



Summary of Method and Responses

Review of Groundwater Banking Programs: Survey for Sacramento Groundwater Authority and Update

Sacramento Central Groundwater Authority

March 14, 2012

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Groundwater Banking Programs Survey

Worked with SGA Banking Oversight Committee to Determine:

- **Goals of Survey**
- **Key Issues to include in Survey Questions**
- **Which Banking Programs to Survey**

Groundwater Banking Programs Survey

Goals of Survey:

- Obtain information about various existing banking programs
- Determine common practices
- Benefit from experience of others (“what works, what doesn’t?”)

Groundwater Banking Programs Survey

Key Issues:

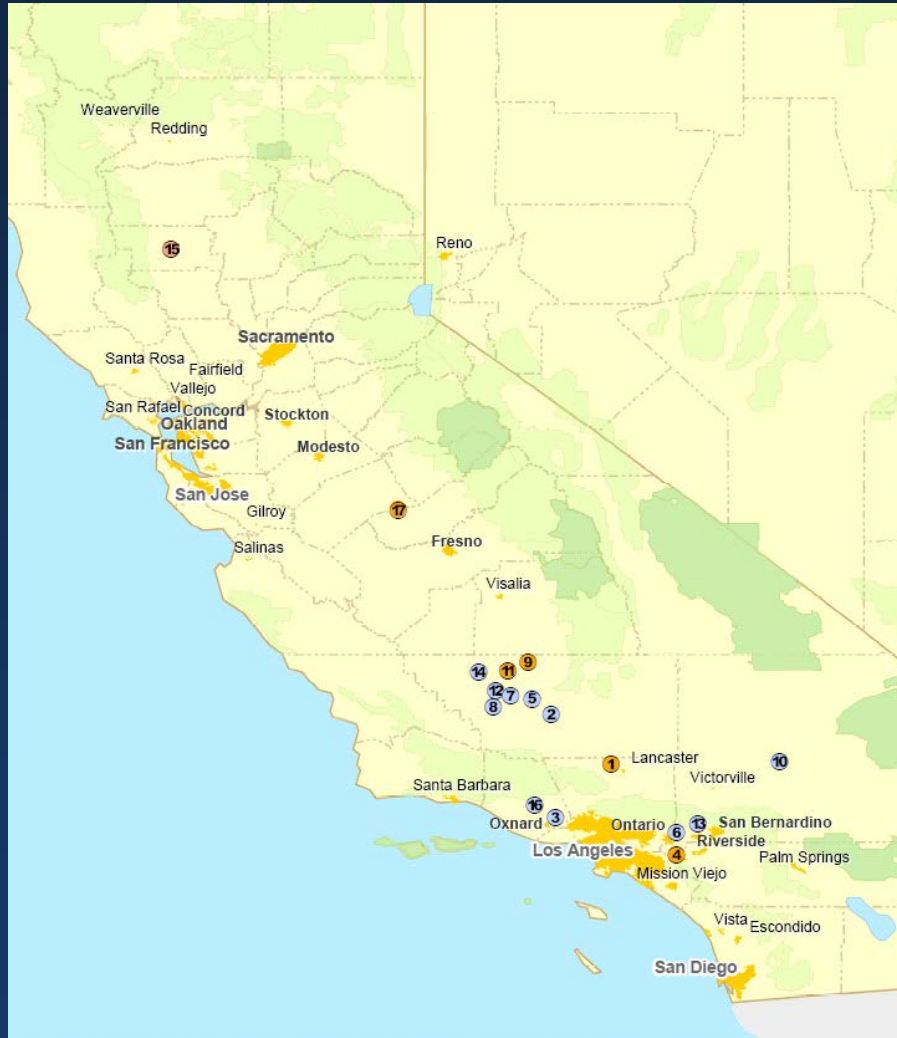
- **Administration and monitoring procedures**
- **Methods of operation**
- **Costs**
- **Loss Factors**

Groundwater Banking Programs Survey

Programs Surveyed (type)

- **Semitropic Water Storage District (in-lieu)**
- **Kern Water Bank Authority (percolation)**
- **Arvin Edison Water Storage District (percolation)**
- **United Water Conservation District (percolation)**
- **Calleguas Municipal Water District (in-lieu and ASR)**
- **Mojave Water Agency (percolation)**
- **San Bernardino Valley Water Conservation District (in-lieu and percolation)**

California Groundwater Banking Programs



Legend

- Active Bank
- Bank Under Consideration

Groundwater Bank

- 1 Antelope Valley
- 2 Arvin-Edison W.S.D.
- 3 Calleguas M.W.D.
- 4 Chino Basin Watermaster
- 5 City of Bakersfield
- 6 Inland Empire Utilities Agency
- 7 Kern County Water Agency
- 8 Kern Water Bank
- 9 Kern-Tulare/Rag Gulch W.D.
- 10 Mojave Water Agency
- 11 North Kern W.S.D.
- 12 Rosedale-Rio Bravo W.S.D.
- 13 San Bernardino M.W.D.
- 14 Semitropic W.S.D.
- 15 Stony Creek Partners
- 16 United Water Conservation District
- 17 Madera Ranch

Groundwater Banking Programs Survey

Results:

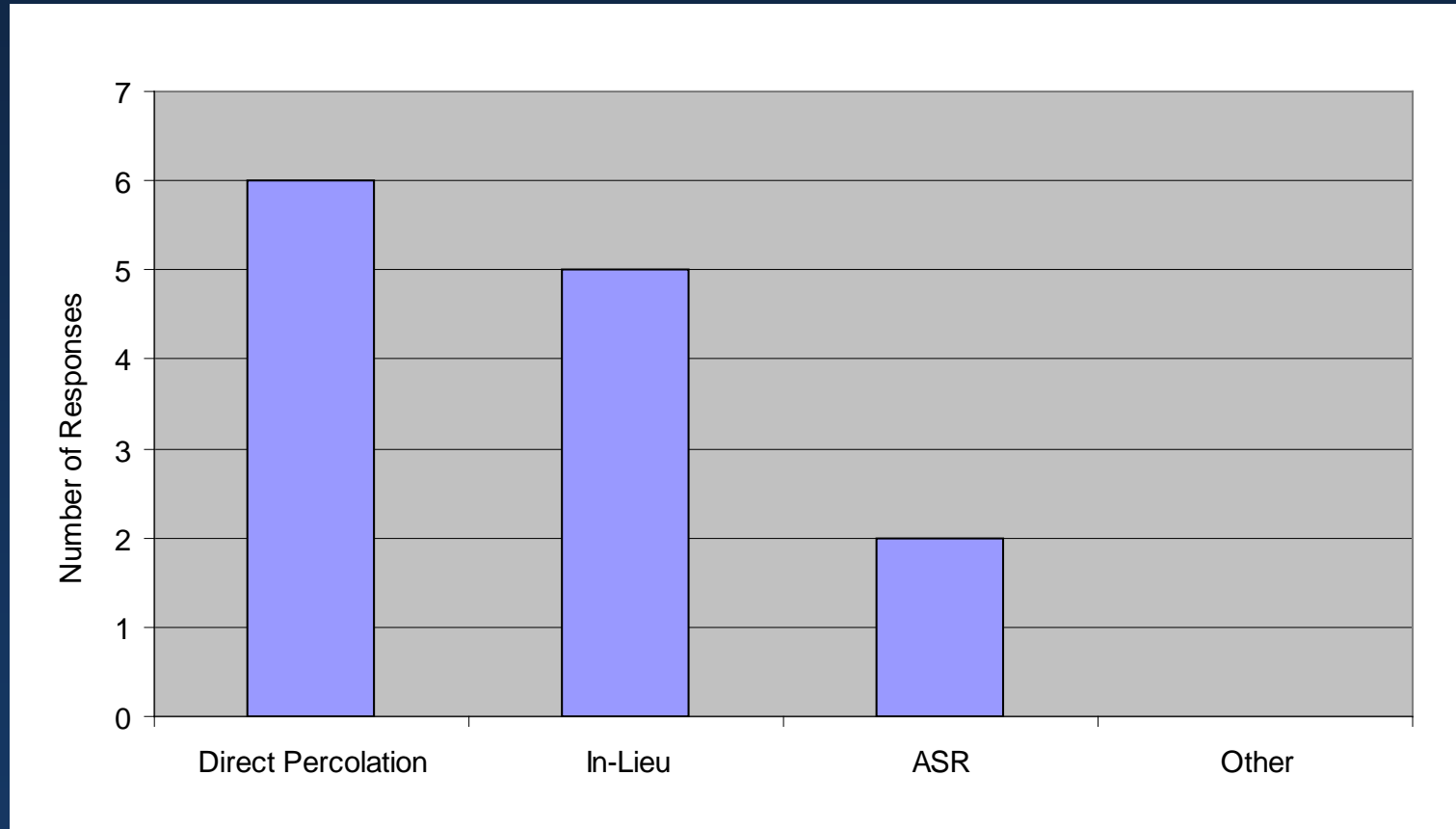
- Full participation by all seven programs
- Detailed results compiled in spreadsheet format
- Summary of key results in graphic format

Groundwater Banking Programs Survey

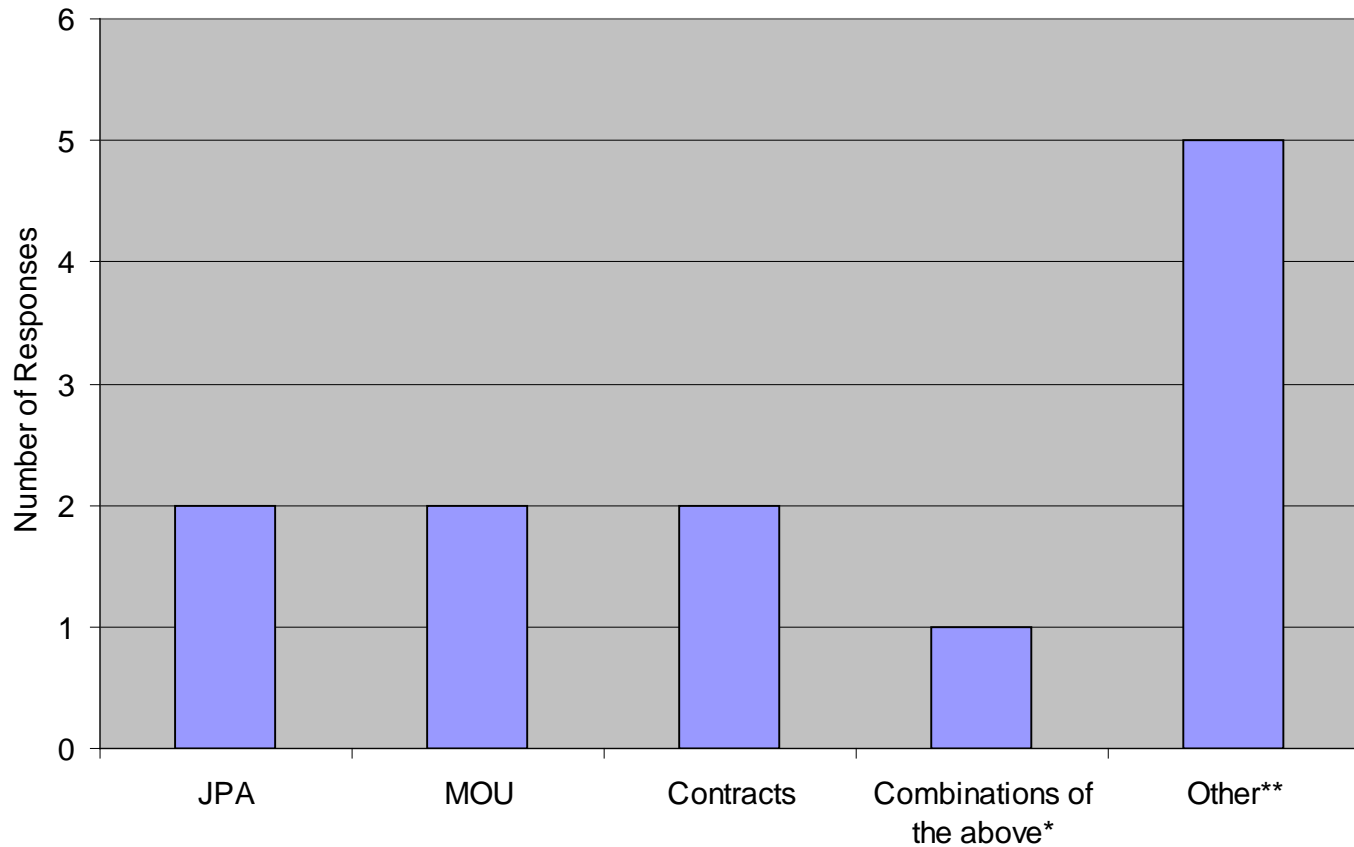
Summary of Results:

SECTION 1 GENERAL INFORMATION

Type of Program



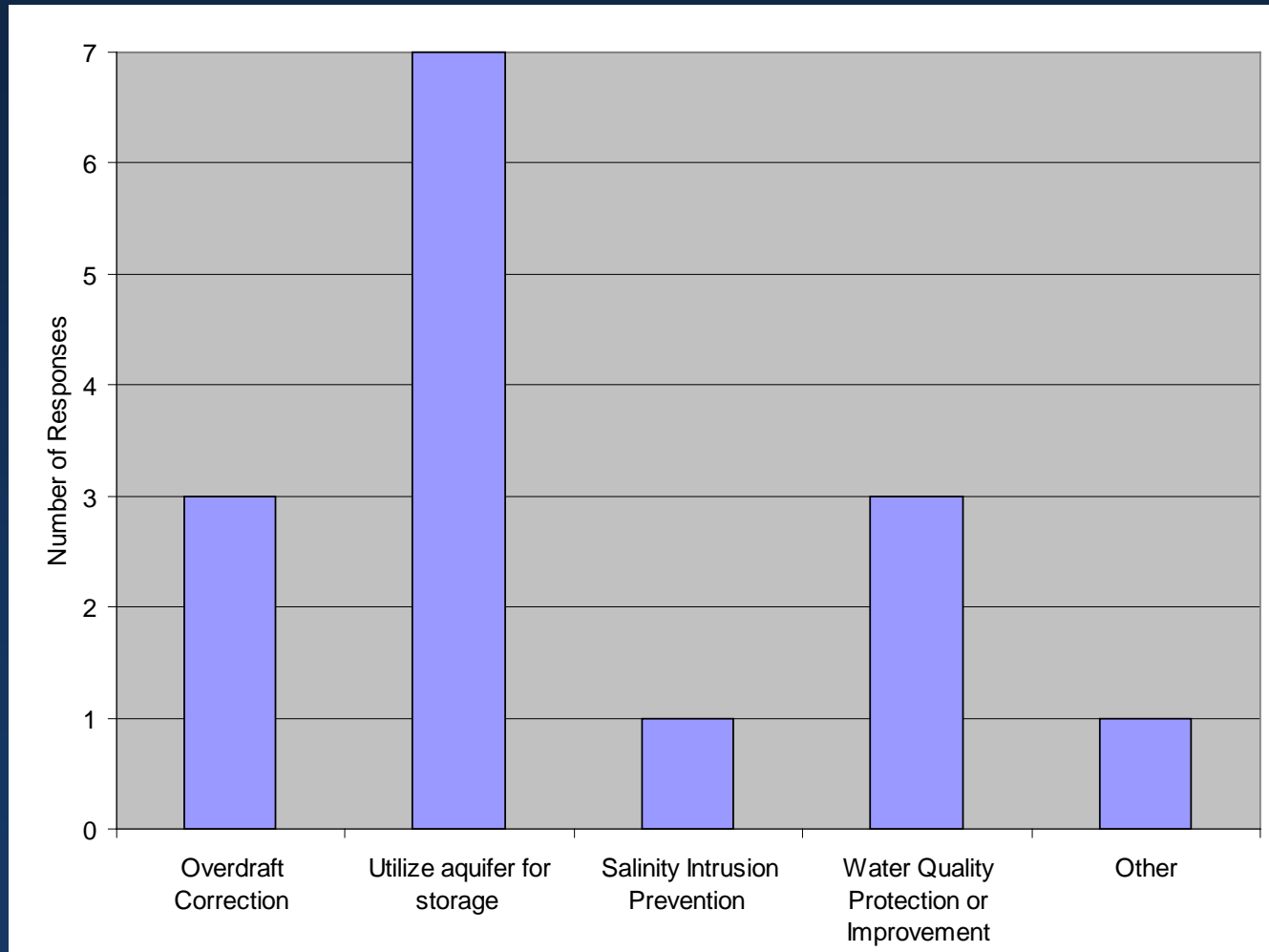
Program Method of Administration



* Semitropic uses Contracts and JPA as Program Method of Administration

** Agreements, Acts, and Ordinances.

Program Goals and Objectives

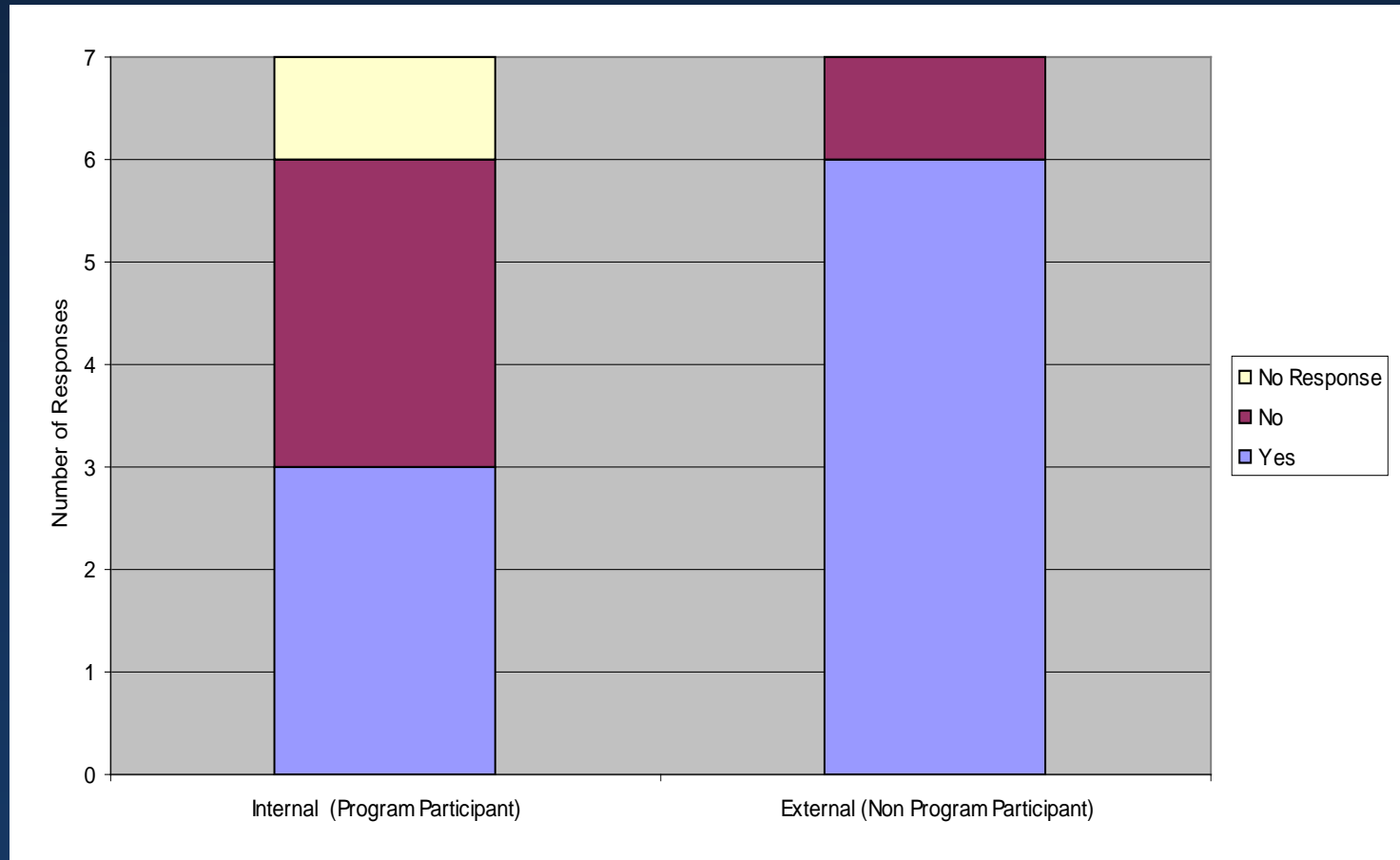


Groundwater Banking Programs Survey

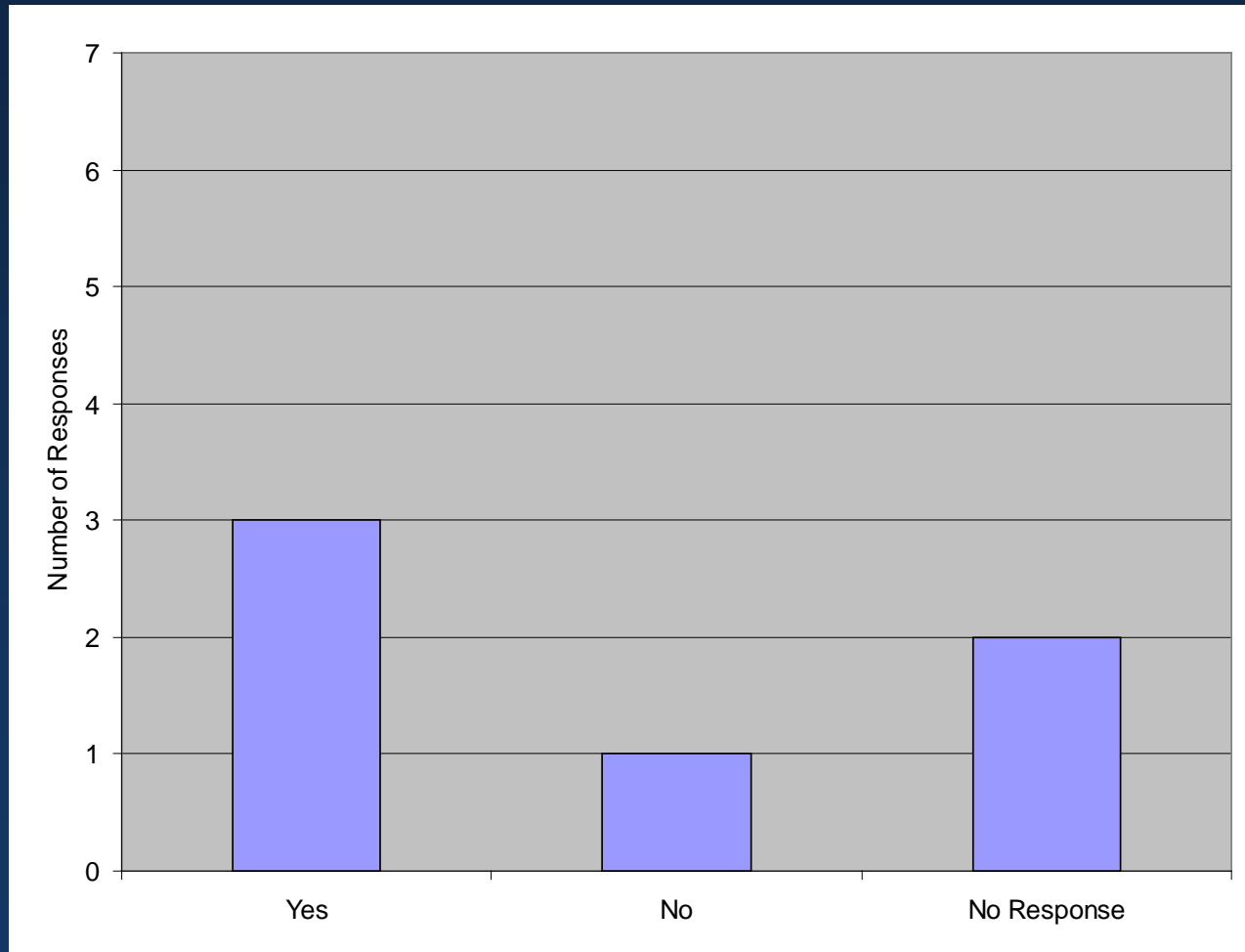
Summary of Results:

SECTION 2 ORGANIZATION

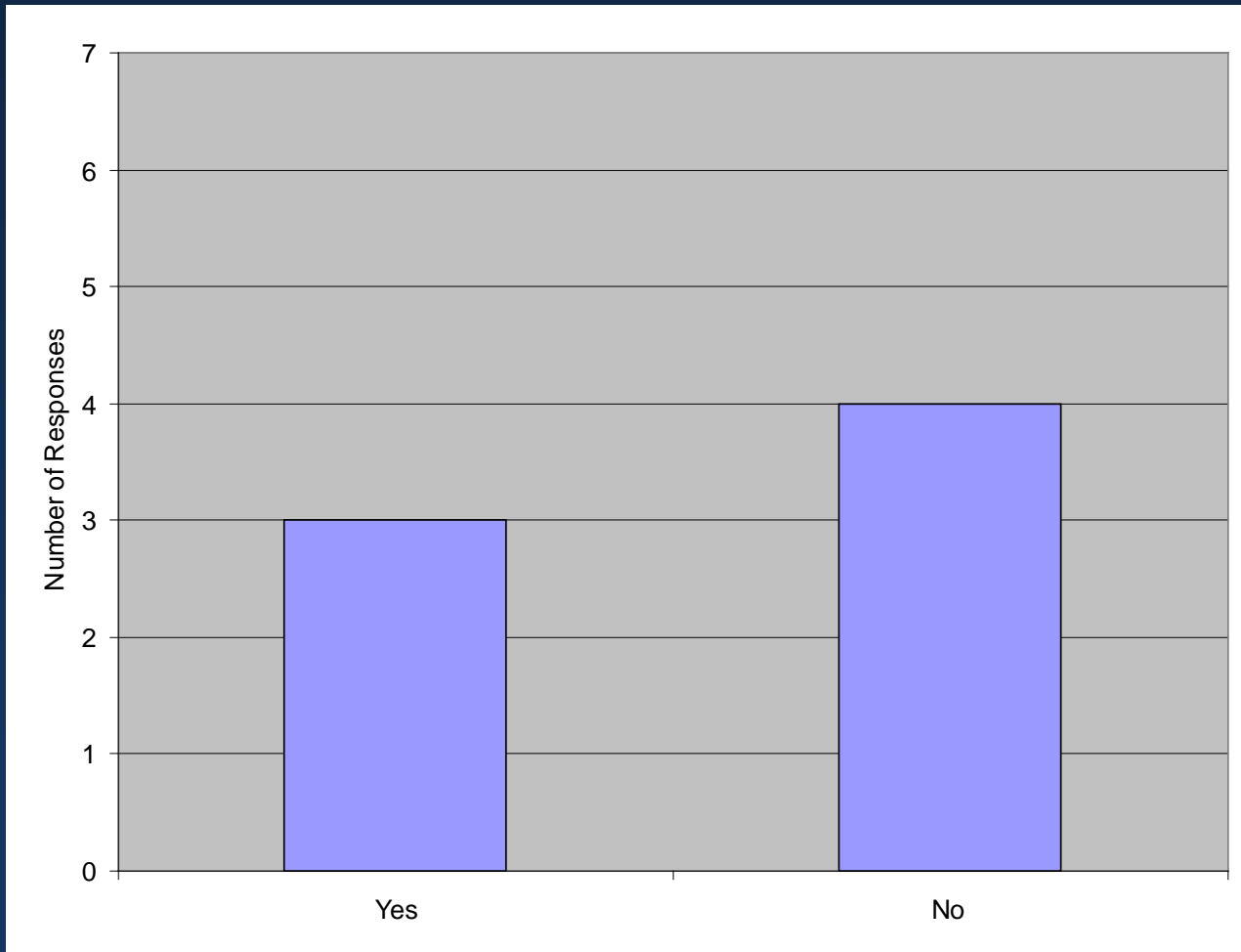
Monitoring Committee Oversight



Program Meeting Quantified Goals



Adjudicated Groundwater Basin

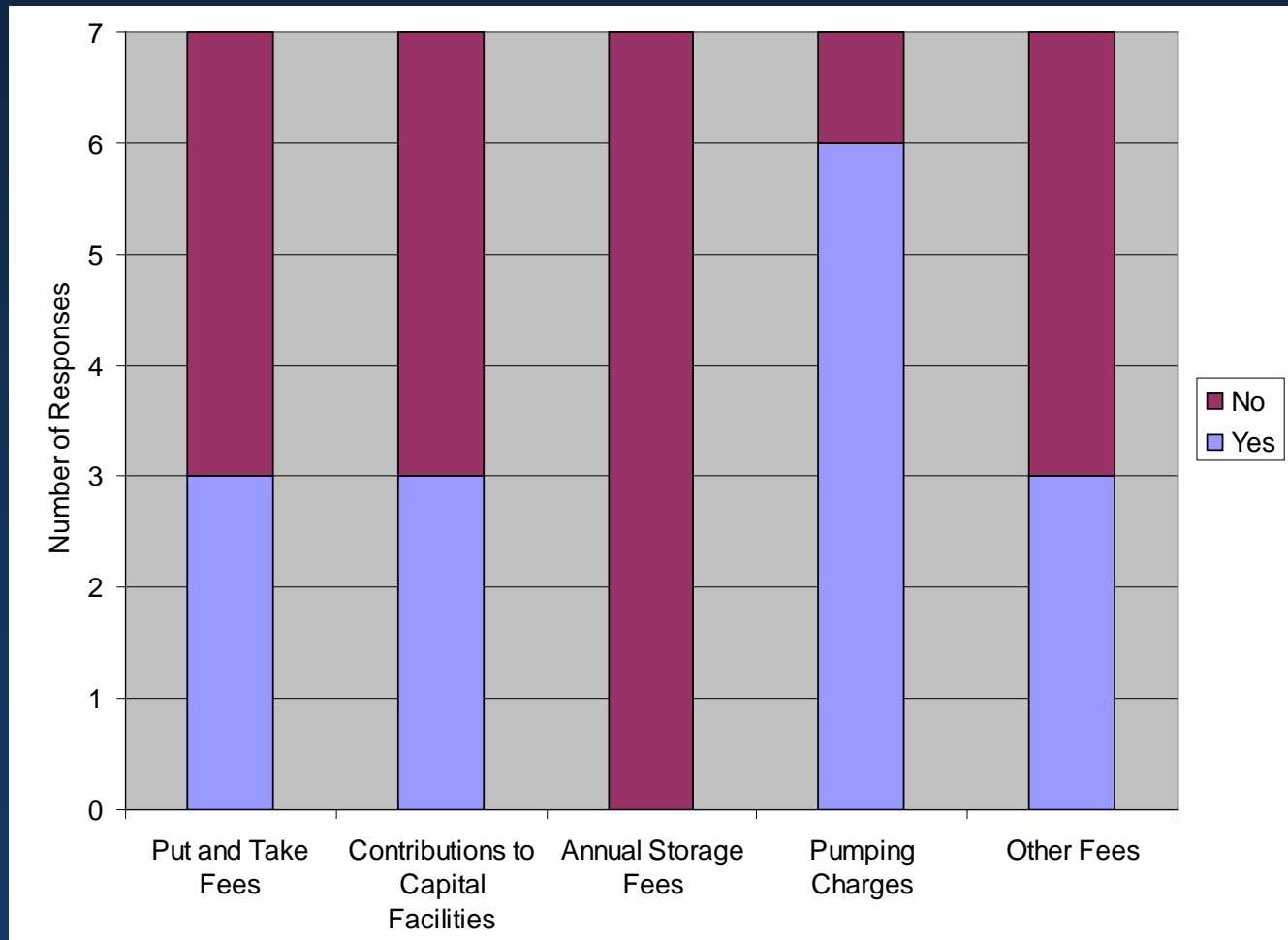


Groundwater Banking Programs Survey

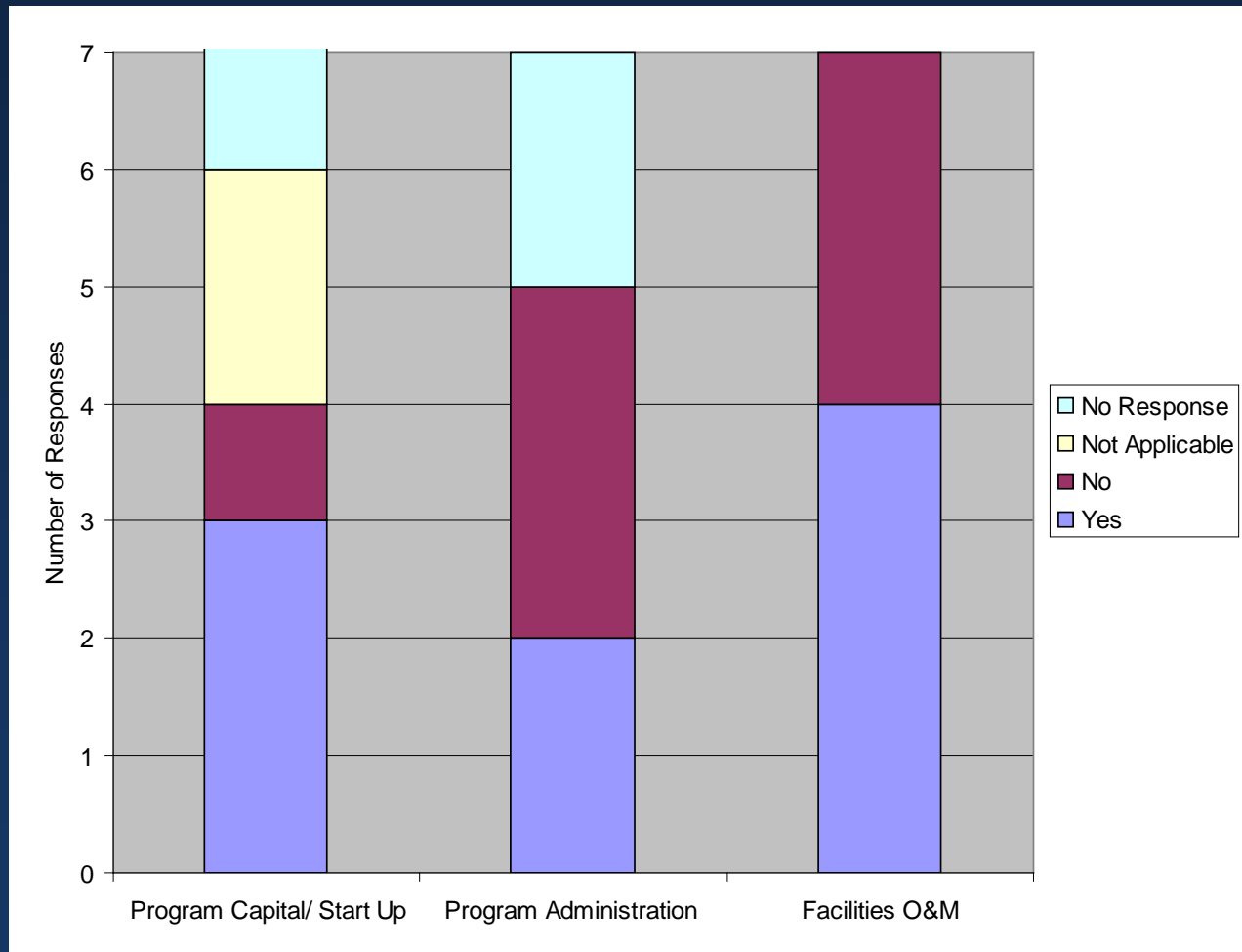
Summary of Results:

SECTION 3 FINANCIAL INFORMATION

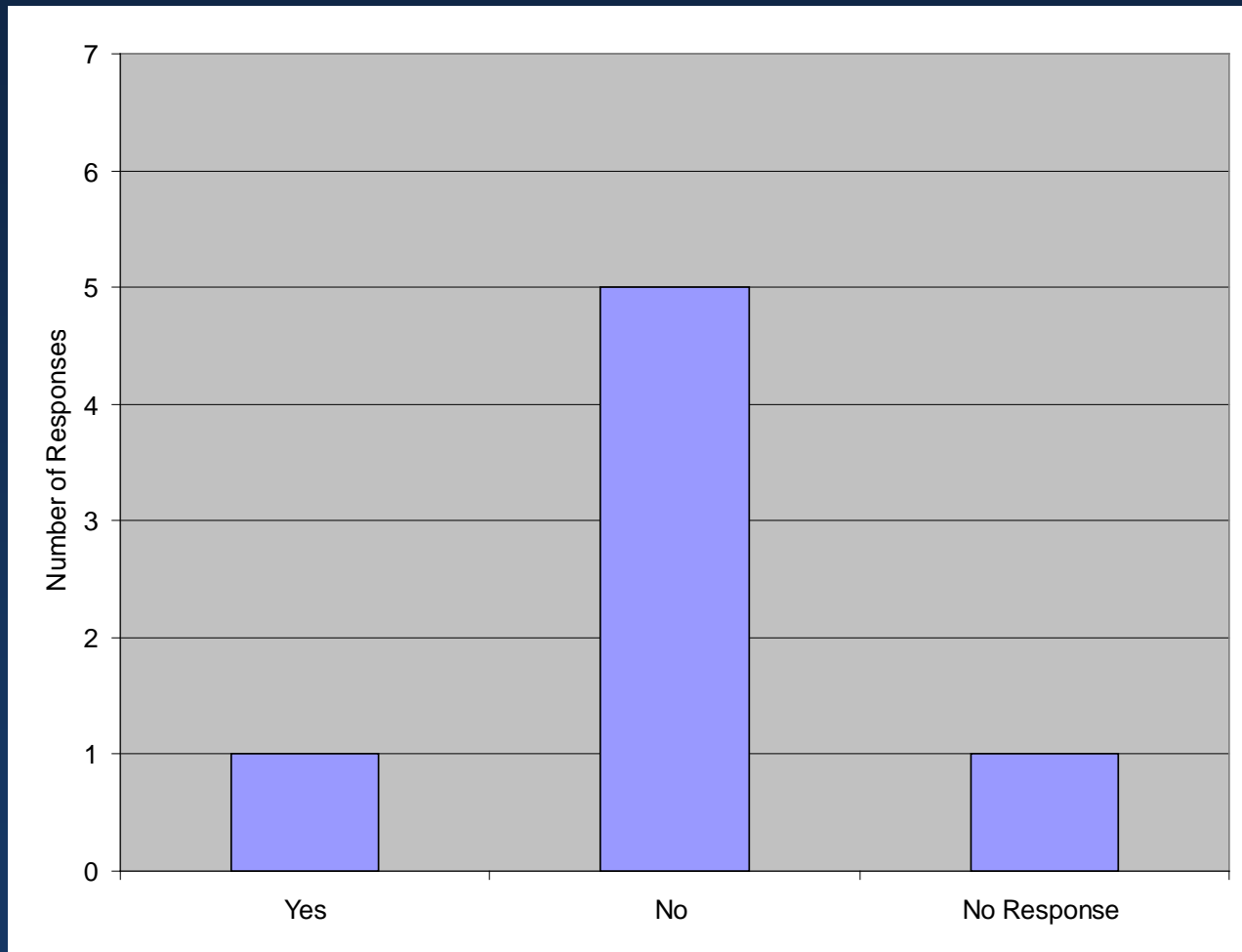
Fees for Deposit and Withdrawal



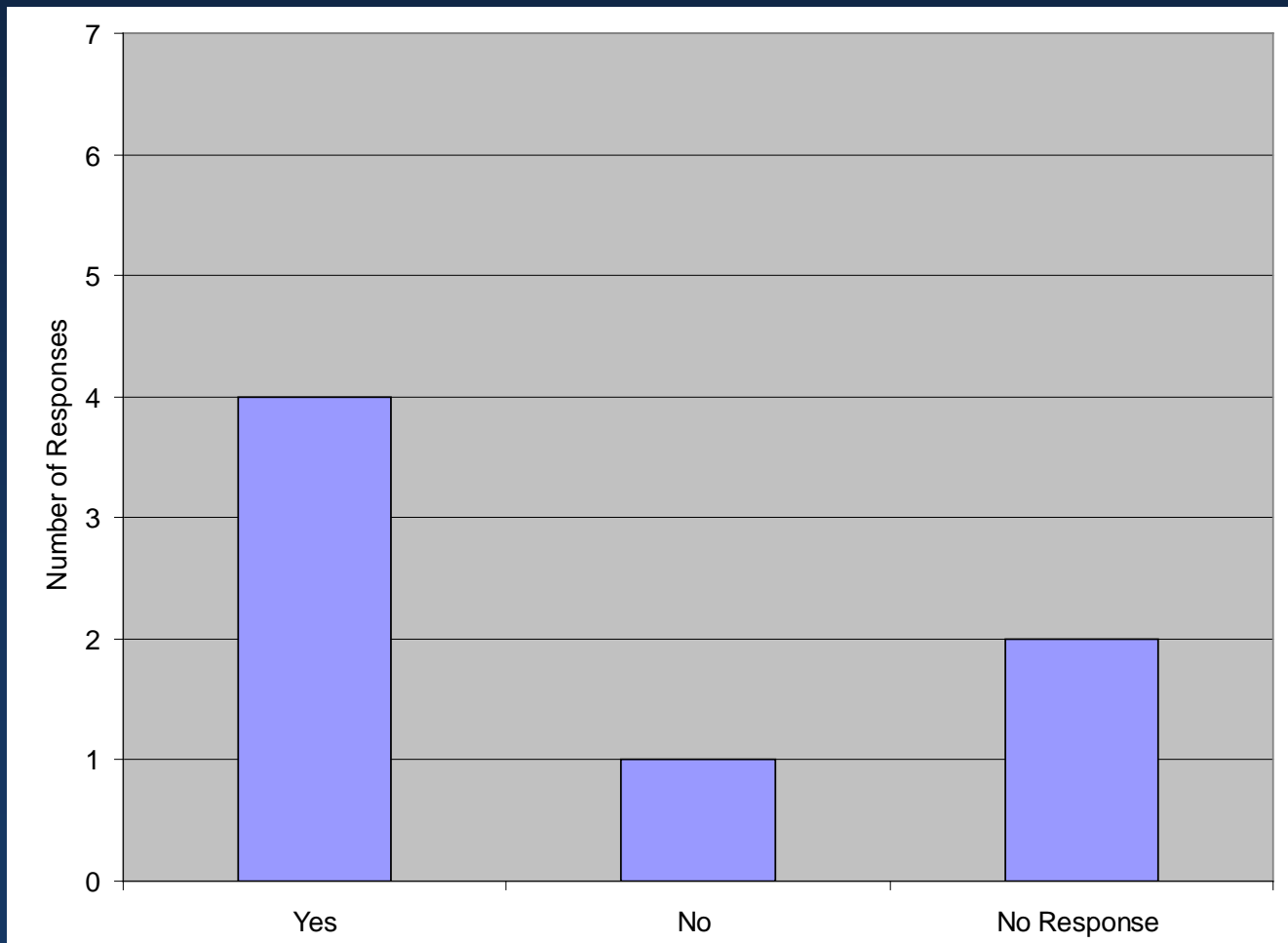
Costs



Financial Incentive for Not Pumping



Public Funding Utilized for Capital Cost

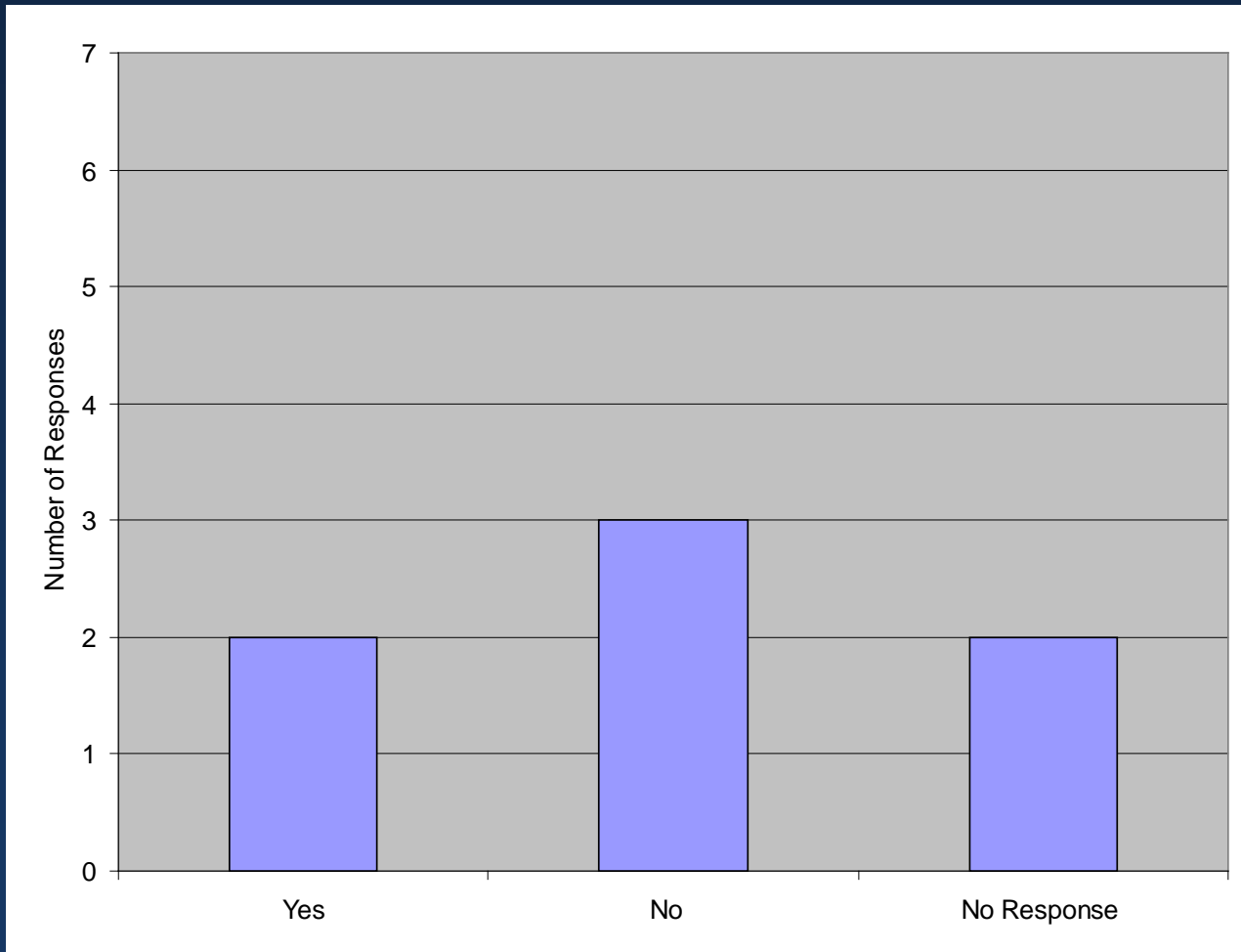


Groundwater Banking Programs Survey

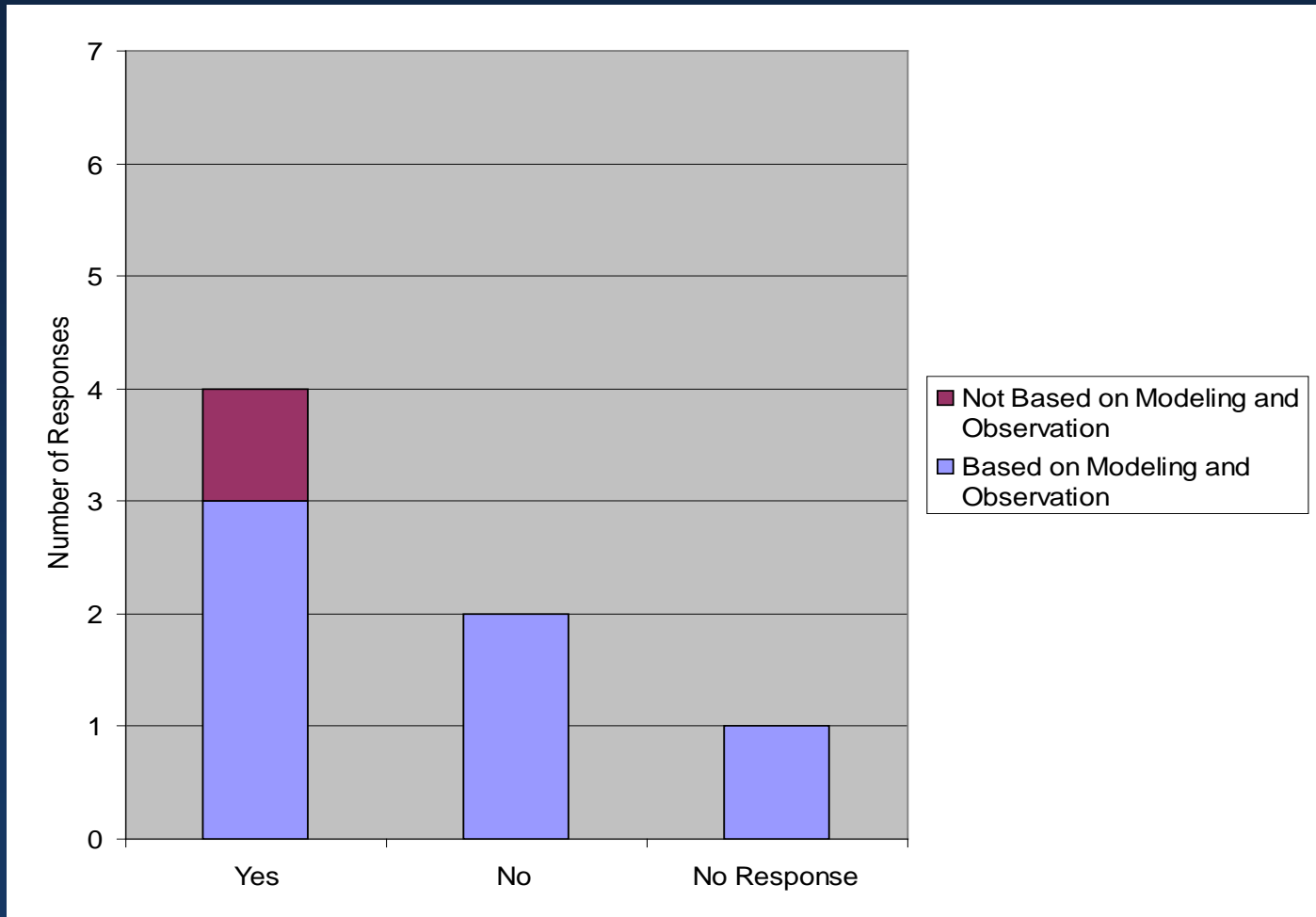
Summary of Results:

SECTION 4 SPECIFIC OPERATIONS

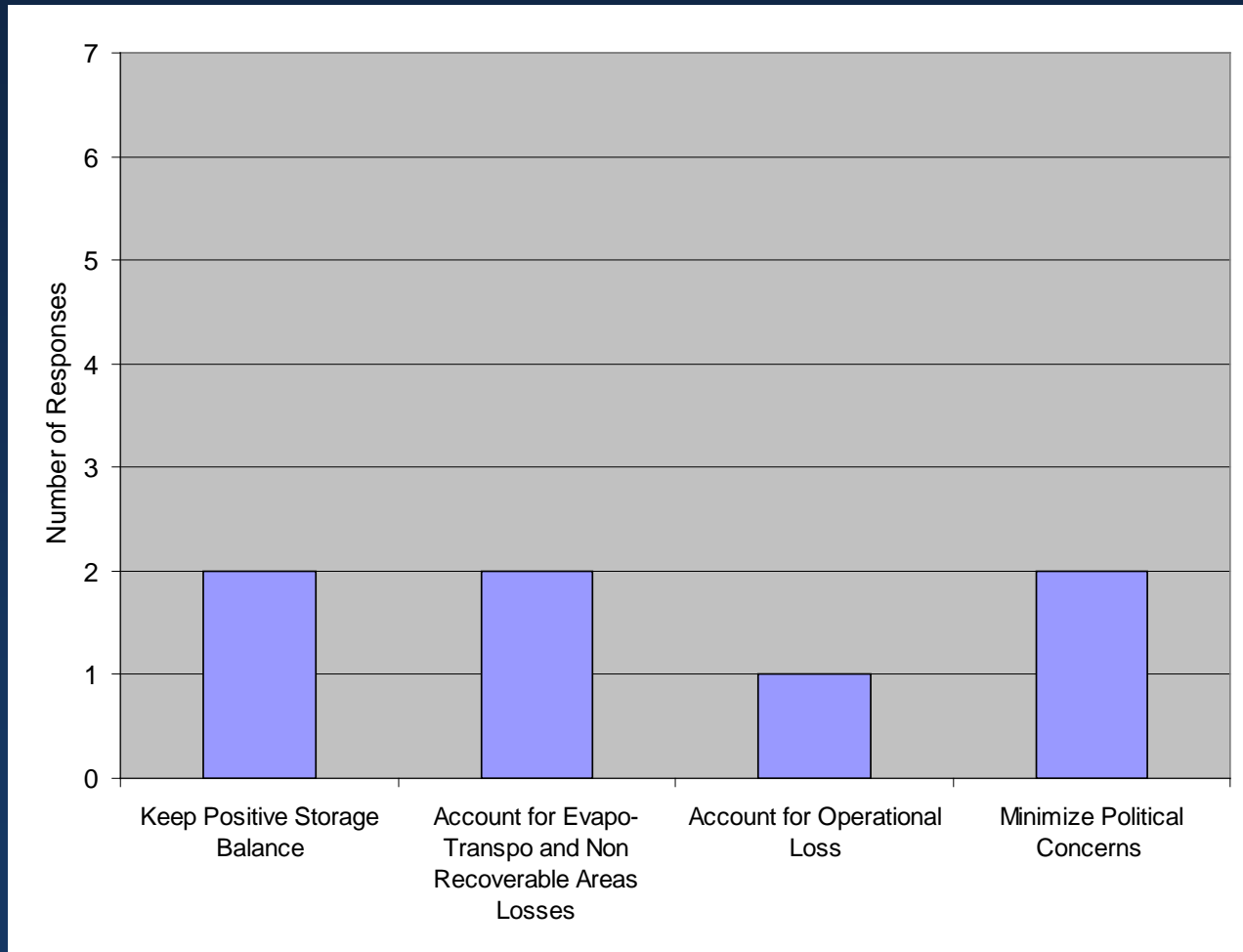
ASR Capacity



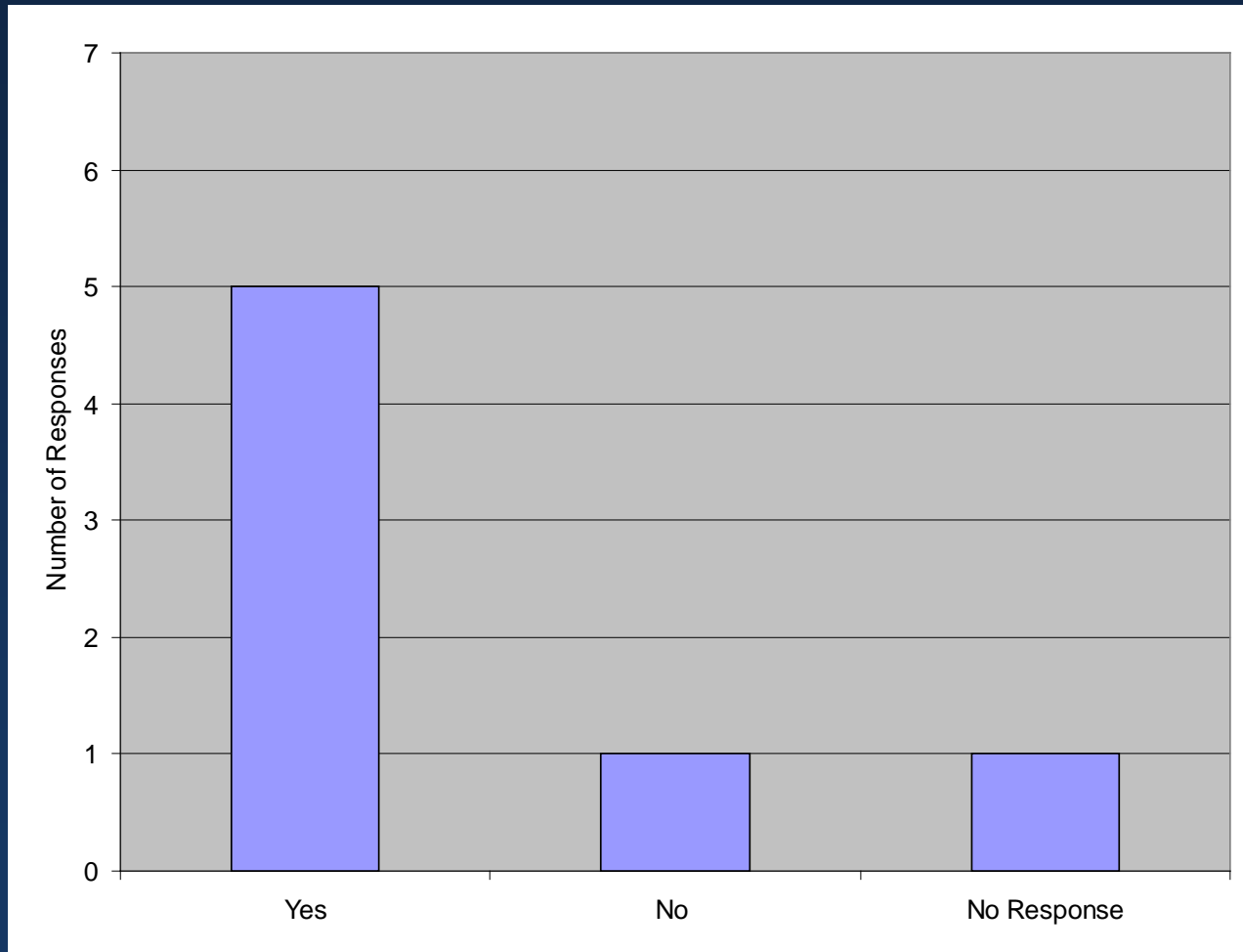
Loss Factors Applied to Stored Water



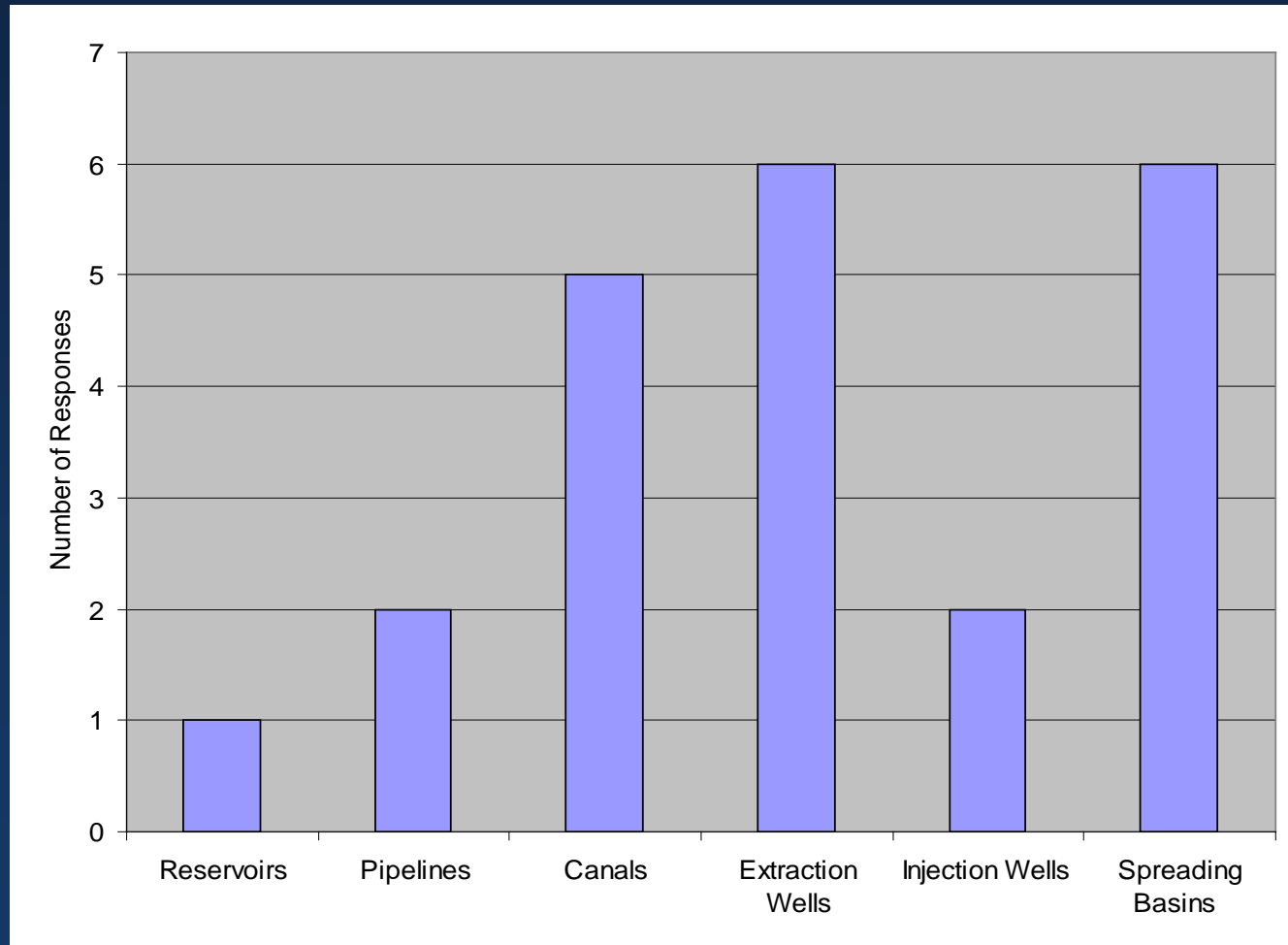
Purpose of Loss Factor



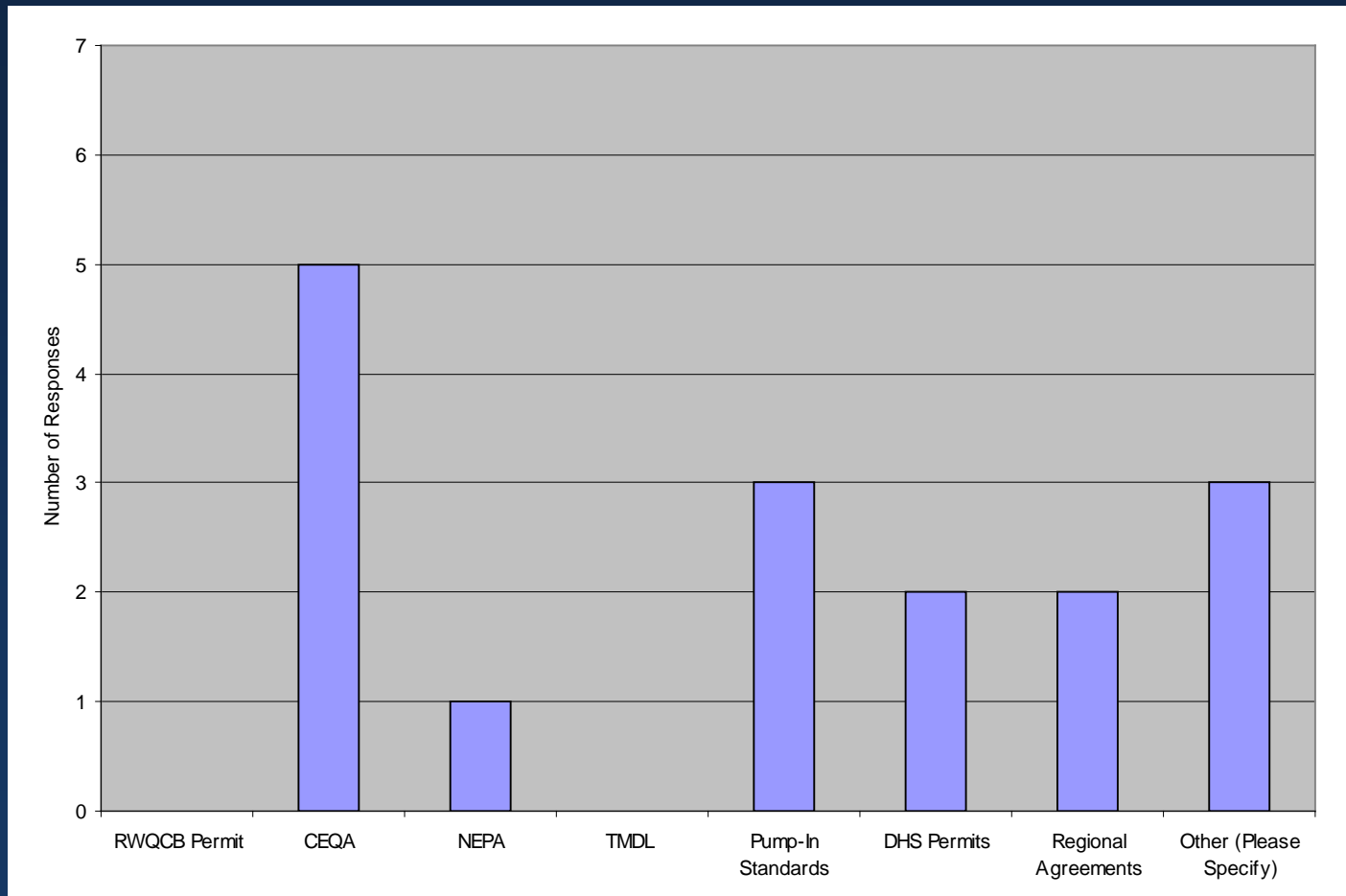
Restrictions on Deposits or Withdrawals



Banking and Exchange Facility Elements



Regulatory Documentation Required for Banking and Exchange Operations



Groundwater Banking Programs Survey

Overall results relevant to SGA members

Administration/operations: programs providing recharge credits through “in-lieu” banking (surface water use offsets groundwater extractions) are applicable to the existing operations of SGA local member agencies

Loss factors: applied to recharged or stored water, range from 0% to 15%. Intended to attain or maintain positive storage balances, account for evaporation/transpiration, account for operational and non-recoverable basin losses, and to minimize political concerns.

Groundwater Banking Programs Survey

Results relevant to SGA members (cont'd.)

Regulatory documentation: a variety of regulatory documents required for banking and exchange operations: CEQA, NEPA, DHS permits, other regional plans and agreements.

Contaminants/PRPs: One program indicated that if contaminants from a Potentially Responsible Party (PRP) may possibly impact the banking program, the potential impact is managed through additional legal requirements on the PRP.

Groundwater Banking Programs Survey

Results relevant to SGA members (cont'd.)

Of overall interest is the variety of banking program examples that the survey provides, as well as the great degree of success, both operational and political, that these programs have demonstrated.

The survey indicates that groundwater banking in California is a viable mechanism for cooperative management of water resources.

Groundwater Banking Programs Update

Several new projects have come online since 2009:

- **Semitropic-Rosamond Water Bank Authority**
- **Kern Delta Water District**
- **Rosedale-Rio Bravo/Irvine Ranch Water District**
- **Antelope Valley-East Kern Water District (pilot)**
- **Madera Ranch (permitting finalized, easement in progress)**
- **New Southern California projects being considered**

Groundwater Banking Programs Update

New legislative requirements since survey completed:

SBX7-6 Groundwater Monitoring (and AB3030 Groundwater Management Plans)

SBX7-7 requirements for description of groundwater sources and uses in Agricultural Water Management Plans

Groundwater Banking Programs Survey

Questions/Discussion