SBX2 1
Nitrate in Groundwater
Report to the Legislature

REGULATORY OPTIONS & FUNDING SOURCES

SBX2 1 ITF Meeting

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Outline

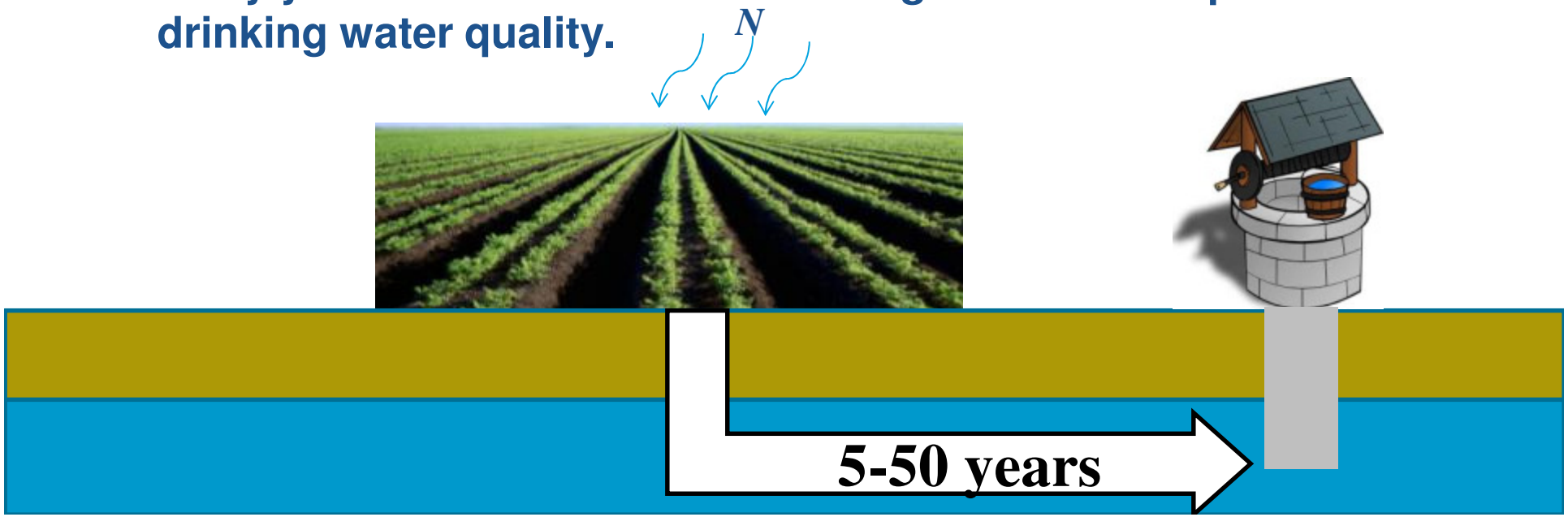
- Current Regulatory Programs
- Regulatory Options
- Current Funding Programs
- Funding Options

Current Regulatory Programs

Current Regulatory and Planning Programs: Major Findings

- **To date, regulations have been insufficient to control nitrate loading to groundwater.**
  - No regulatory program to hold agricultural dischargers responsible
  - Monitoring alone will not improve water quality

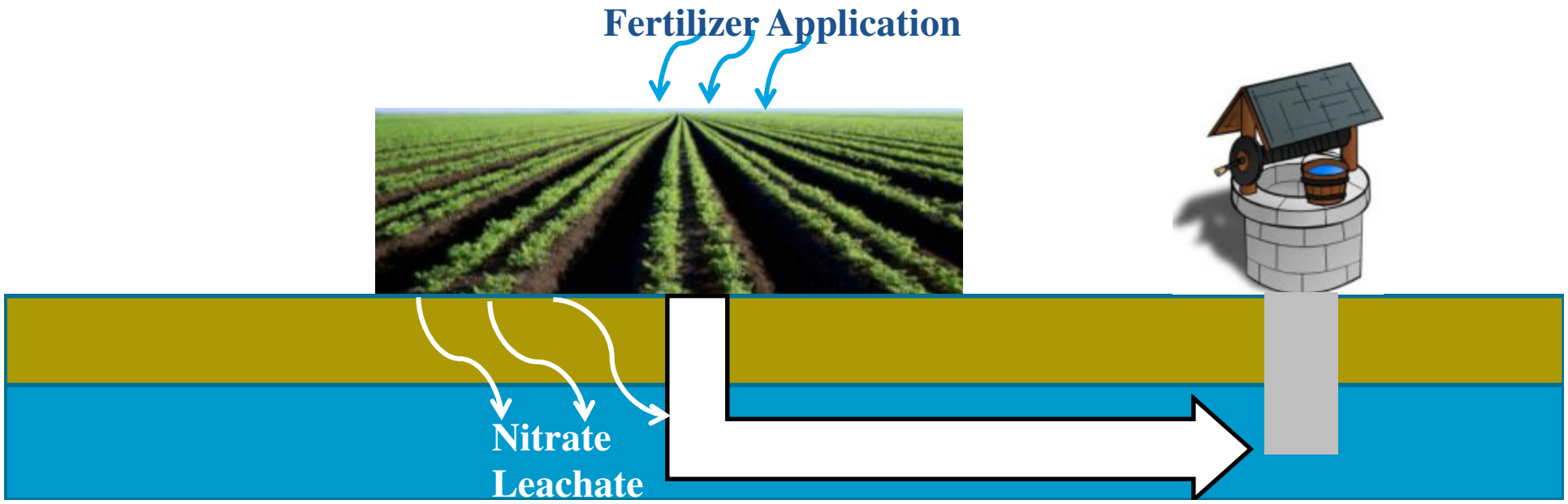
- **Many years are needed for nitrate regulations to improve drinking water quality.**



Regulatory Options

What can be regulated?

Regulated Entity	Abatement Costs (costs incurred to reduce NO3 loading to achieve a standard)	Monitoring / Enforcement Costs	Information Requirements	Revenue Raising
Fertilizer Application	Higher – regulate input	Low	Low	Maybe
Nitrate Leachate	Lower – regulate pollutant	High	High	Maybe



Regulatory Options

- Technology Mandate
- Performance Standard
- Fee
- Cap and Trade
- Information Disclosure
- Polluter Pays Liability Rules
- Negotiation or Payment for Service
- De-designation of Beneficial Use

On Fertilizer Application
or
Nitrate Leachate

Recommendations for Regulatory Action

1. Nitrate dischargers should incur the social costs of their discharges.

2. Nitrate regulation should focus on nitrogen fertilizer use, rather than nitrate leachate.

3. Market-based instruments are likely to perform better than command-and-control approaches.

4. A fertilizer fee is promising for long-term regulation and funding.

5. To improve information, extend current pesticide monitoring policies to include fertilizer.

Current Funding Programs

Chronic Funding Problems

1. Small, rural communities
2. Communities are spread-out

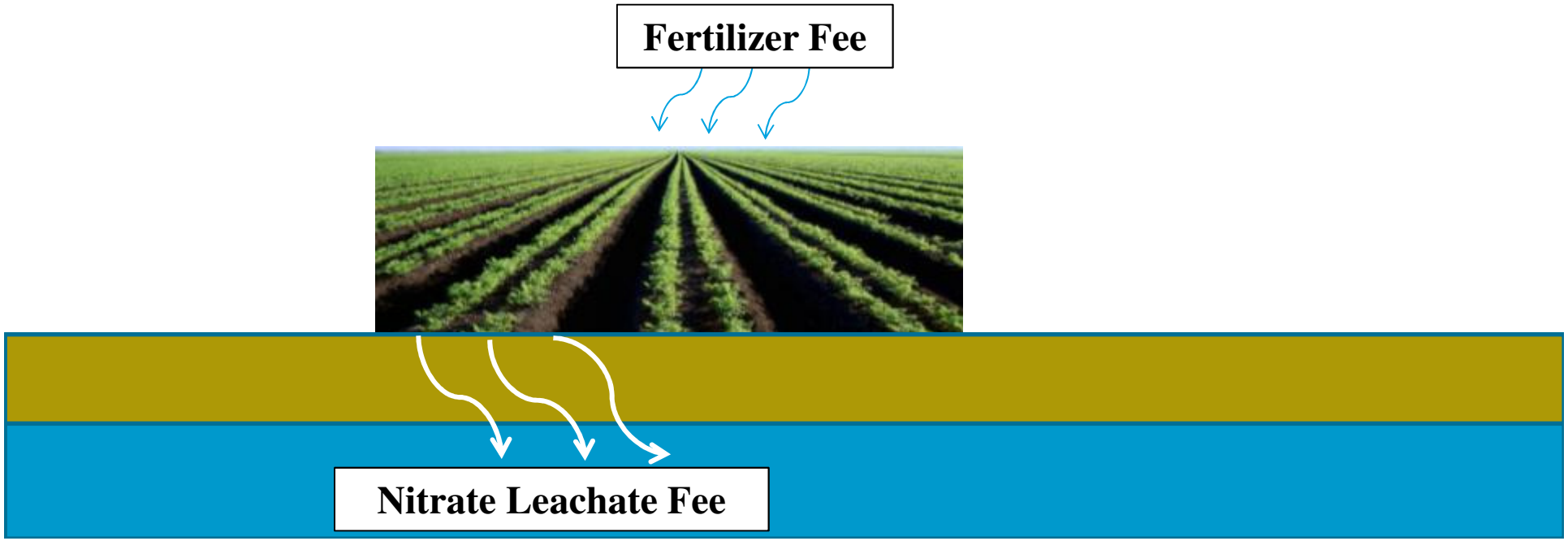
Higher infrastructure costs than urban areas, so unit cost of drinking water much higher

3. Lack economies of scale
4. Less Technical, Managerial, Financial (TMF) resources

Difficulty with:
- **loans**
- **funding applications**
- **O&M**

Funding Options

Funding Options



Funding Options

Fixed or Volumetric Fee on Agricultural Water

Fertilizer Fee

Nitrate Leachate Fee

Funding Options

Fixed or Volumetric Fee on Agricultural Water

Fertilizer Fee

Fixed or Volumetric Fee on Drinking Water

Nitrate Leachate Fee

Funding Options

Fixed or Volumetric Fee on Agricultural Water

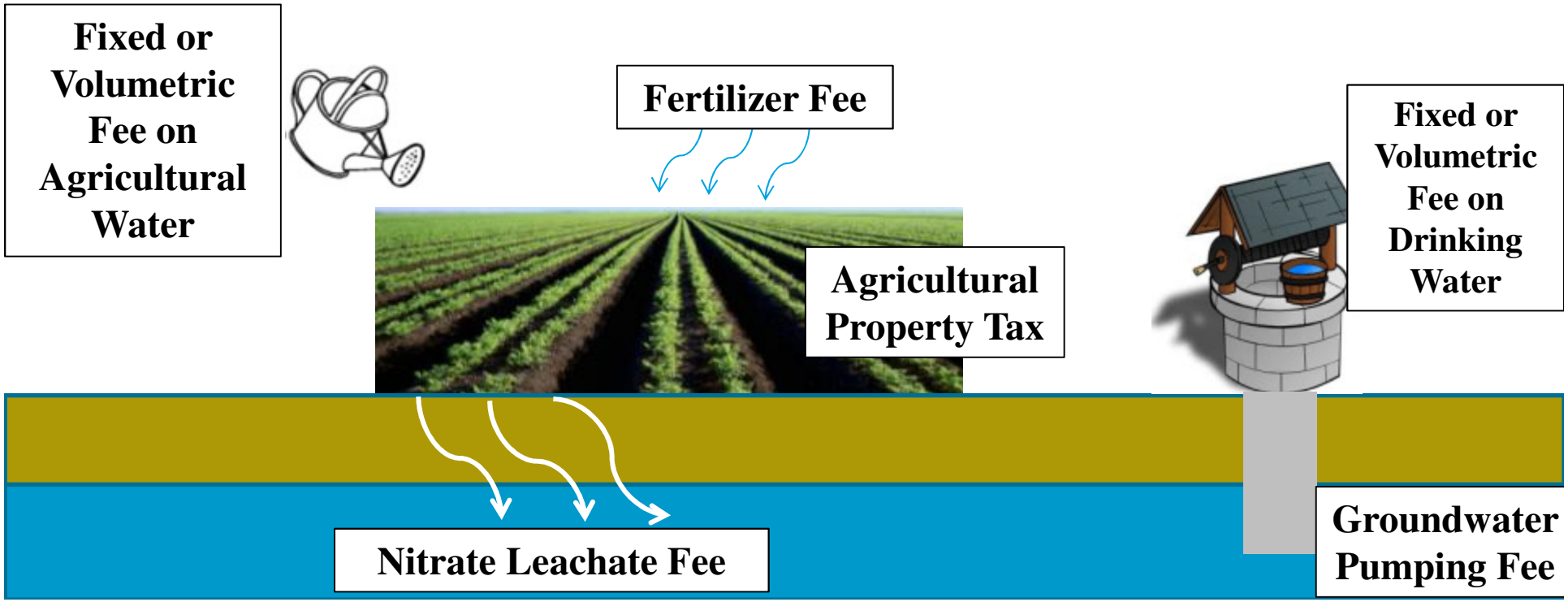
Fertilizer Fee

Fixed or Volumetric Fee on Drinking Water

Nitrate Leachate Fee

Groundwater Pumping Fee

Funding Options



Funding Options

Cap and Trade with Auctioned Permits

Fixed or Volumetric Fee on Agricultural Water

Fertilizer Fee

Agricultural Property Tax

Fixed or Volumetric Fee on Drinking Water

Nitrate Leachate Fee

Groundwater Pumping Fee

Funding Options

Cap and Trade with Auctioned Permits

Food Tax

Fee on Bottled Water

Fixed or Volumetric Fee on Agricultural Water

Fertilizer Fee

Agricultural Property Tax

Fixed or Volumetric Fee on Drinking Water

Nitrate Leachate Fee

Groundwater Pumping Fee

Recommendations for Funding Policies

- **Where appropriate, combine funding programs.**
  - Link sources of funding for water supply and wastewater problems.
- **Allocate funding to long-term drinking water solutions, particularly regionalization of small systems.**
- **Assist small systems in funding applications.**
  - grant or other special assistance program
  - larger consolidated effort by CDPH, SWRCB, DWR, an Integrated Regional Water Management Plan, and the counties
- **CDPH should allow another entity to apply to SRF for planning funds for a disadvantaged unincorporated community, while the community is in the process of forming a recognized entity.**

Some Thoughts on Revenue Policies

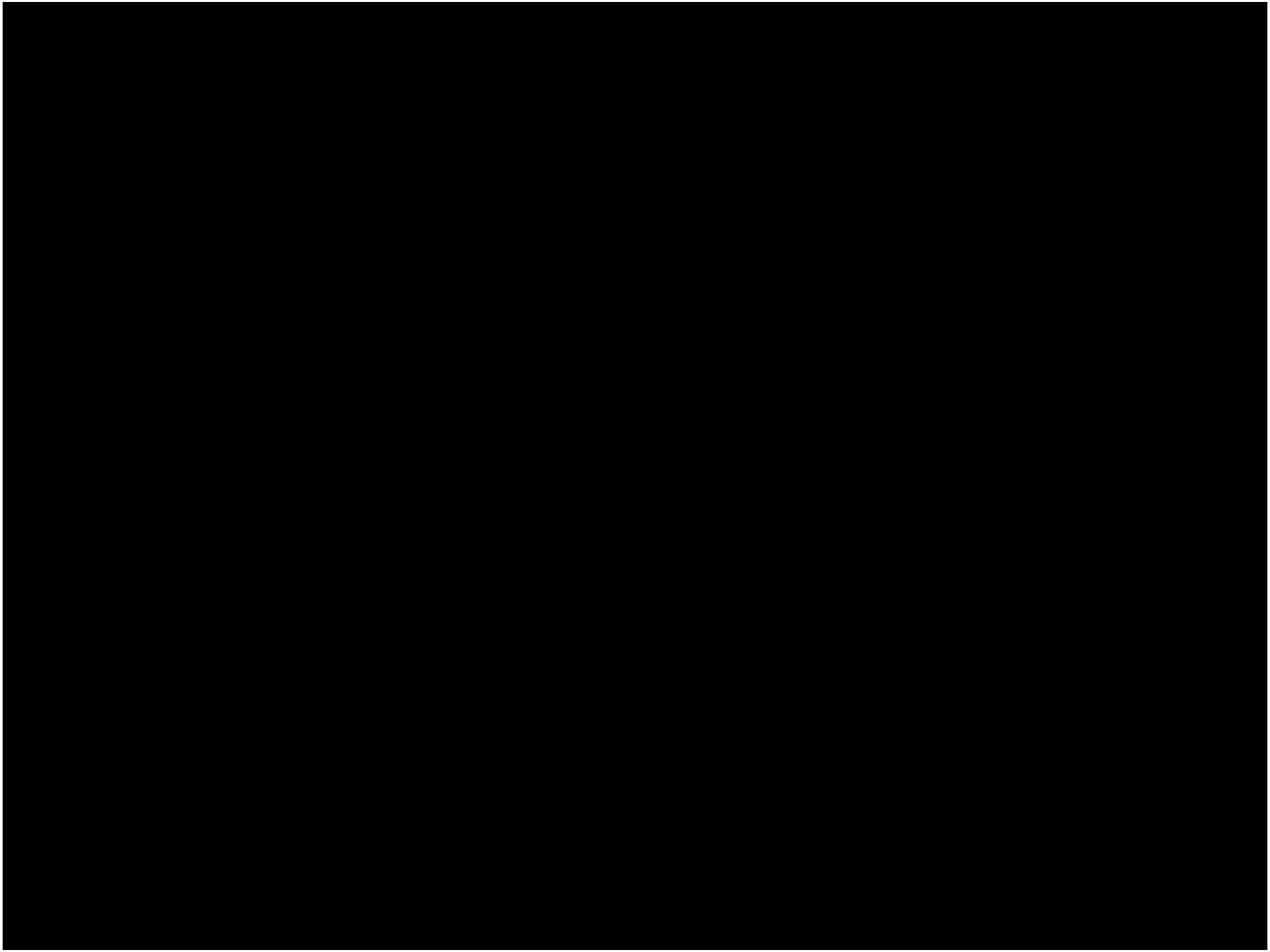
- **Regulators should expand proven and longer-term funding mechanisms.**
  - Loans through the State Revolving Fund and the California Infrastructure and Economic Development Bank.
  - Expand subsidized loans and grant for small/disadvantaged communities

- **Regulators should build on existing institutions and infrastructure.**
  - Raising the mill assessment on fertilizer sales would raise $3 M/yr.

- **Introduce a special fee on nitrogen fertilizer sales statewide:**
  - A sales tax
  - A fee/excise tax on commercial fertilizer and organic fertilizer sources

- **A more comprehensive statewide fee on water use could support many beneficial activities**

Comments/Questions?



Current Funding Programs: Major Findings

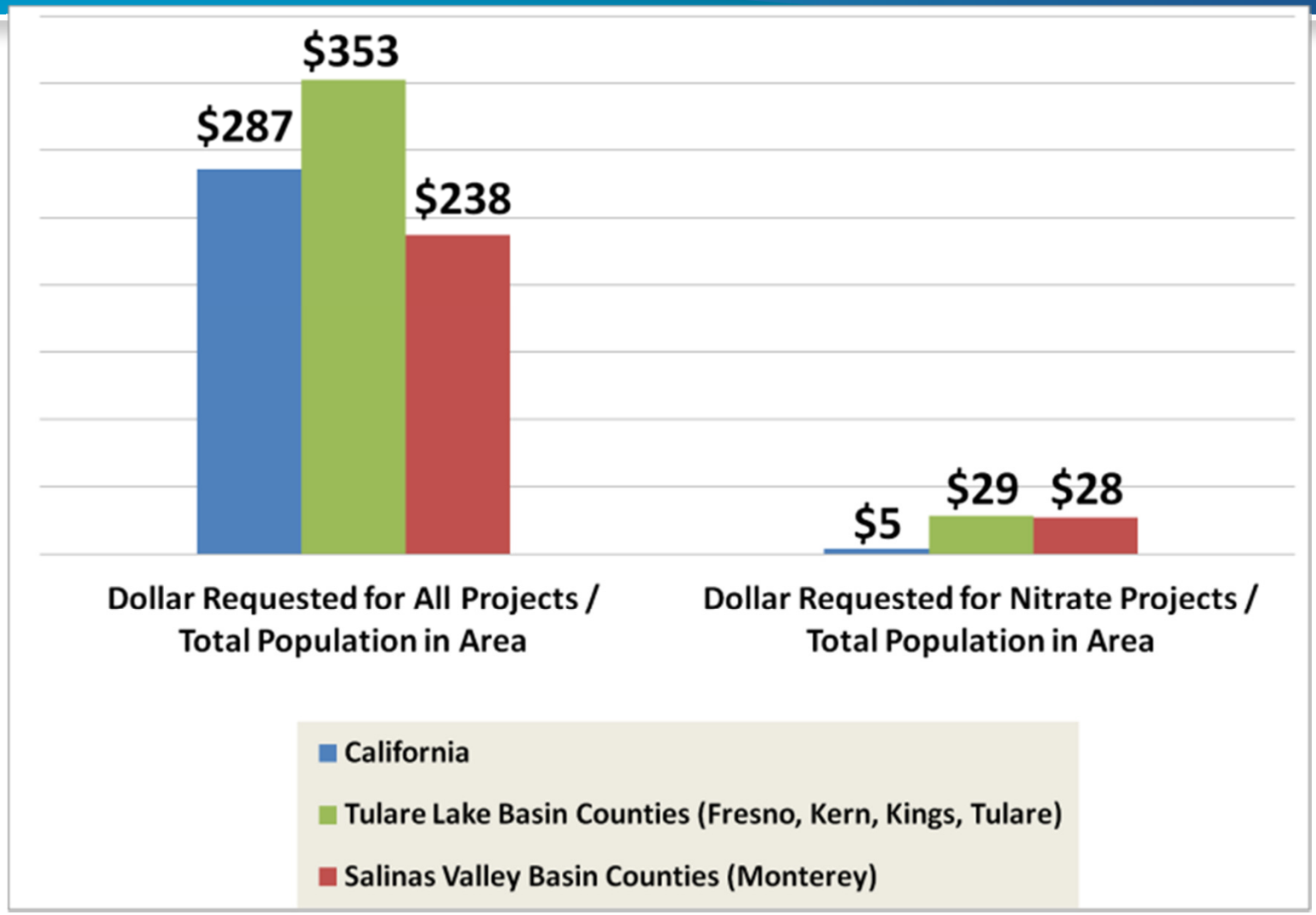
- **Small water system costs are high and small systems already face chronic financial problems.**

- **Current funding cannot ensure clean drinking water in the Salinas Valley and Tulare Lake Basins**
  - At least $25-$30 million per year needed for highly susceptible populations
    - $33-$40/year per susceptible person
    - $6-$8/year per acre of irrigated land

- **Most current state funding for nitrate contamination problems is temporary.**
  - Dominated by general obligation bonds for loans through state propositions, federal economic stimulus package grants

- **While regionalization is sometimes promising, little funding is provided for facilitating this solution.**

$ Requested / Person, as submitted to the DWSRF



Source: 2010-2011 Final Fundable Project Priority List (Oct. 2010)

Funding Options

OPTION	EXAMPLE
Fixed Fee on drinking water agricultural water	Power Purchase Agreements made in 2006: Investors offered free solar panel installation in return for a 25 year contract for electricity at a fixed price.
Volumetric Fee on drinking water agricultural water	Gas Public Purpose Program Surcharge: A volumetric fee ($0.08 / therm of gas used) on gas bills in CA to fund gas assistance programs for low income customers, energy efficiency programs, and public-interest research and development.
Groundwater Pumping Fee	Pajaro Valley Groundwater Pumping Fee: A per acre-foot charge to secure financing for debt stabilization and to address groundwater overdraft.
Fee on Bottled Water	California Redemption Value: An excise tax (or fixed fee) placed on each recyclable bottle sold at the point of sale.
Agricultural Property Tax	CA State Property Tax: A statewide ad valorem tax equal to a percentage of the purchase price is collected from all properties in the state, with some exceptions.
Fertilizer Fee	Mill Assessment Program: To fund the pesticide regulatory program, the state imposes a 2.1 cents fee per dollar of pesticide sales at the point of first sale into the state.
Nitrate Leachate Fee	Duty on Wastewater: In the Netherlands, a tax is imposed on each kg of nitrate in wastewater.
Cap and Trade with Auctioned Permits	Title IV of the Clean Air Act Amendments: Established a tradable permit approach to control sulfur dioxide emissions. A small portion of permits were sold in an auction.
Food Tax	State Sales Tax Rate for Soft Drinks: The state of Maryland charges a 6% sales tax for soft drinks (The Henry J. Kaiser Family Foundation, 2009).

Funding Options: Major Findings

- **Many options exist to fund clean drinking water, but all require someone to bear the cost.**

- **Some funding sources give polluters a price signal.**
  - Fees and auctioned permits induce emitters to reduce use of fertilizer or nitrate.

- **Farmers do not pay a sales tax on fertilizer in California.**
  - Expanding sales tax to fertilizer could generate $29 million per year in the study area and might reduce applied nitrogen by 5-10%.

Regulatory Options to Manage Nitrate

Option	Abatement Costs	Monitoring and Enforcement Costs	Information Requirements	Revenue Raising
Technology Mandate	Fertilizer Application = High NO3 Leachate = Low	Fertilizer Application = Low NO3 Leachate = High	Fertilizer Application = Low NO3 Leachate = High	No (unless fines)
Performance Standard				No (unless fines)
Fee				Yes
Cap and Trade				Yes (if permits auctioned)
Information Disclosure	Medium	Low	Low	No (unless fines)
Polluter Pays Liability Rules	Low	High	High	Yes
Beneficiary Pays	High	Medium	High	Yes (if payments made to state)
De-designation of Beneficial Use	Low	High	Medium	No

Regulatory Options: Major Findings

1. Many options exist to regulate nitrate in groundwater, but there is no ideal solution.

2. Fertilizer regulations have lower administrative costs and information requirements, but may be less direct in achieving nitrate abatement targets.

3. Market-based regulations reduce overall abatement costs, but require cap and trade institutions.

4. Well-defined and enforceable regulations are needed for liability rules to work.

5. Regulations cannot solve the drinking water quality problem in the short run.