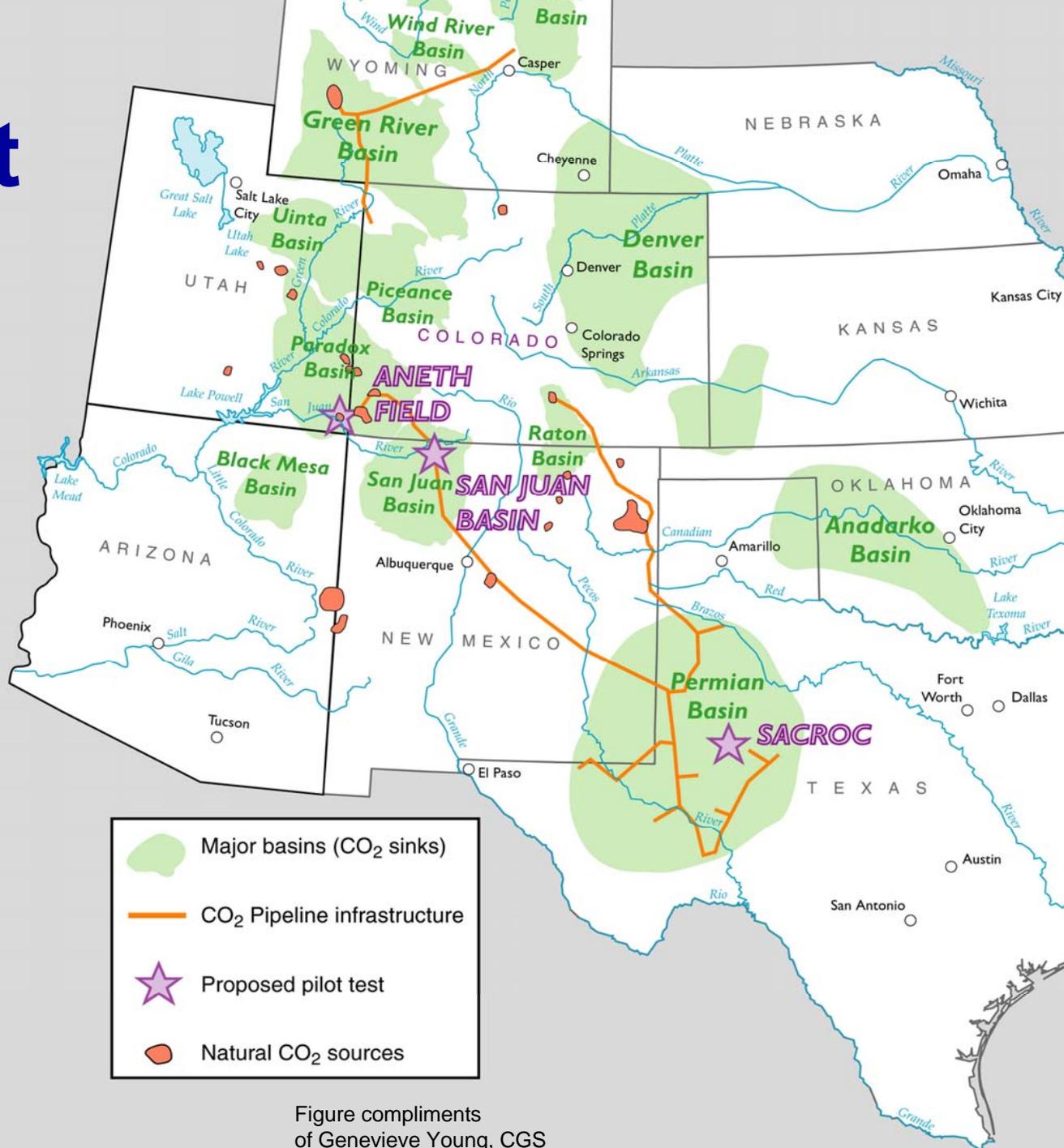
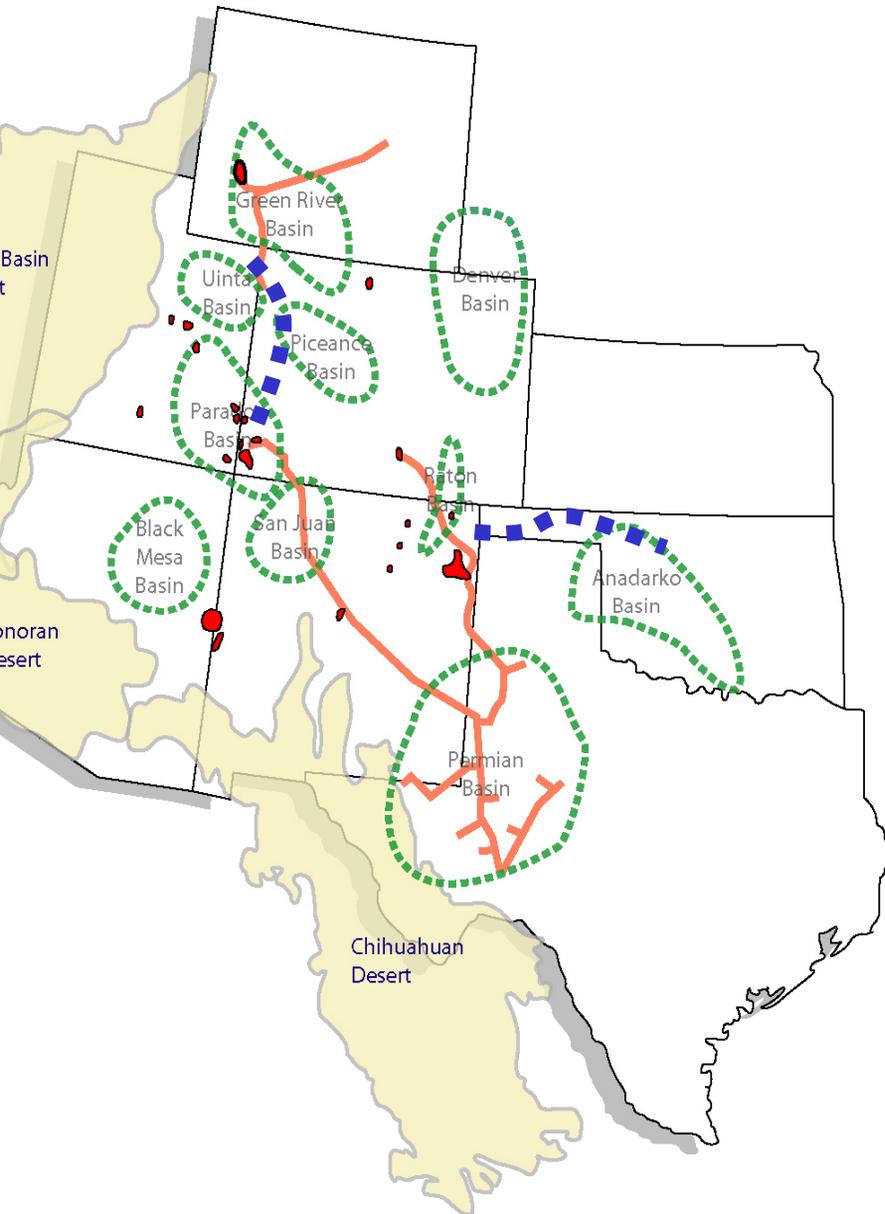


Figure compliments
of Genevieve Young, CGS

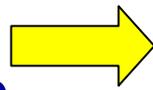
Phase I Task: Link Sources to Sinks



Phase I Primary Tasks:

- Characterize region's sources and sinks
- Identify best options by tying sources to sinks
- Outcome: In Southwest, "first opportunities" lie along existing CO₂ pipelines

Regional
Characterization



Pilot
Demos

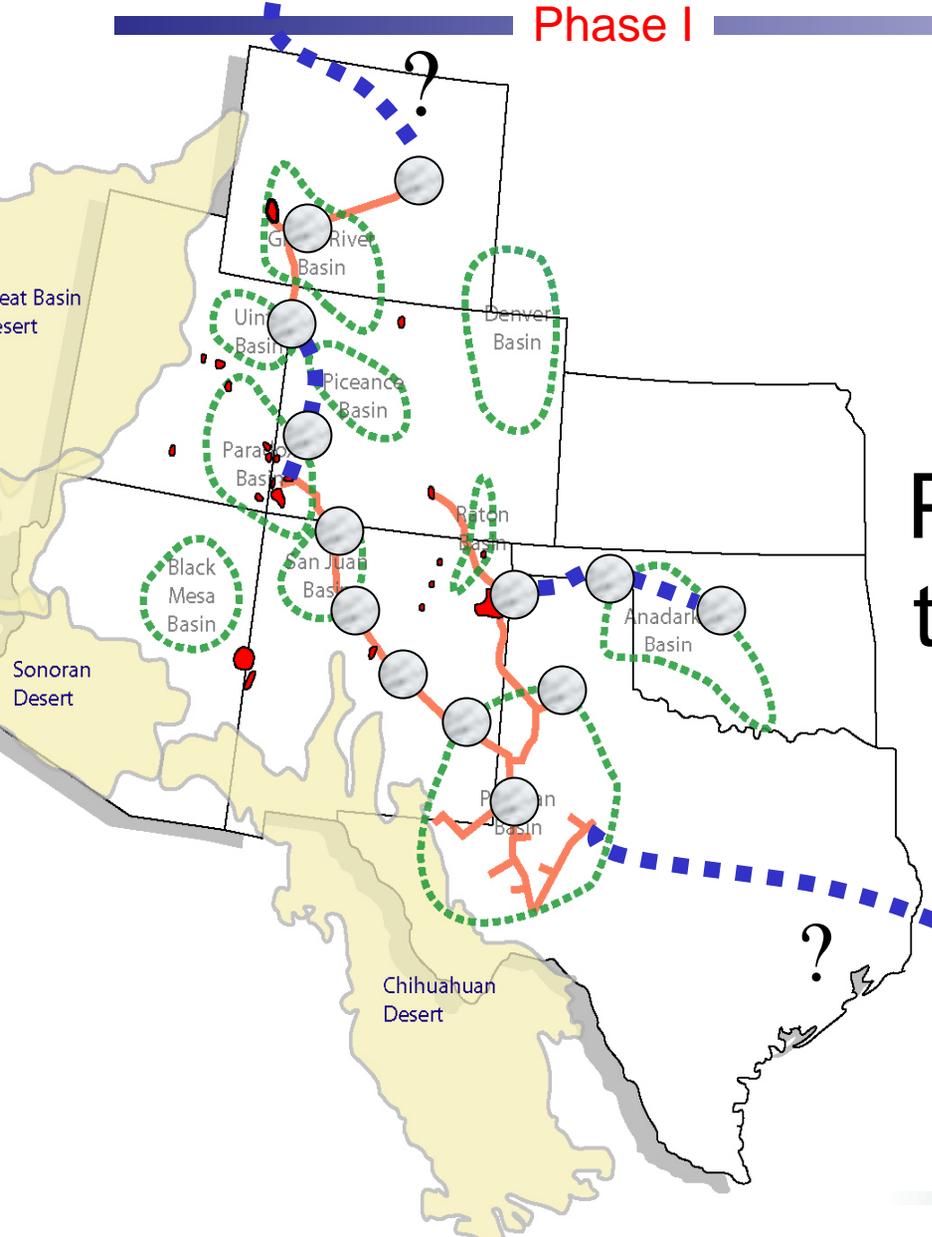


Full-Scale
Deployment

Phase I

Phase II

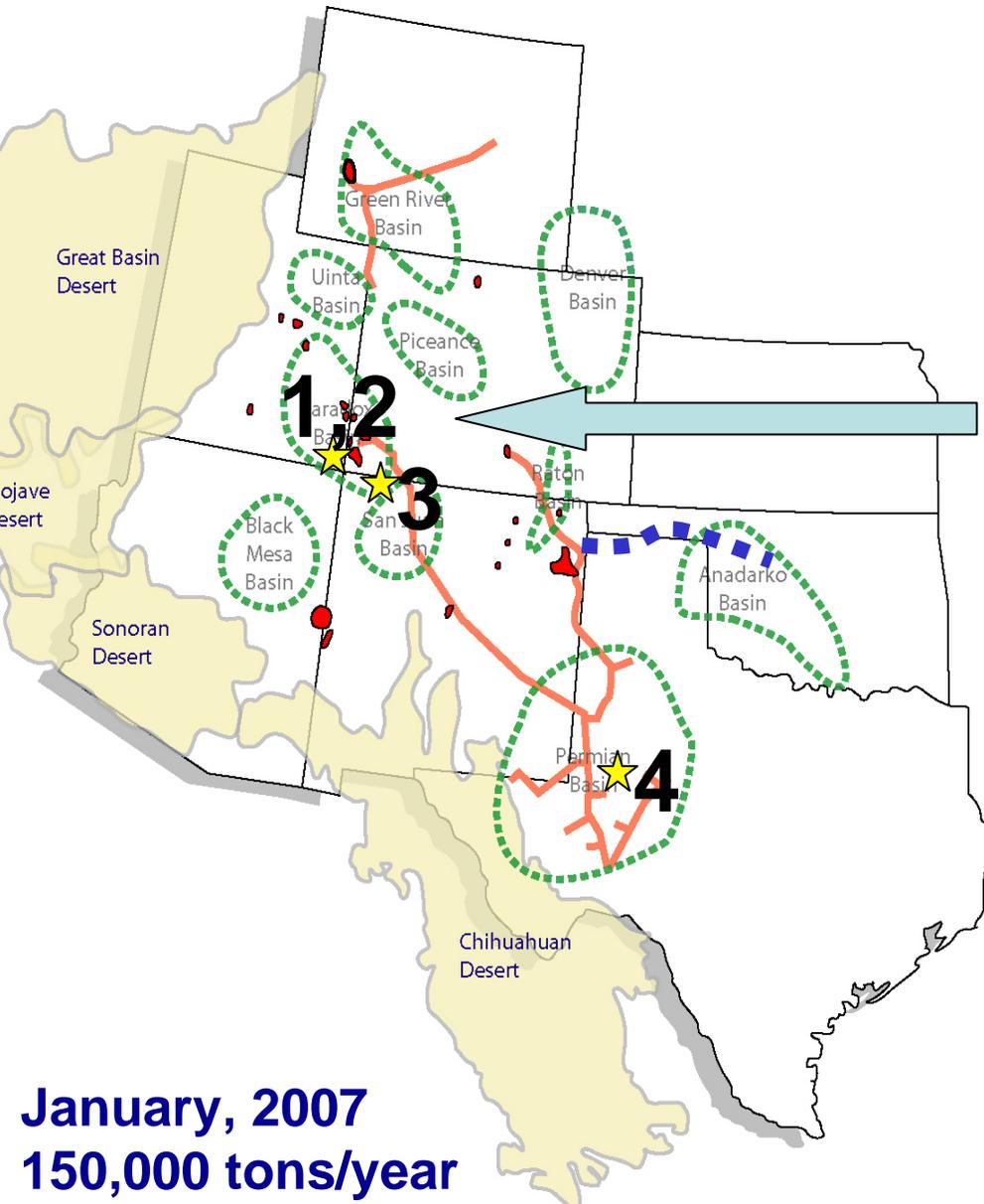
Beyond Phase II



Phase II Concept:
“String of Pearls”

Pilot demonstrations will test short-term strategy:
sequester along pipelines

Project Portfolio



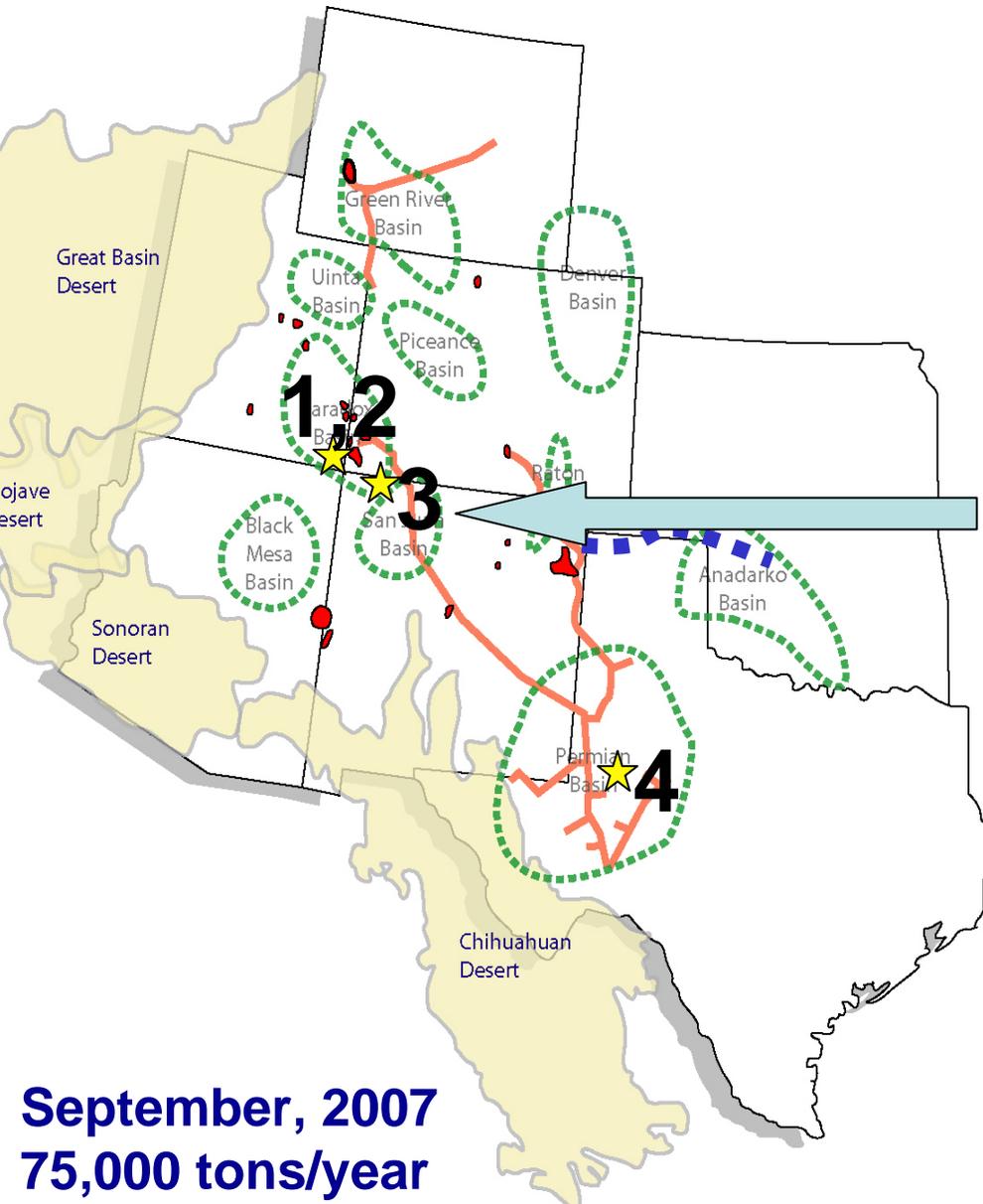
Four of over 100 geologic options were selected as the most promising opportunities for evaluation:

- (1) combined enhanced oil recovery and**
- (2) deep brine reservoir sequestration testing, Paradox Basin, Utah**

(Aug 2007)

January, 2007
150,000 tons/year

Project Portfolio

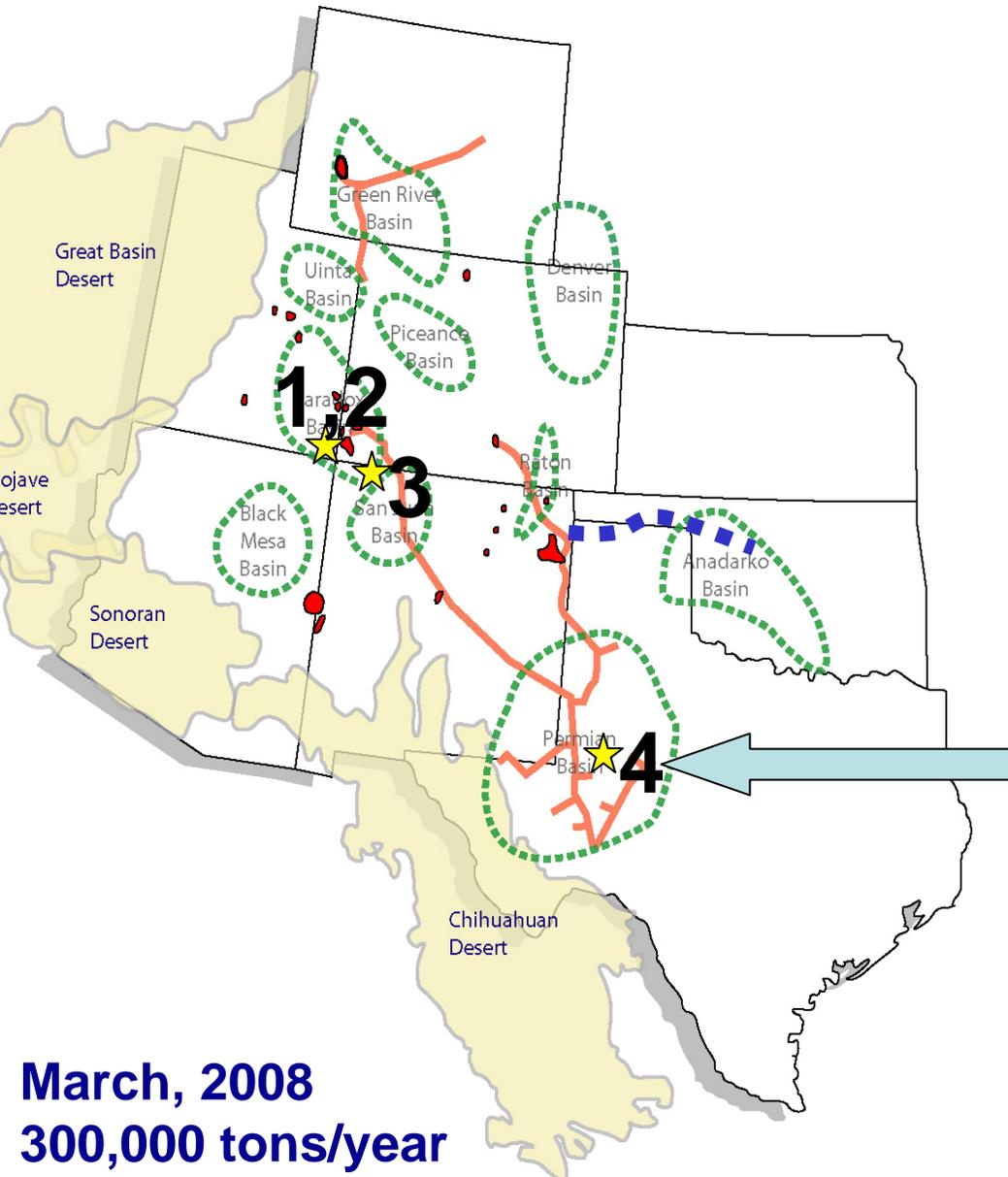


Four of over 100 geologic options were selected as the most promising opportunities for evaluation:

(3) combined enhanced coalbed methane production and sequestration testing, San Juan Basin, NM

September, 2007
75,000 tons/year

Project Portfolio

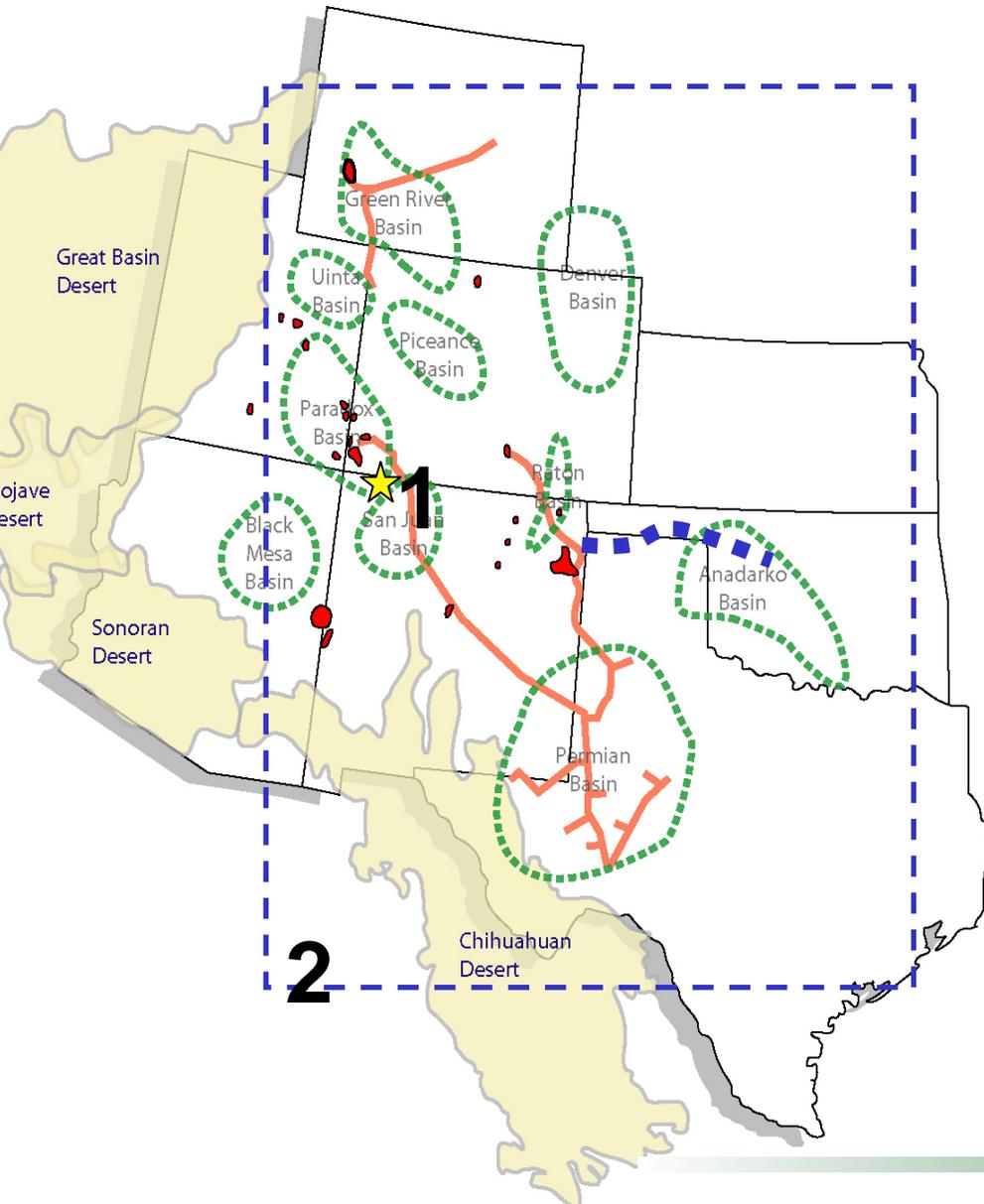


Four of over 100 geologic options were selected as the most promising opportunities for evaluation:

(4) combined enhanced oil recovery and sequestration testing, Permian Basin, TX

March, 2008
300,000 tons/year

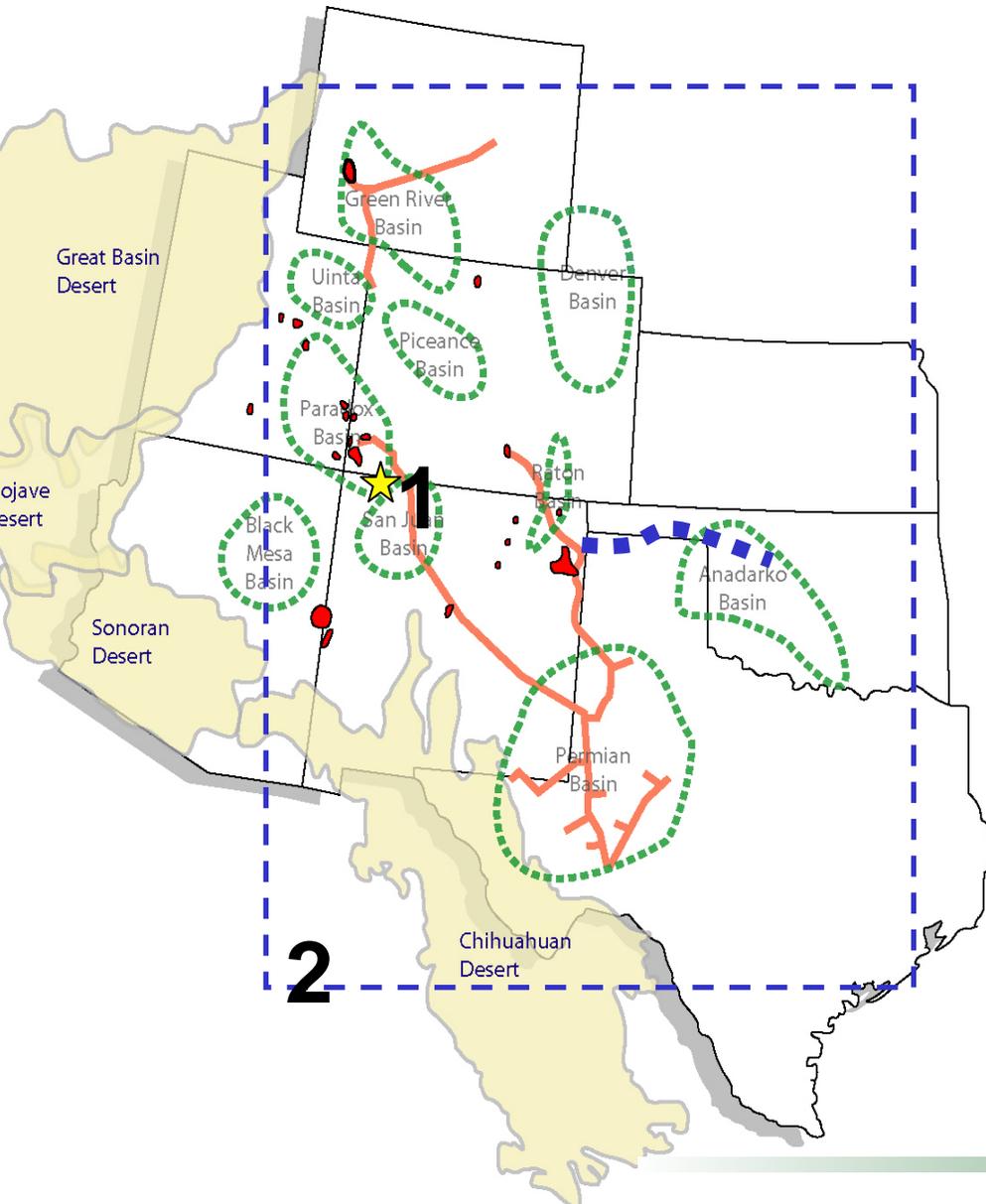
Project Portfolio



TERRESTRIAL Two Phase II programs:

- (1) ~10 km scale terrestrial pilot test in San Juan Basin, NM
- (2) ~100 km scale terrestrial sequestration analysis

Project Portfolio



TERRESTRIAL

The ~10 km scale pilot in New Mexico will be conducted in tandem with the ECBM-sequestration pilot: produced water from the ECBM test will be desalinated and used to restore riparian lands.

Schedule of Major Activities

Injection Schedule

Test/Activity	Location	Start Date
Detailed Project Plan	Each Site	Begun
Permitting Process	All sites	Begun
Tailored MMV Design	All sites	Begun
Baseline Models*	All sites	Begun
Risk Assessment	All sites	Begun
Terrestrial - Regional	Region	January, 2006
Baseline MMV	Paradox Basin, UT	January, 2006
Baseline 3-D Seismic	Permian Basin, TX	January, 2006
Baseline 3-D Seismic	Paradox Basin, UT	August, 2006
Baseline MMV	All other sites	Spring, 2006
Deep Saline	Paradox basin, UT	July, 2007
EOR/Sequestration	Paradox basin, UT	Jan., 2007
EOR/Sequestration	Permian basin, TX	March, 2008
Terrestrial - Riparian	San Juan basin, NM	Sep, 2007
ECBM/Sequestration	San Juan basin, NM	Sep., 2007

Jan 06

Jan 07 ≡ Utah
EOR

Jan 07

Aug 07 ≡ Utah
Saline

Sep 07 ≡ New
Mexico
ECBM

Jan 08

Mar 08 ≡ Texas
EOR

Jan 09

**Content in this presentation was developed
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