



Water Economics and Financing

Water Markets in Integrated Water Management

New Frontiers for Water Management: The California Experience

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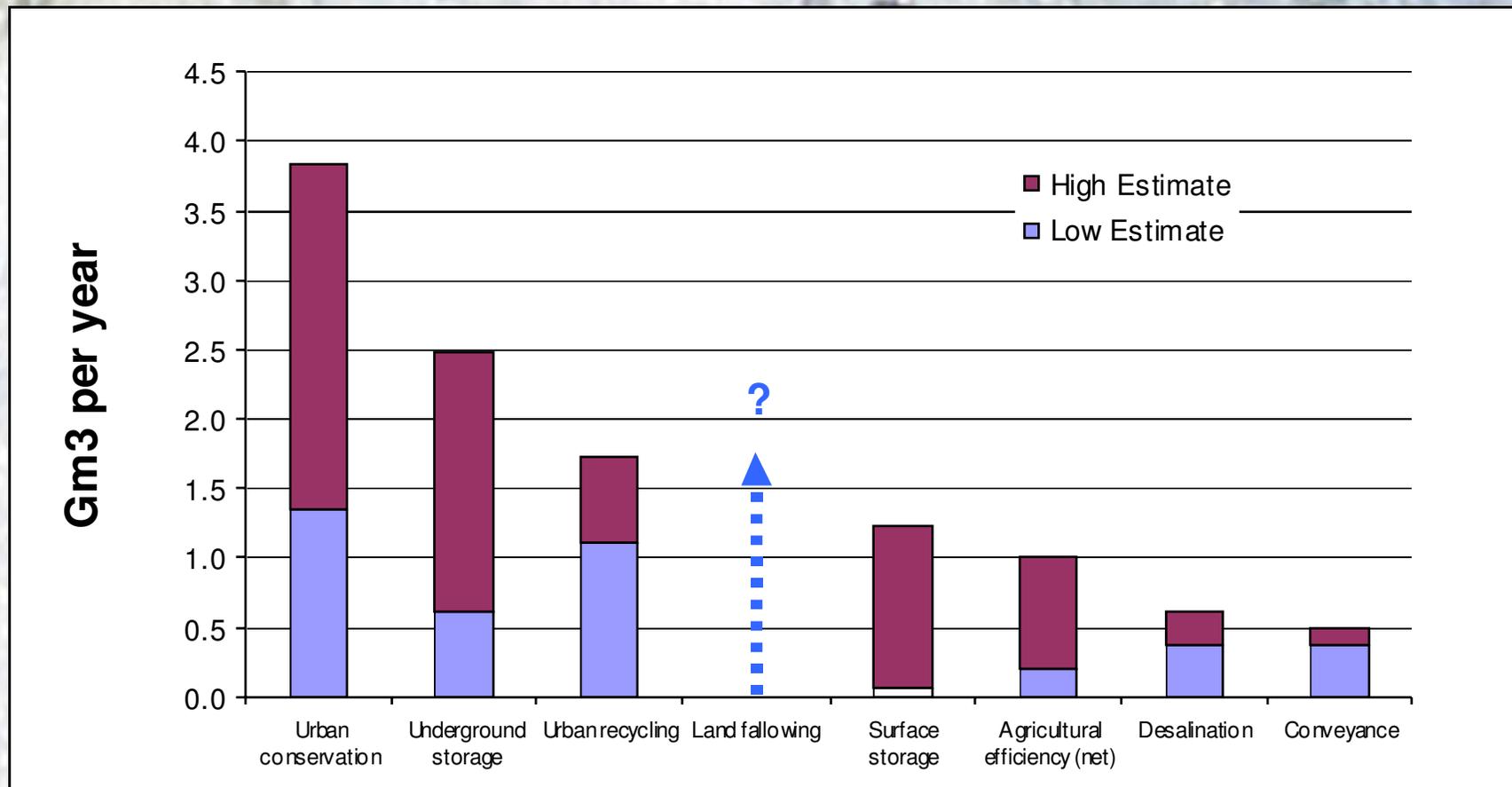
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The Challenging Context of Modern Water Supply Planning

- Demand growth: population
 - Supply cutbacks: environmental uses, basin overdraft, climate change(?)
 - Limits to traditional sources of expansion (surface storage, native groundwater reserves)
- Switch to portfolio approaches

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In Latest Water Plan, Non-traditional Sources Dominate the Portfolio



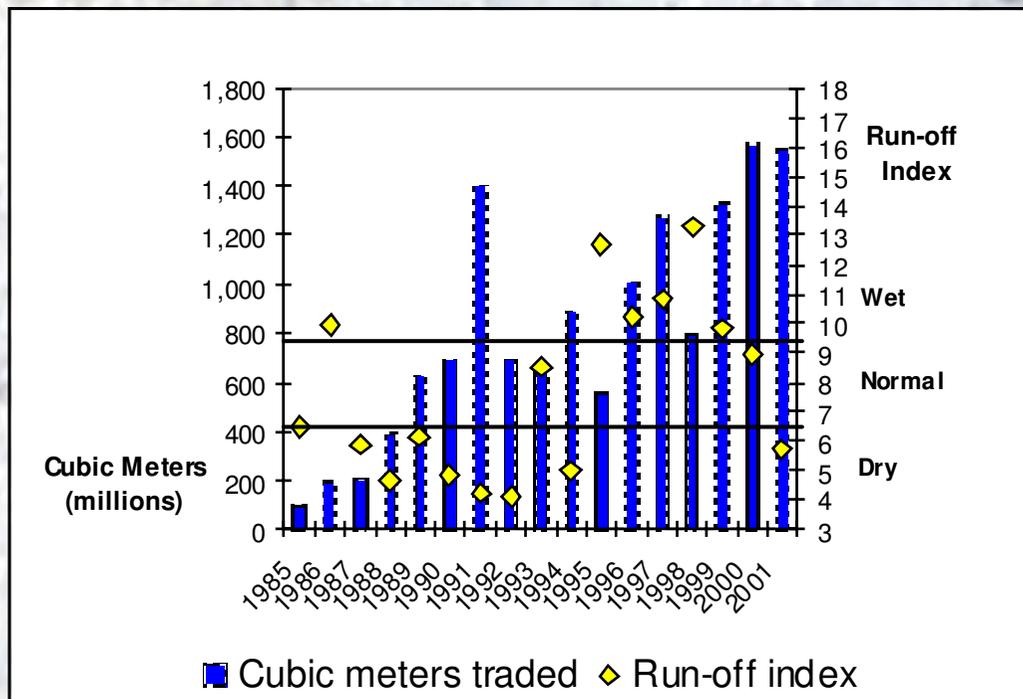
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Criteria for Assessing Portfolio Elements

- Cost
 - Reliability
 - Environmental impact
 - Institutional and social constraints
- Each method presents challenges

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Water Transfers: Cost-effective but Still Contentious

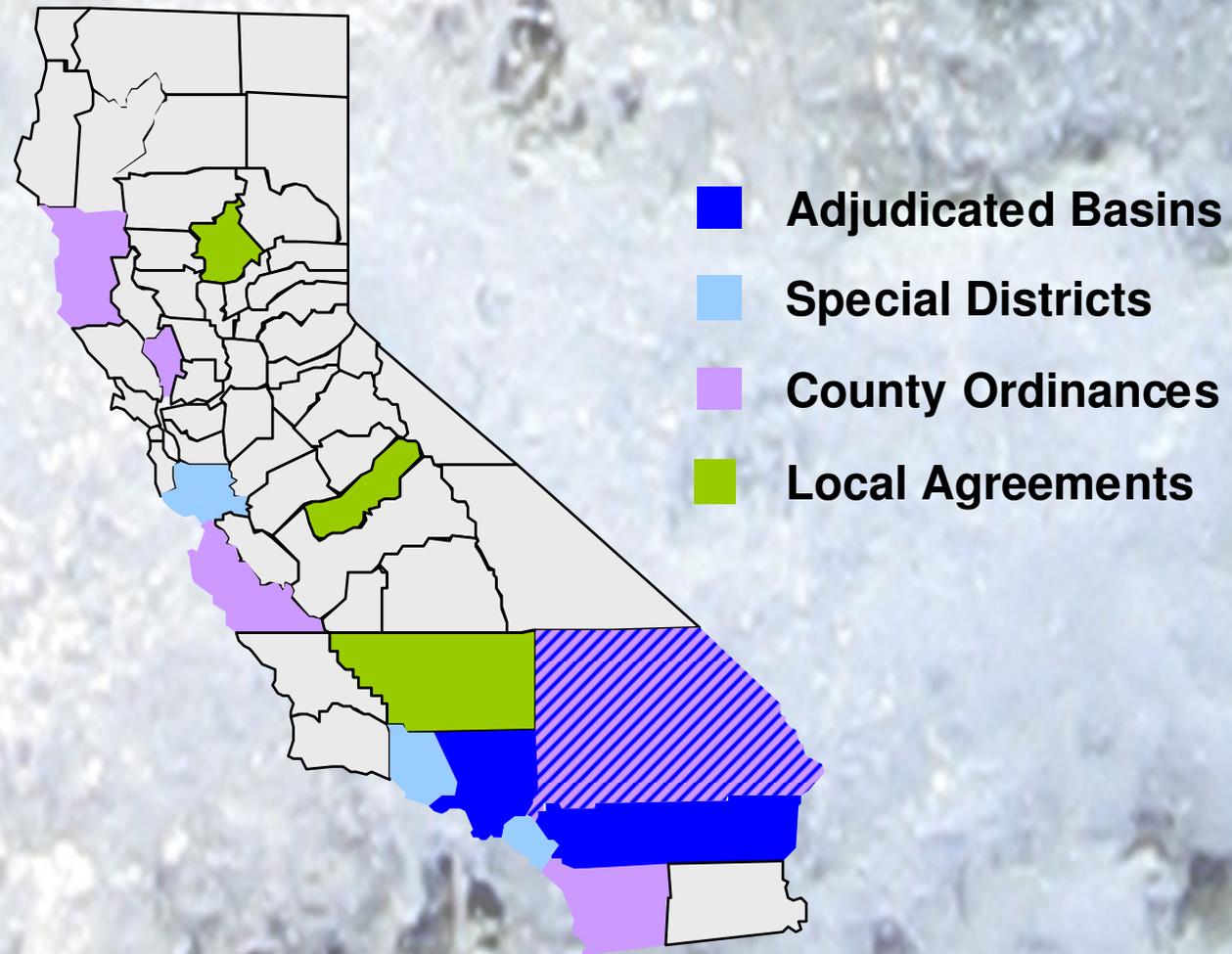


Annual transfers, 1985 - 2001

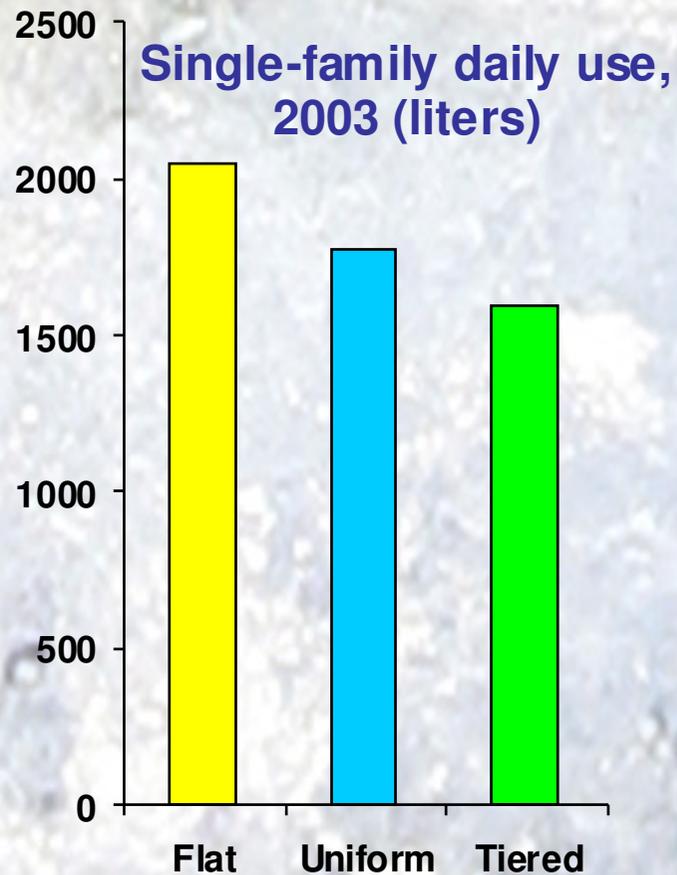
- Market growth since last major drought
- Concerns: impacts in source regions
- Still mostly short-term leases
- Need to expand multi-year options

Underground Storage: Great Potential with Proper Institutions

- Cheaper than new surface storage
- Tool for adaptation to climate change
- Need management to protect bankers and neighboring users



Urban Conservation: Tackling the Outdoor Frontier



- Outdoor use often > 50%
- Savings also reduce polluted runoff
- New landscapes and technologies can work
- Pricing does matter!!!

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Managing the Message on Reuse: Fostering Public Understanding

- This....



- ...or this?



“Toilet-To-Tap Plan Gets
Closer To Reality”
July 15, 2005



Portfolio approaches demand greater coordination among institutions

- Among water utilities to benefit from scale economies
- Between water and wastewater utilities for recycling
- Between water and land-use planners to build “water-smart”
 - Conservation, recycling
 - Capturing storm water run-off
- Between groundwater users to set basin rules

Effective Public Outreach is Also Key

- Public refusal can be a “deal-breaker”
 - Recycling
 - Desalination
 - Conservation
 - Water marketing
- Business community support can be crucial
 - Home builders
 - Garden supply stores
 - Landscape professionals

State & Federal Institutions Can Support Innovative Approaches

- Financial incentives for institutional reform
 - Groundwater management
 - Water planning
 - Water pricing
- Technical support
 - Basin characteristics
- Legal and regulatory changes
 - Water marketing
 - Water quality management (e.g. non-point source)



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Thank you!

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