



**CDM**

***Private Sector Partnering:  
Technical Analyses for the  
Oklahoma Comprehensive Water Plan***

**John Rehring, P.E.**  
Camp Dresser & McKee Inc.

28<sup>th</sup> Annual Governor's Water Conference  
*Oklahoma City ■ October 24, 2007*

# Presentation Overview

**Water Plan goals**

**Overview of  
technical elements**

**Approach for  
demand projections**

**Phased analysis  
of supplies**

# Attributes of the Water Plan



- x **Reliable information**
- x **Consistent methods, comparable results**
- x **Practical, understandable, useable**
- x **Consistent with existing policy**
- x **Forward-looking**
- x **Robust management of supplies**
- x **The “go-to” source of water information for water users, planners, and media**

# The Water Plan: A Roadmap to Oklahoma's Water Future

**Characterize demands &  
how they'll be reliably met**

**Identify and resolve water  
use conflicts**

**Identify information gaps &  
how to address them**

**Recommendations for water  
management policy**

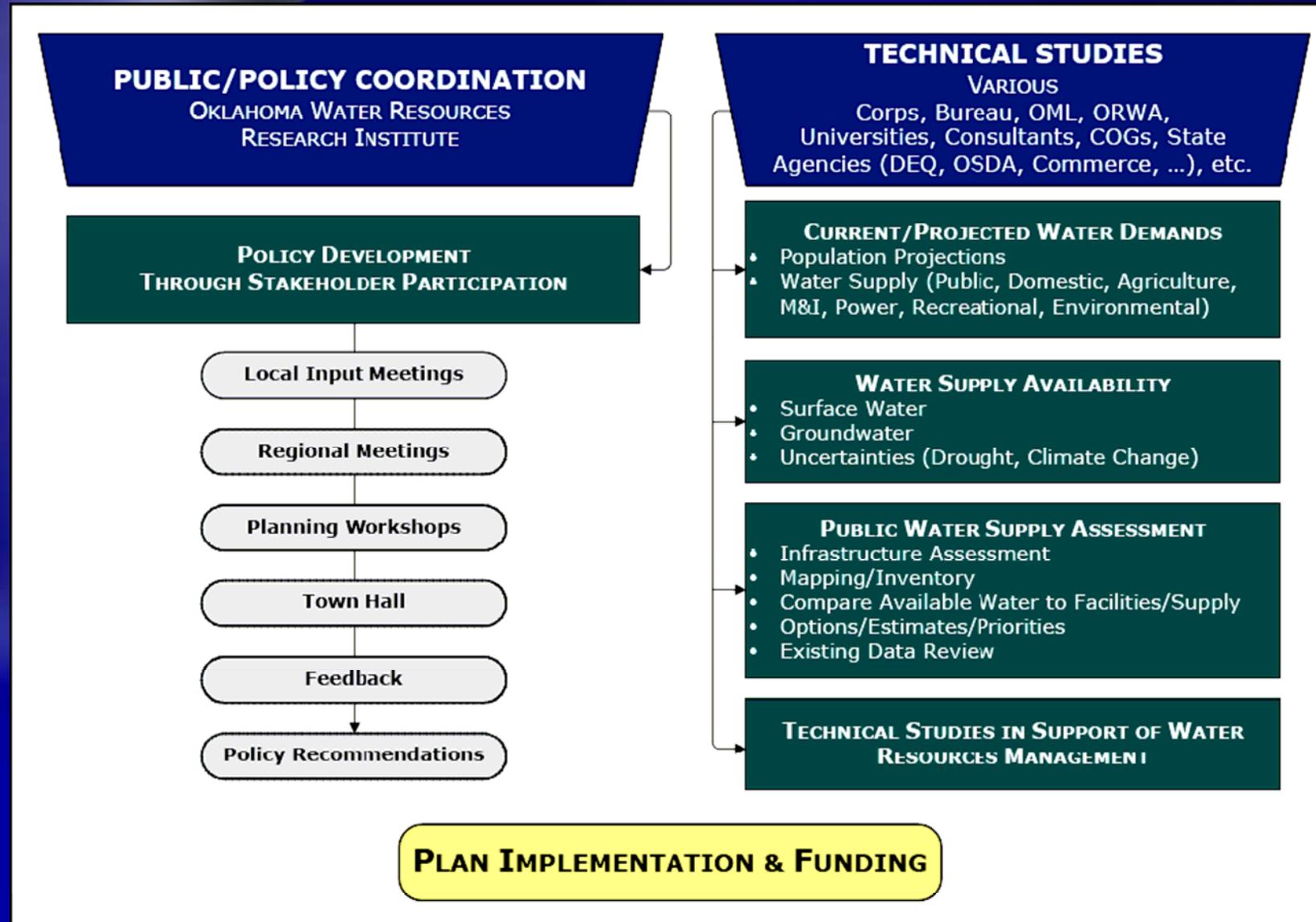
*Enhanced management of Oklahoma's water  
resources to meet Oklahomans' long-term needs*

# Water Plan Technical Goals

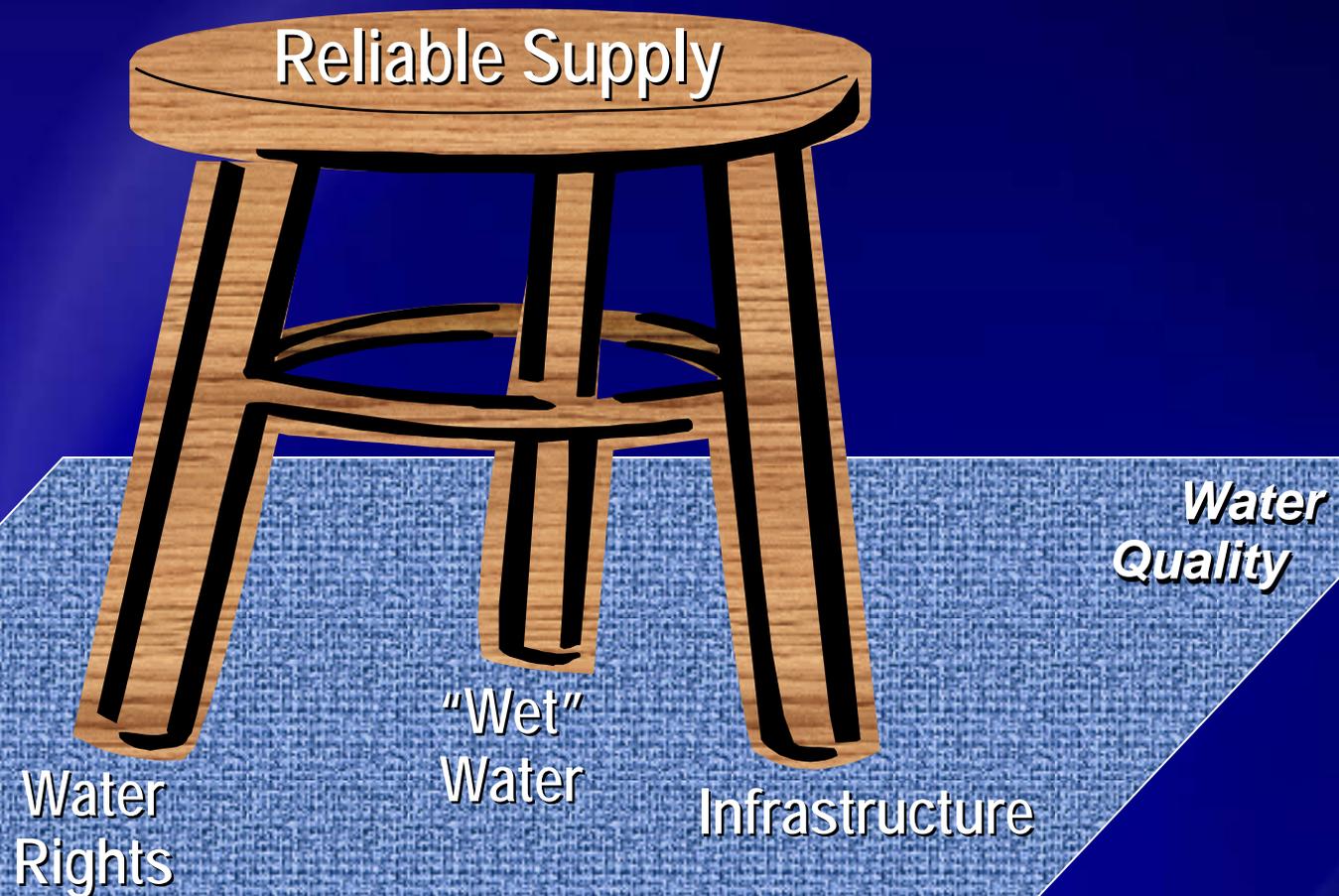


- x **Assess the ability of water users to meet current and future needs**
  - x Demand vs. supply “gap”
  
- x **Set priorities for addressing gaps**
  - x Ability to meet current demands
  - x Ability to meet future demands
  - x Level of planning / funding assistance needed

# Two Parallel but Interactive Paths



# What Contributes to a Reliable Supply?



## Projected Demands

- Public Water Supply
- Agriculture
- Industrial & Power

## Surface Water

## Groundwater

- Physical Availability  
(Wet Water)
- Legal Availability  
(Permits & Water Rights)
- Infrastructure  
(Storage, Conveyance,  
Treatment)

## Priority Sites and Areas

## Comprehensive Water Plan

- Coordinated Planning
- Funding & Financing
- Infrastructure
- Water Policy

# Major Water Use Sectors



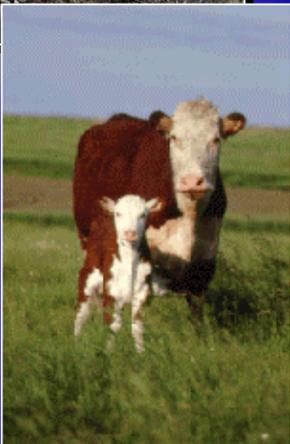
**Public Supply (M&I)**

- x Residential
- x Commercial
- x Industrial
- x Self-supplied domestic



**Self-supplied Industrial**

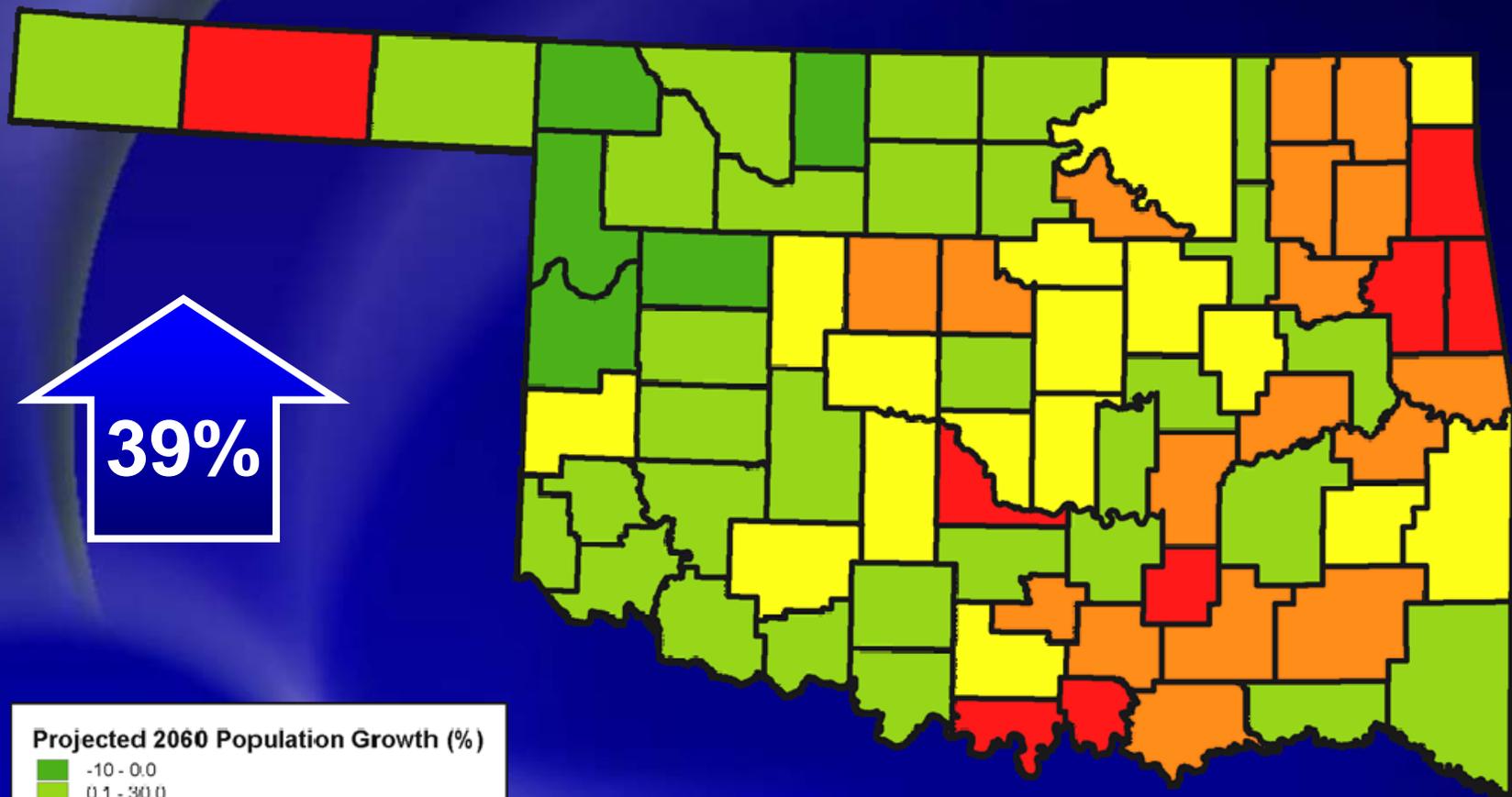
- x Large Industries
- x Power Plants
- x Oil & Gas



**Agriculture**

- x Livestock
- x Irrigated Crops

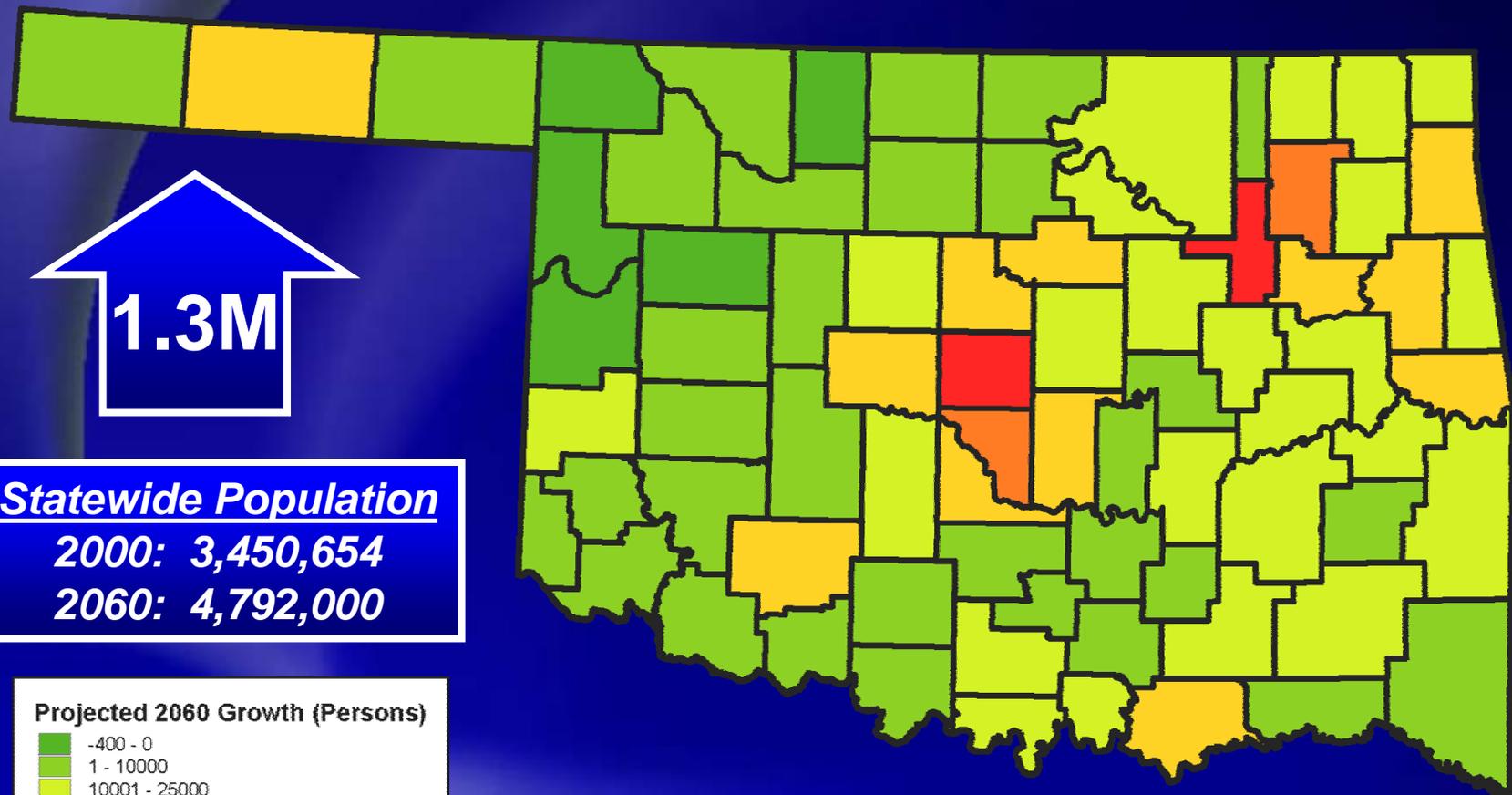
# Oklahoma's Population Growth through 2060 (percent)



**Projected 2060 Population Growth (%)**

|              |              |
|--------------|--------------|
| Light Green  | -10 - 0.0    |
| Medium Green | 0.1 - 30.0   |
| Yellow       | 30.1 - 60.0  |
| Orange       | 60.1 - 100.0 |
| Red          | >100         |

# Oklahoma's Population Growth through 2060 *(number of persons)*



↑  
**1.3M**

**Statewide Population**  
2000: 3,450,654  
2060: 4,792,000

**Projected 2060 Growth (Persons)**

|              |                 |
|--------------|-----------------|
| Dark Green   | -400 - 0        |
| Light Green  | 1 - 10000       |
| Yellow-Green | 10001 - 25000   |
| Yellow       | 25001 - 50000   |
| Orange       | 50001 - 100000  |
| Red          | 100001 - 175000 |

# What Level of Geography?



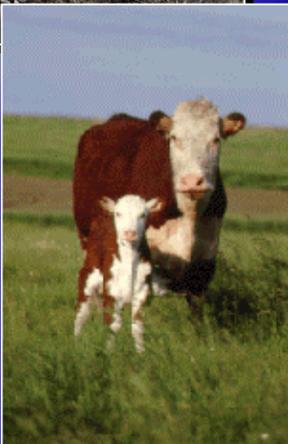
**Public Supply (M&I)**

- x **Municipal Systems**
- x **Rural Water Systems**
- x **Remainder of county**



**Self-supplied Industrial**

- x **By location**



**Agriculture**

- x **By county**

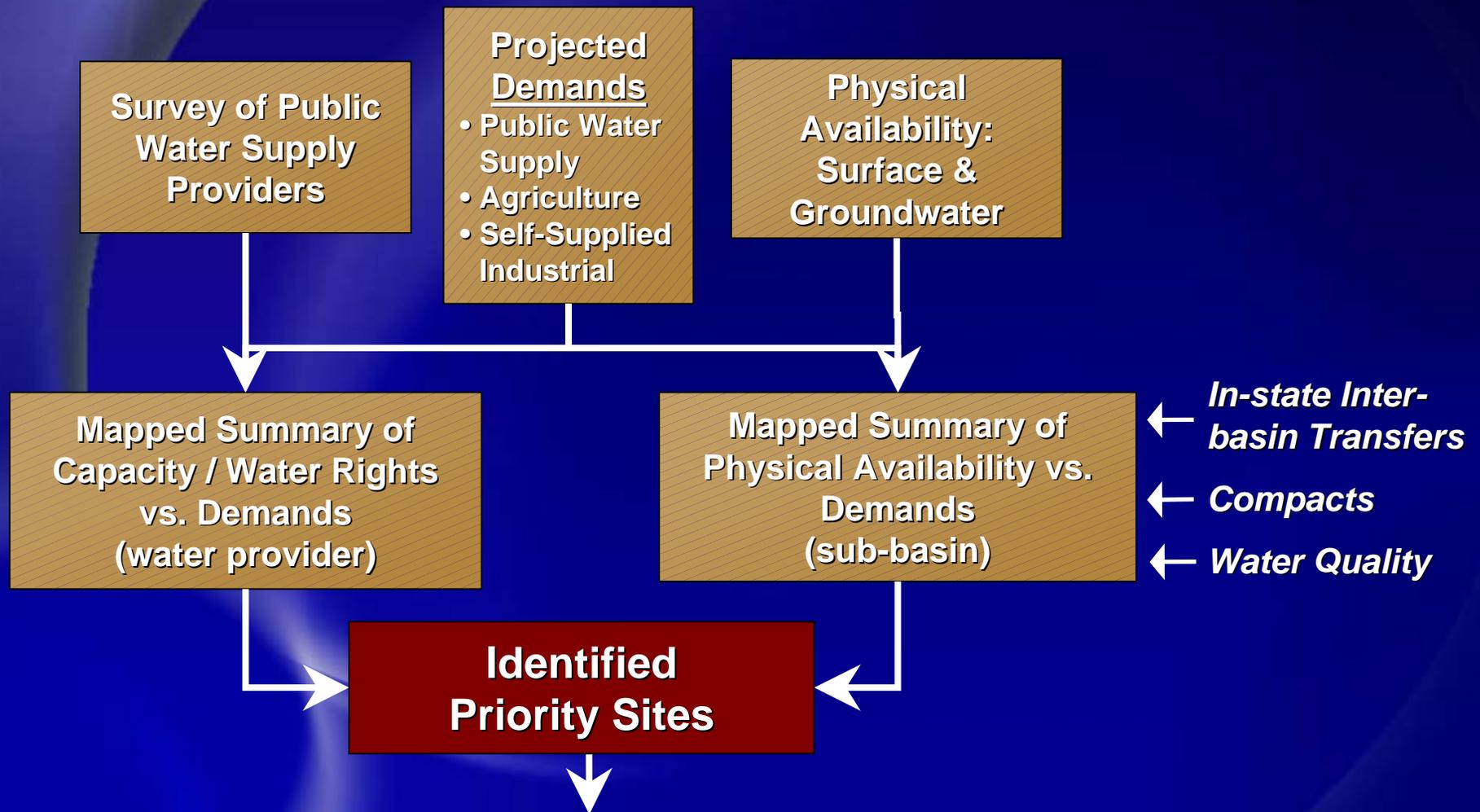
# Three Levels of Water Supply Analysis

1. Statewide screening of watershed-level water supply constraints
2. Detailed gap analysis (supply vs. demand) for identified priority areas
3. Supply alternatives analysis to address “gaps”

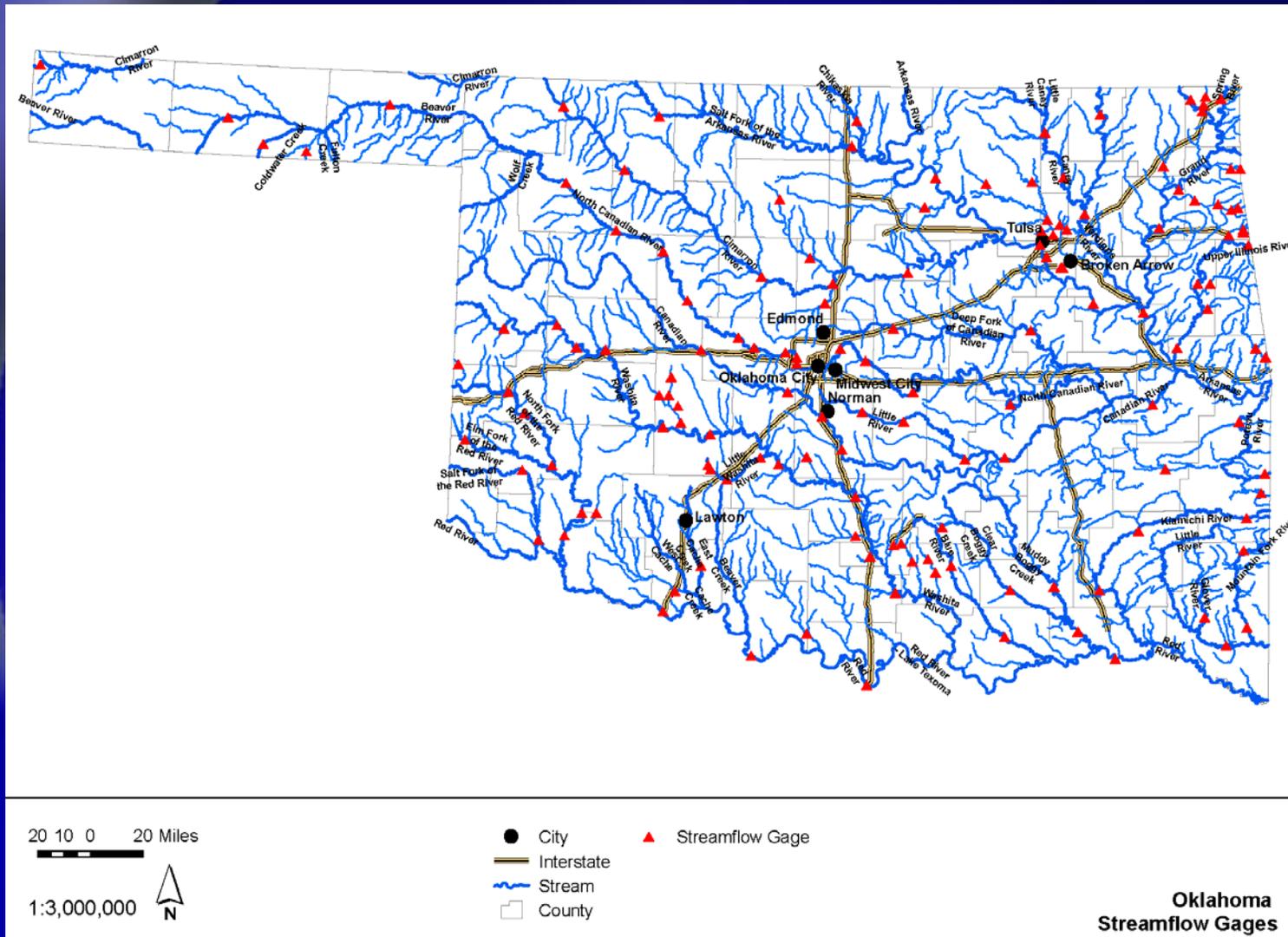


# Phased Analysis of Supplies

## Phase 1: Statewide Screening of Gap Potential



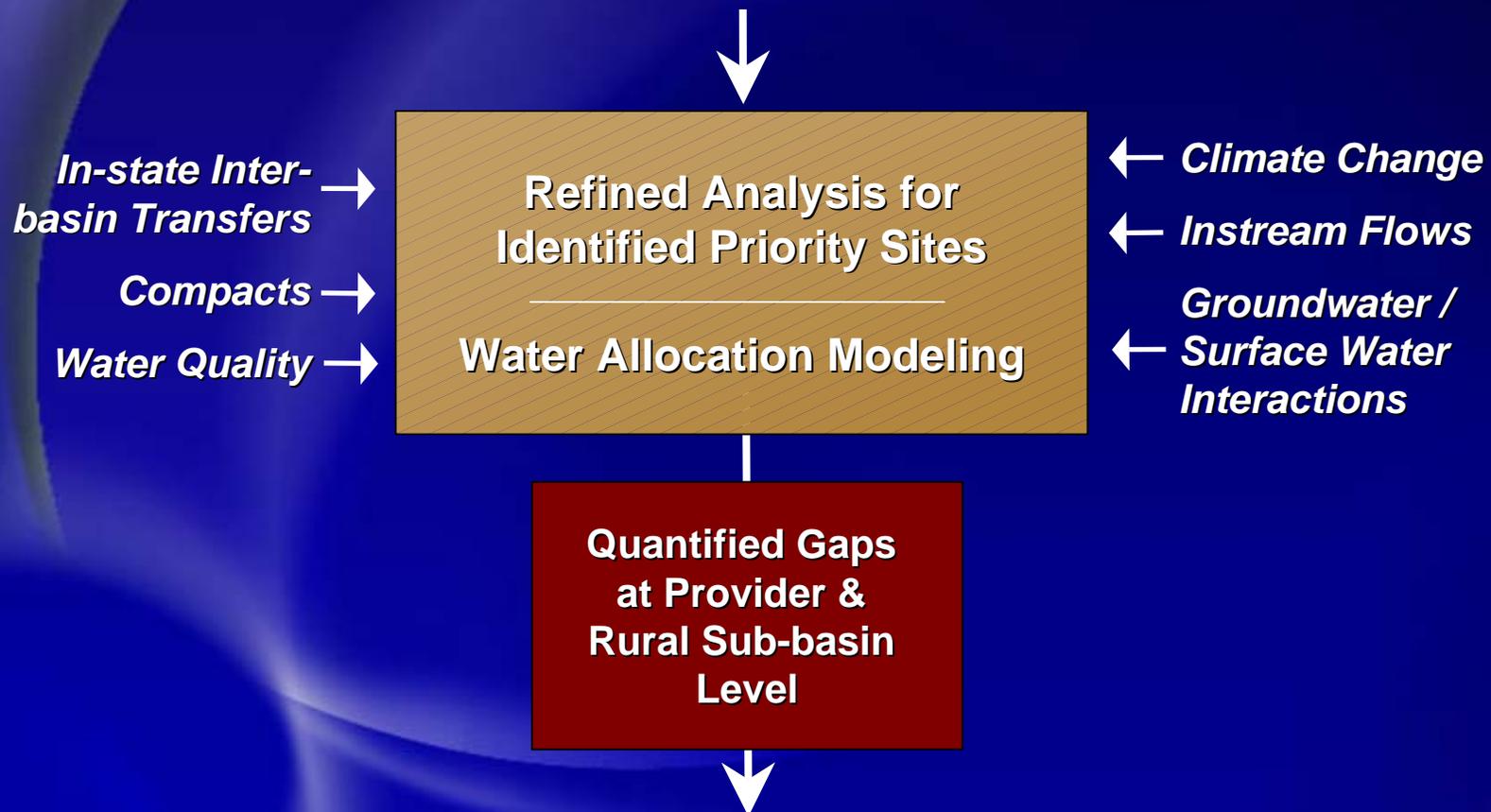
# Phase 1: Physical Availability



# Phased Analysis of Supplies

Phase 2:

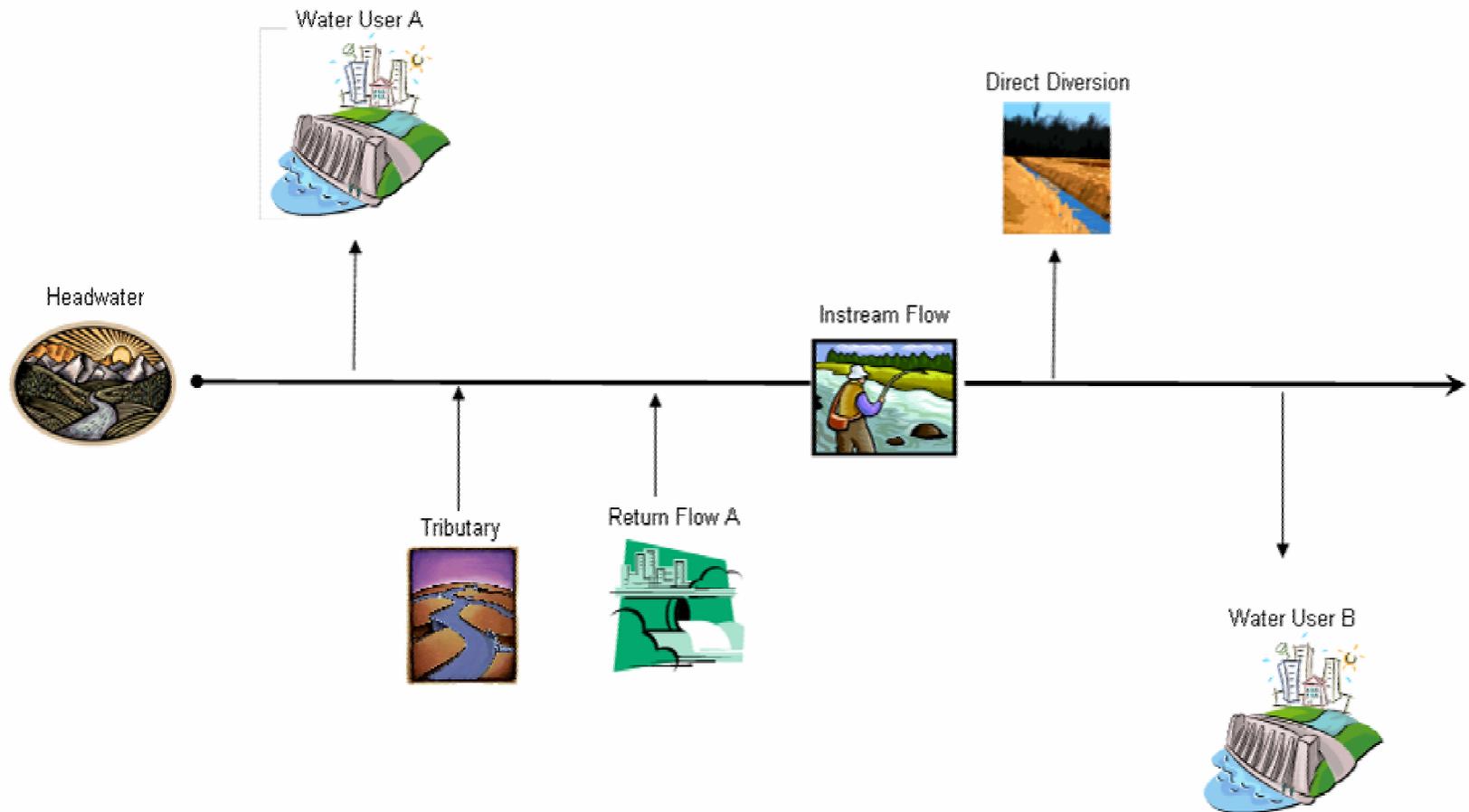
Detailed Gap Analysis for Targeted Providers / Sub-basins



# Phase 2: Integrated Analysis of Water Allocation in Priority Areas



## *Water Allocation Model*



# Phased Analysis of Supplies

Phase 3:  
Alternatives





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