

# Municipal Water Reuse In An Increasingly Complex Regulatory Environment

Presented by:

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# Outline of Presentation

1. Policy On Recycled Water Use
2. History And Progress Of Recycled Water Use In California
3. Current Authorized Uses
4. Changes In Use Of Wastewater
5. Emerging Issues

# Drought Spurs Demand for Recycled Water

- *Historic Drought Prompts Water Innovation in California – Can It Be a Model?*
- *Epic Water Recycling Record Set in California in Bid to Highlight Extreme Weather*
- *Invest in Water Reuse Infrastructure for a Strong American Economy*
- *Wastewater Becomes a Resource in Silicon Valley*
- *Pasadena vs. L.A. in a Fight for Purple-pipe Water*
- *Olivenhain Municipal Water District's Recycled Water Expansion Continues*
- *Sonoma County Groundwater Management Agencies get \$3 Million in State Grants*
- *California to Add Recycled Water to Reservoirs*
- *Recycled Water from Sewers coming to California Taps*
- *Innovation, Investment, and Infrastructure Needed to Replenish California Groundwater Basins, New Report Shows*
- *'Toilet to Tap' Water Surprisingly Good, Study Finds*



# State Policy Encouraging Recycled Water Use

- Maximize beneficial use of water and avoid waste (Cal. Const. Art. X, § 2)
- Maximize reuse of reclaimed water to conserve water resources (Wat. Code § 461) and to meet growing demands for water (Wat. Code § 13512)
- Certain non-potable uses declared to be a waste of water when reclaimed water is available (Wat. Code § 13550)
- Emergency drought legislation restricted use of potable water for non-potable use (23 CCR § 864 [repealed]), which encouraged use of recycled water but also decreased supplies of wastewater available for recycling
- Numerous implementing statutes and regulations

# History of Water Recycling Goals in CA

- 1970:** First quantitative statewide survey completed – 175 TAF
- 1977:** Office of Recycling established; first target: 400 TAF increase in 5 years
- 1987:** Comprehensive statewide survey conducted
- 1991:** Goals established in Wat. Code § 13577
- 2003:** DWR Task Force determines potential use of 890 – 1,170 TAF by 2010 and 1,850 – 2,250 TAF by 2030
- 2009:** Recycled Water Policy mandates increasing use over 2009 levels by 200 TAF by 2020 and 300 TAF by 2030; also establishes goals of increasing use over 2002 levels by 1 MAF by 2020 and 2 MAF by 2030.

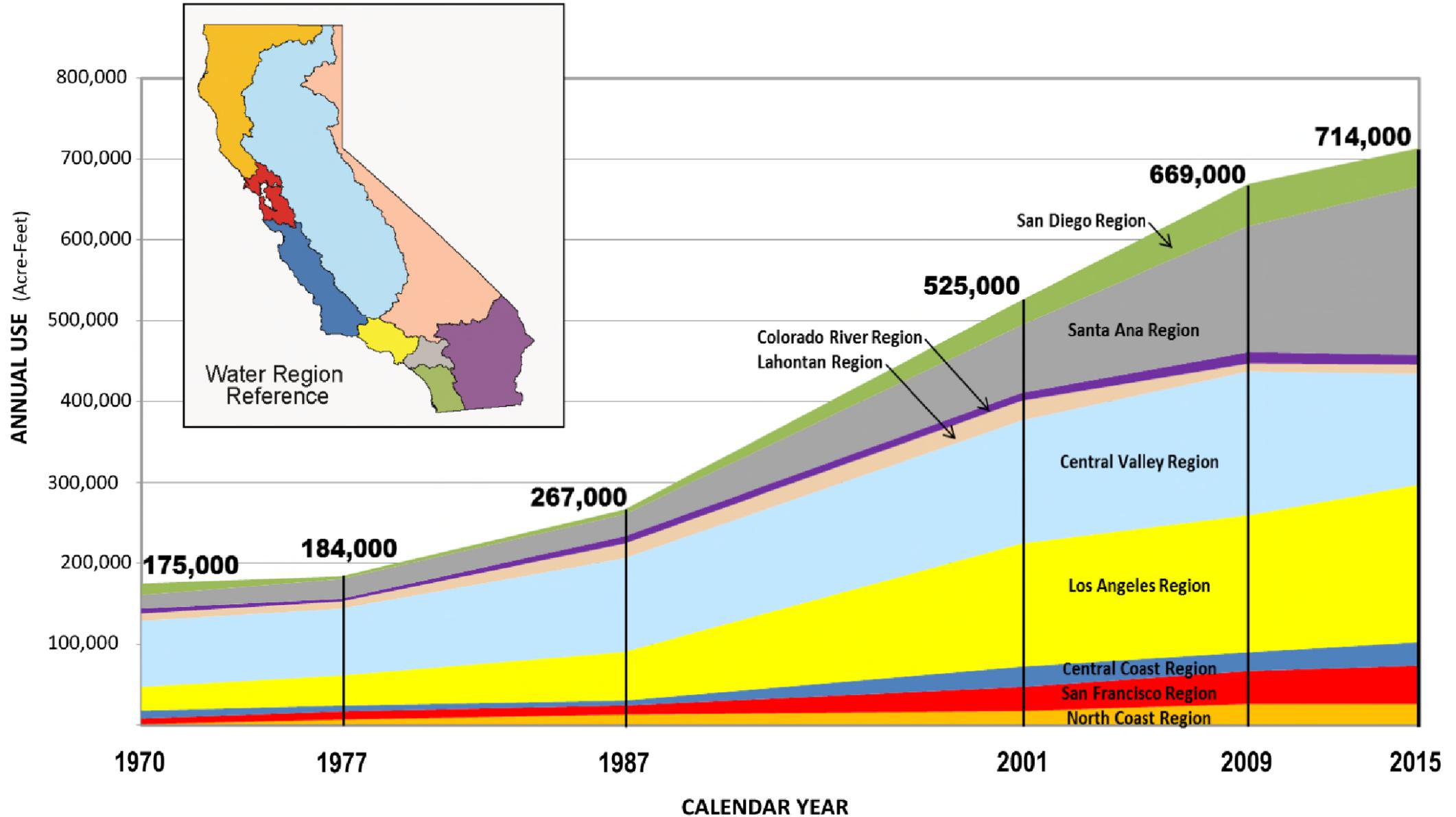
*Source: Proposed Revisions to California's 2020 and 2030 Municipal Wastewater Recycling Goals, DWR presentation (March 2013)*

# Progress in Meeting Recycling Goals

- Wat. Code § 13578 – 700 KAFY by 2000 and 1 MAFY by 2010
  - *Did not achieve*
- Recycled Water Policy mandate – 869 KAFY by 2020 and 1,269 KAFY by 2030
  - *May achieve*
- Recycled Water Policy goals – 1,525 MAFY by 2020 and 2,525 MAFY by 2030
  - *Unlikely to achieve*
- SWRCB recently reported that in 2017 alone it funded \$748 M in recycled water projects that are expected to generate additional 45 KAFY

Source: Proposed Revisions to California's 2020 and 2030 Municipal Wastewater Recycling Goals, DWR presentation (March 2013)

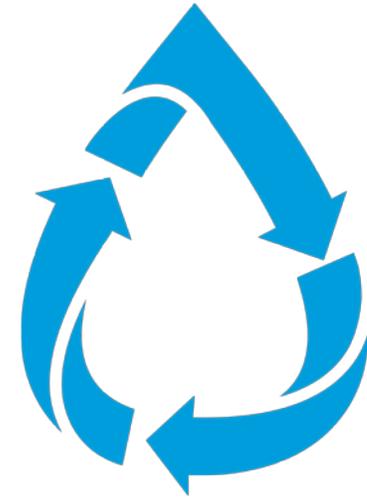
# California Recycled Water Use Since 1970



Source: Department of Water Resources, Municipal Recycled Water (July 29, 2016)

# Current Authorized Uses

- Direct Non-Potable Use
- Indirect Potable Use
  - Groundwater augmentation
  - Reservoir augmentation (*coming soon*)
- Stream augmentation / habitat restoration



# Authorized Uses by Treatment Level

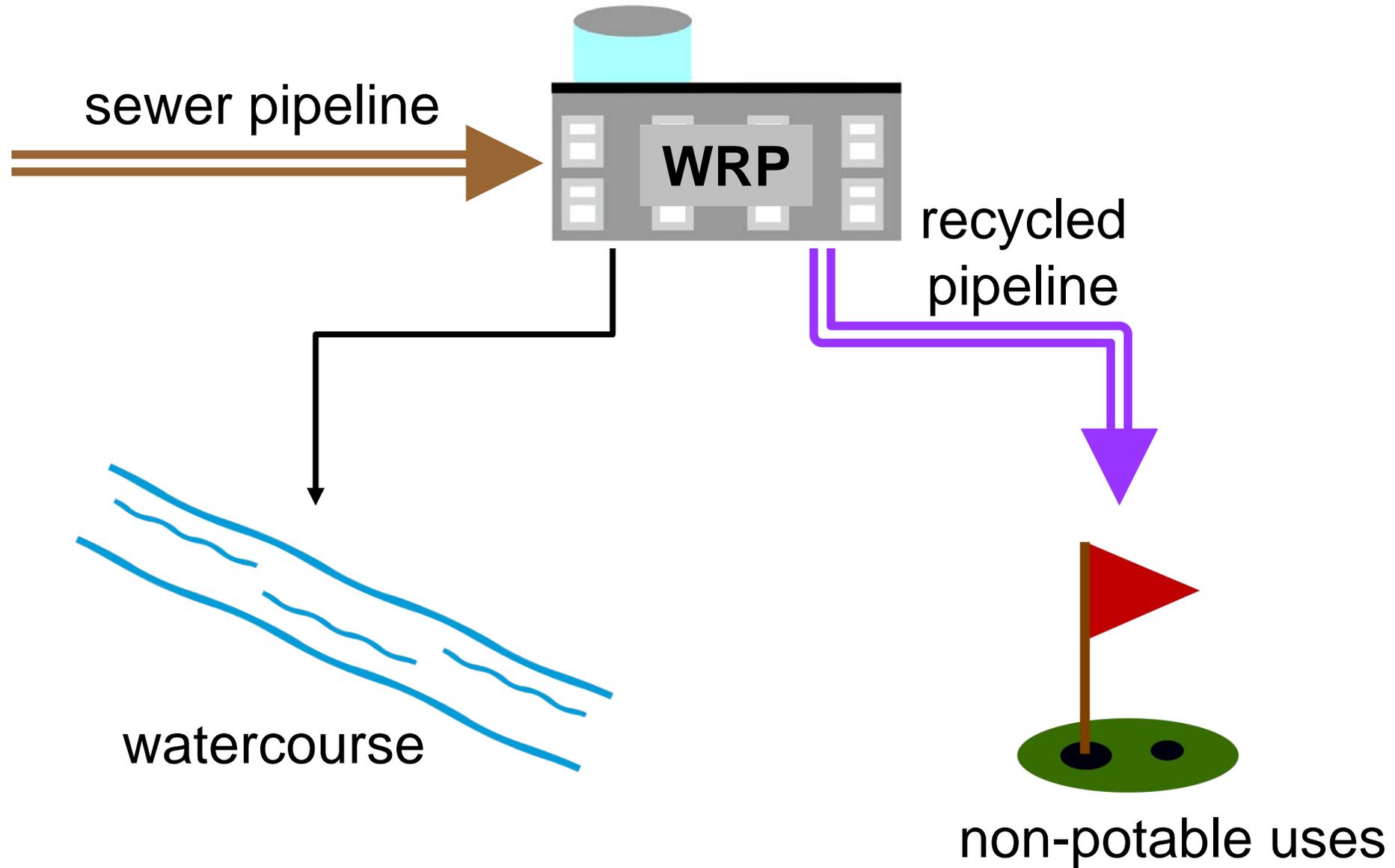
Treatment Level	Use allowed by Title 22
Advanced	<ul style="list-style-type: none"><li>• Groundwater replenishment by subsurface injection</li><li>• Surface reservoir augmentation</li></ul>
Disinfected Tertiary	<ul style="list-style-type: none"><li>• Residential landscaping, golf courses, school yards</li><li>• Laundries, artificial snow-making</li><li>• Industrial process water with worker contact, cooling, a/c</li><li>• Groundwater replenishment by surface application</li></ul>

*Proposed Revisions to California's 2020 and 2030 Municipal Wastewater Recycling Goals, DWR presentation (March 2013).*

# Authorized Uses by Treatment Level

Treatment Level	Use allowed by Title 22
Disinfected Secondary-2.2	<ul style="list-style-type: none"><li>• Food crops with surface irrigation</li><li>• Restricted recreational impoundments</li></ul>
Disinfected Secondary-23	<ul style="list-style-type: none"><li>• Nurseries, sod farms with unrestricted access</li><li>• Freeway landscaping, golf courses with restricted access</li><li>• Boiler feedwater, concrete mixing, soil compaction</li></ul>
Undisinfected Secondary	<ul style="list-style-type: none"><li>• Fodder, fiber, seed crops, nurseries, sod farms</li><li>• Sanitary sewer flushing</li></ul>

# Direct Non-potable Use

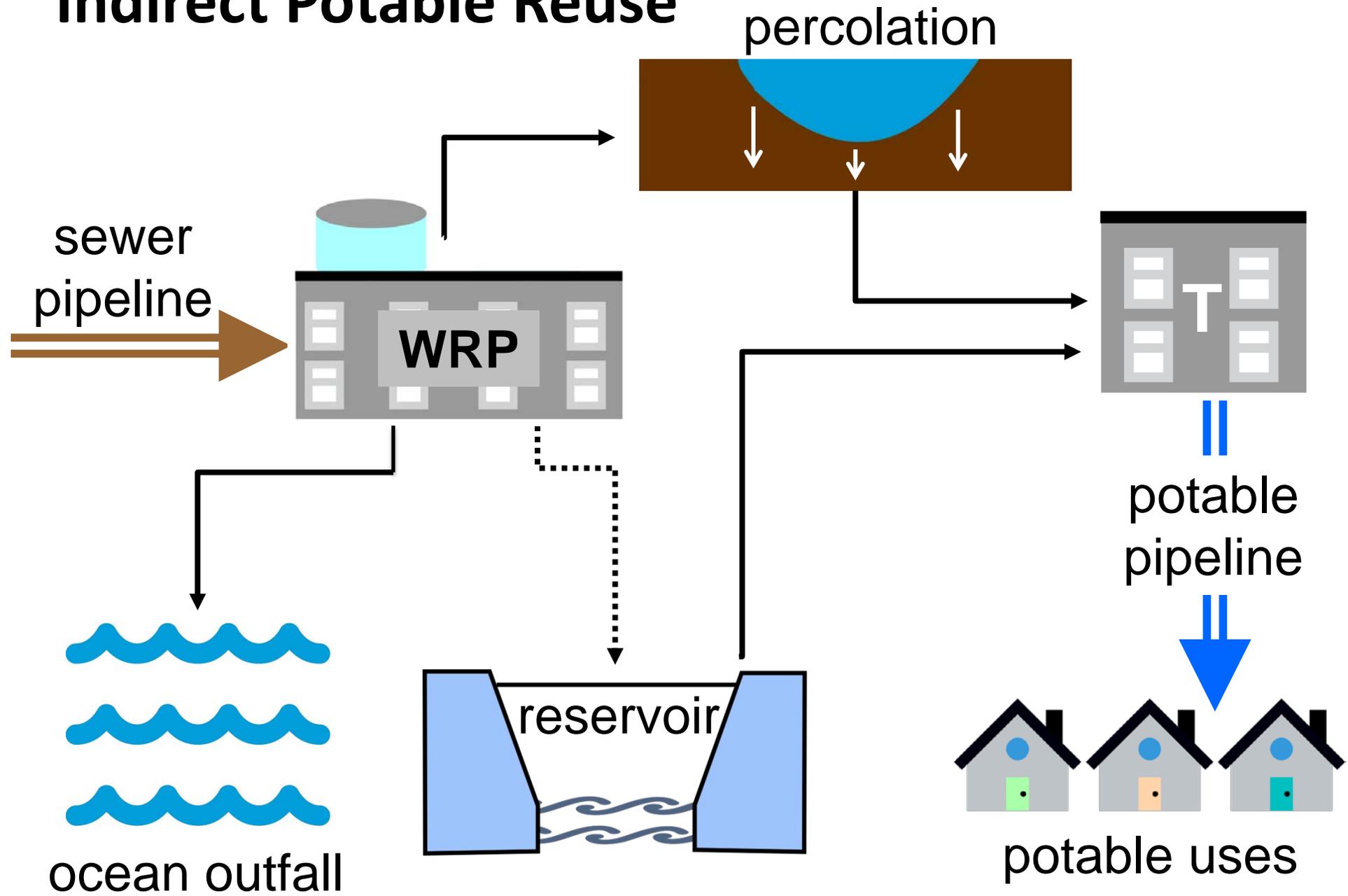


# Direct Non-potable Use

- Uses:** Irrigation, cooling, a/c, recreational impoundment, industrial and commercial
- Treatment:** Undisinfected secondary – disinfected tertiary
- Permitting:** SWRCB General WRRs and RWQCB WDRs (or RWQCB Individual WRRs/WDRs, RWQCB MRP)
- Other:** Model Water Efficient Landscape Ordinance



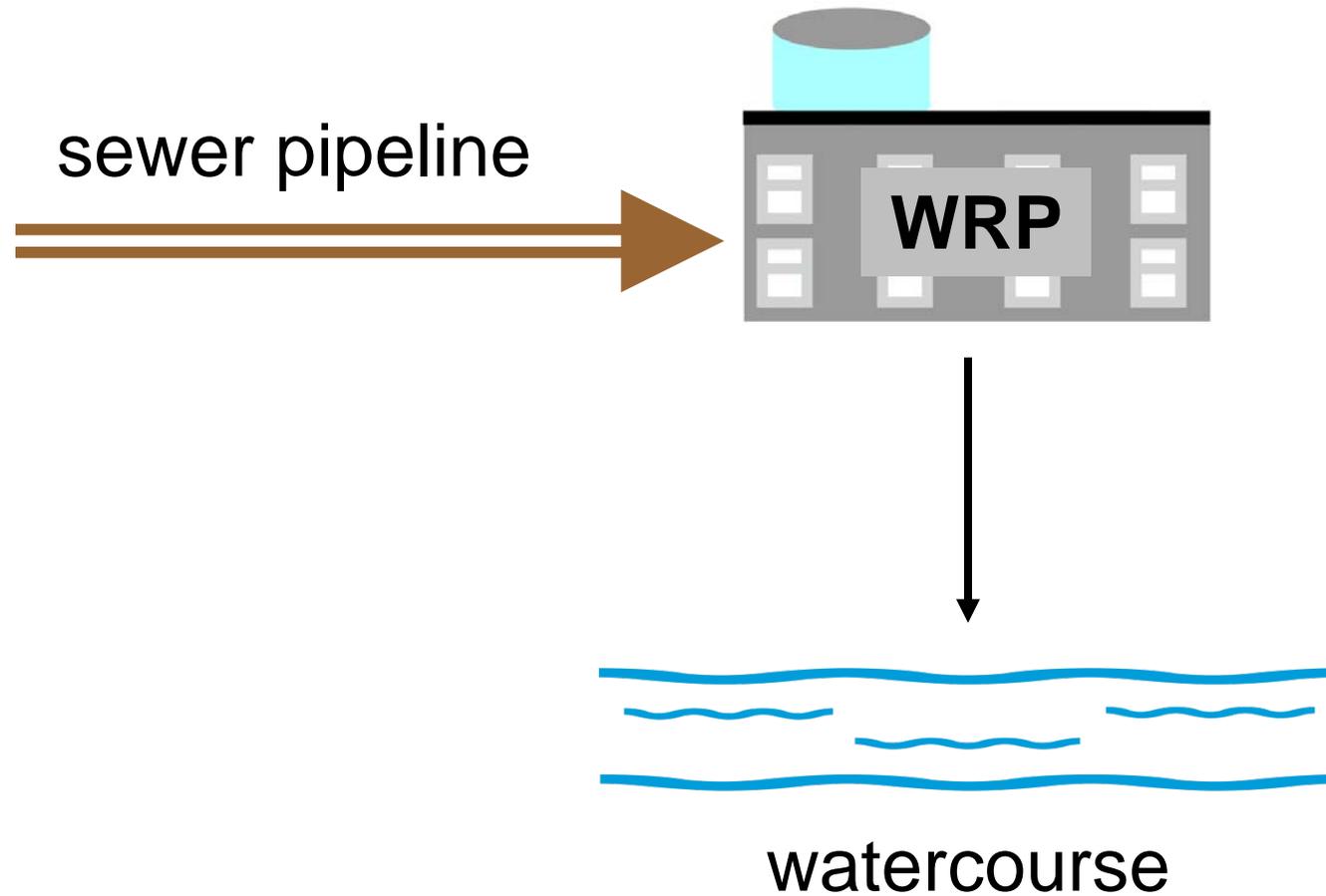
# Indirect Potable Reuse



# Indirect Potable Use

- **Groundwater Augmentation:**
  - Uses: All potable uses
  - Treatment: Advanced
  - Permitting: RWQCB WDRs/WRRs or MRP
- **Reservoir Augmentation (*coming soon*)**
  - Uses: All potable uses
  - Treatment: Advanced
  - Permitting: RWQCB WDRs/WRRs or MRP
  - Developments: 2018 regulations not yet operative

# Stream Augmentation / Habitat Restoration



# Stream Augmentation

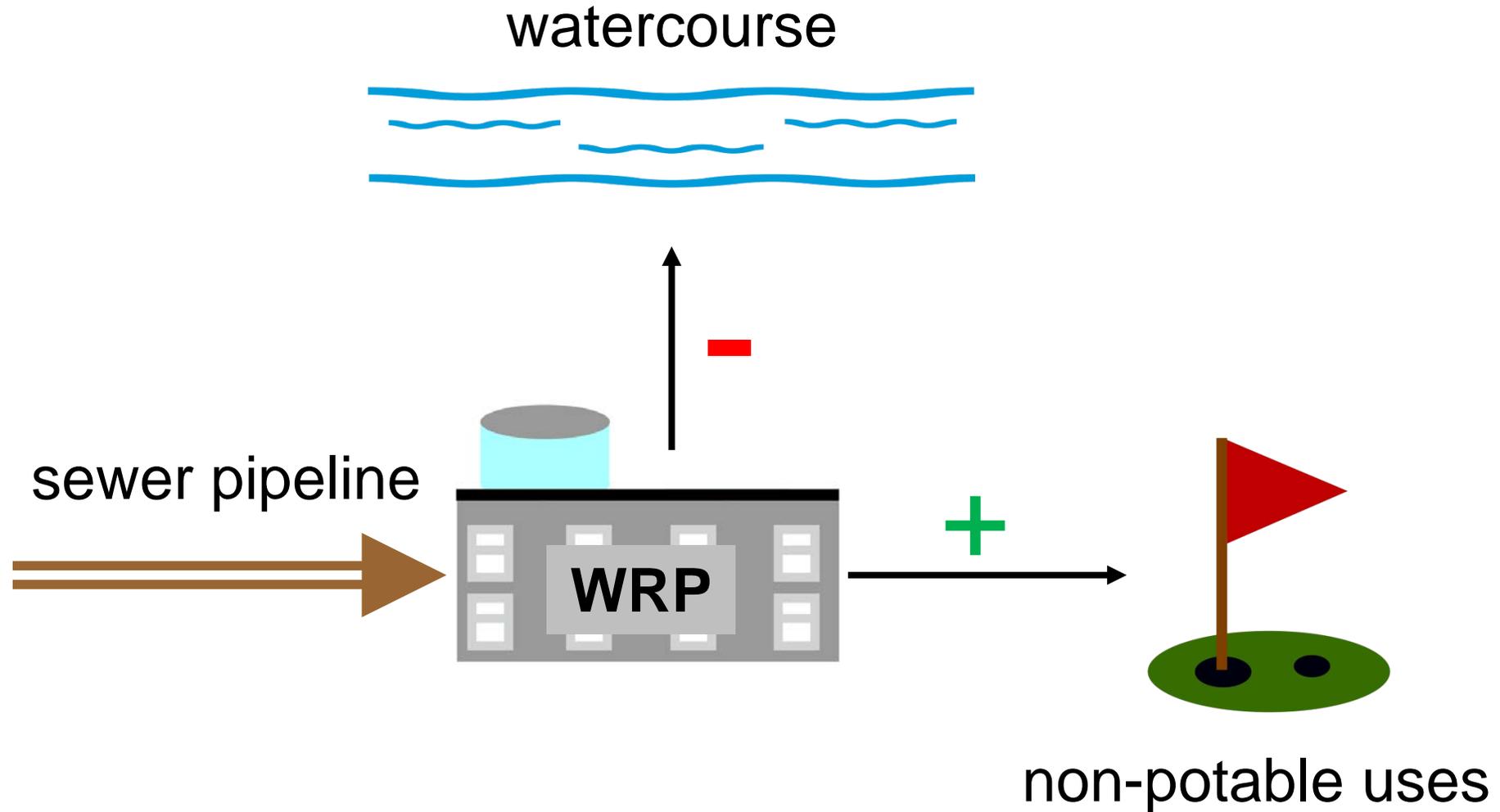
**Uses:** Dedication of treated wastewater to watercourse for the purpose of maintaining or enhancing fishery, wildlife, recreational, or other instream beneficial uses (Wat. Code § 1212)

**Permitting:** RWQCB WDRs; SWRCB approval of petition for change (Wat. Code § 1707); other (stream alteration, etc.)



# Changes in Use of Treated Wastewater

# Changes in Use of Treated Wastewater



# Changes in Point of Discharge, Place of Use or Purpose of Use

- SWRCB approval required for change to use of treated wastewater resulting in decreased flow (Wat. Code § 1211)
- Process:
  - File wastewater change petition with SWRCB
  - Notice to CDFW and public
  - Protest
  - SWRCB Investigation
  - CEQA and ESA
  - Hearing may be required
- SWRCB approves, denies, or conditions petition

# Change Petitions

- Change Petition Process (Wat. Code § 1700 et seq.)
  - Includes wastewater change petitions
- Required SWRCB findings:
  - No injury to another legal user
    - Ownership of treated wastewater (Wat. Code 1210)
    - Common law rights to developed and salvaged water supplies
  - No unreasonable harm to instream uses
  - In the public interest

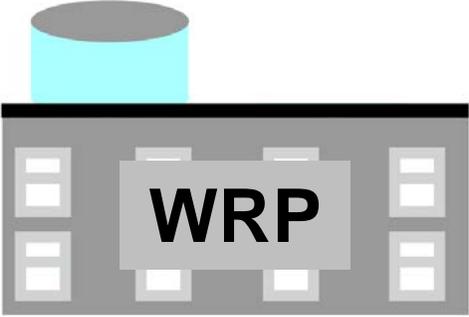
# Exclusive Right to Treated Wastewater

City B

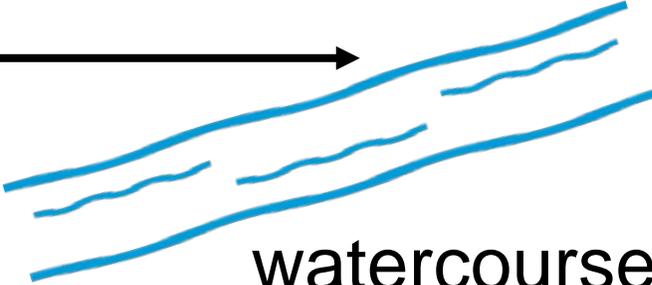
City A



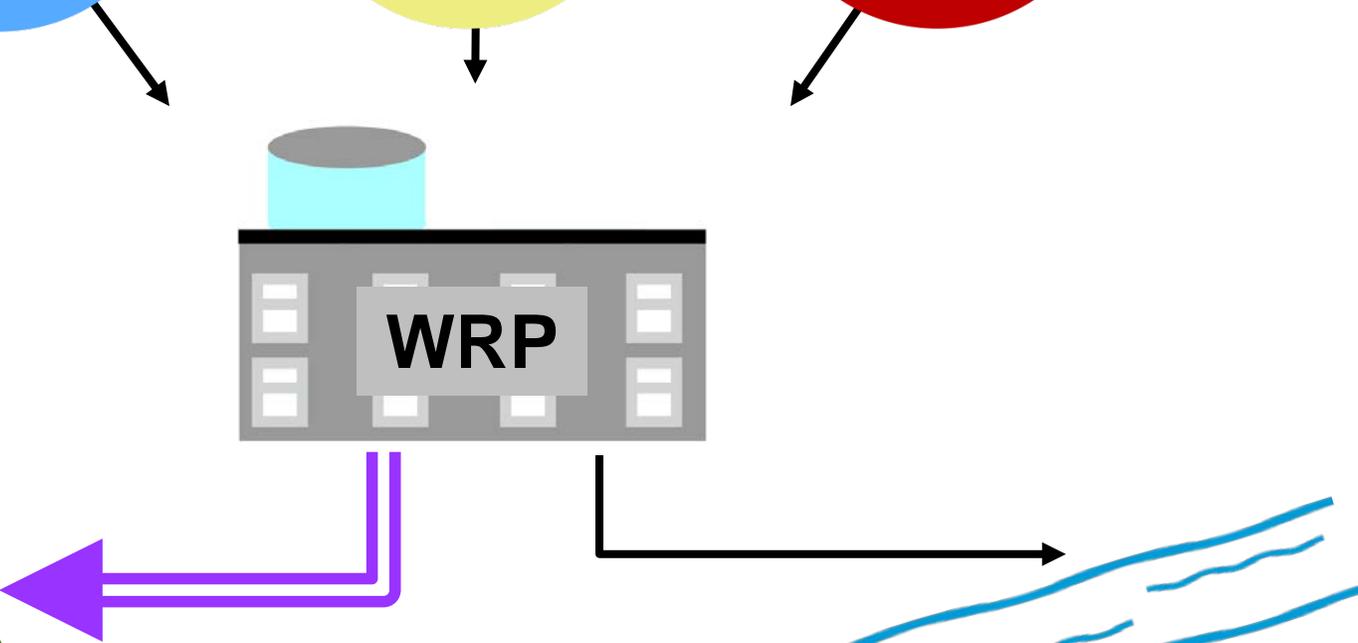
City C



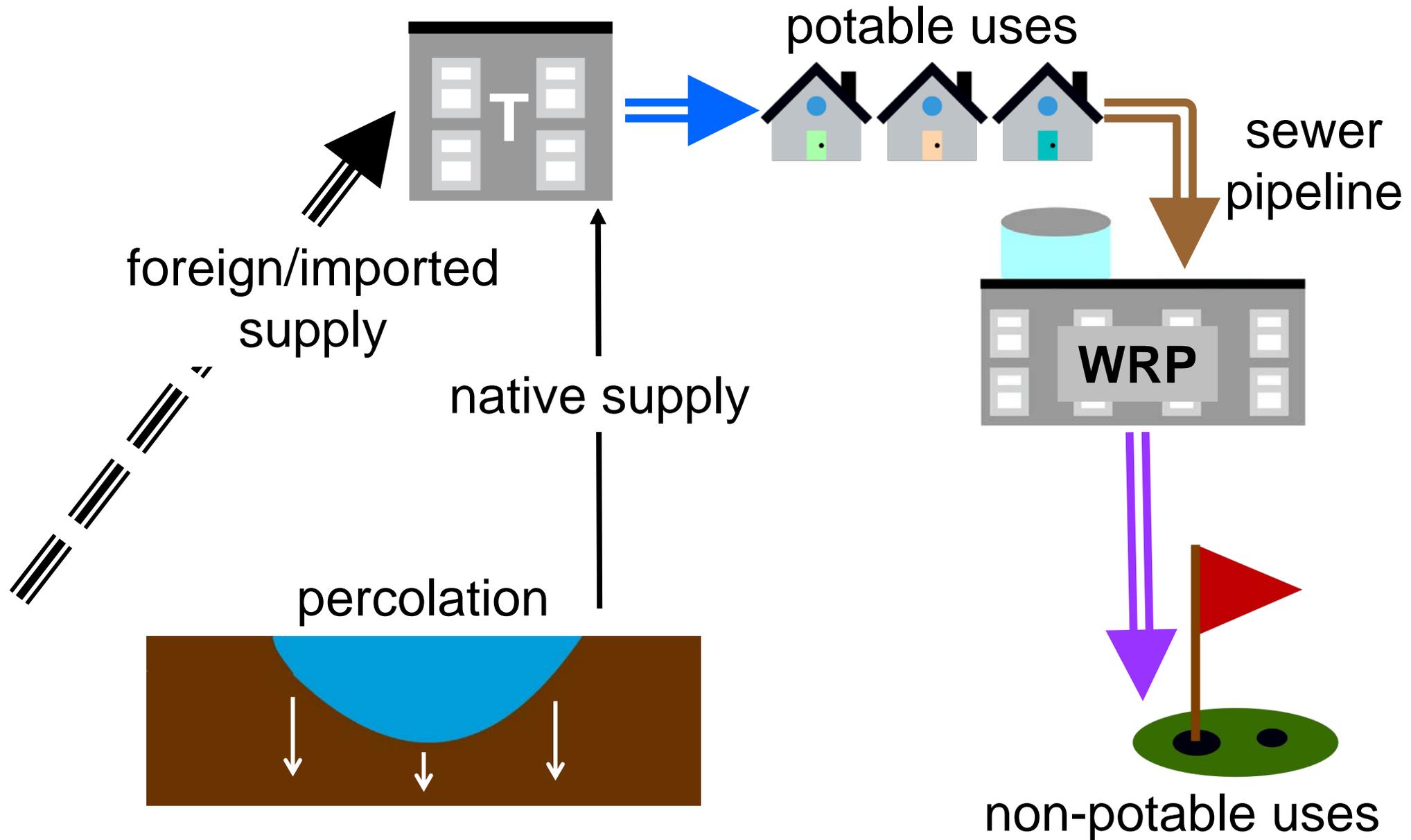
non-potable uses



watercourse

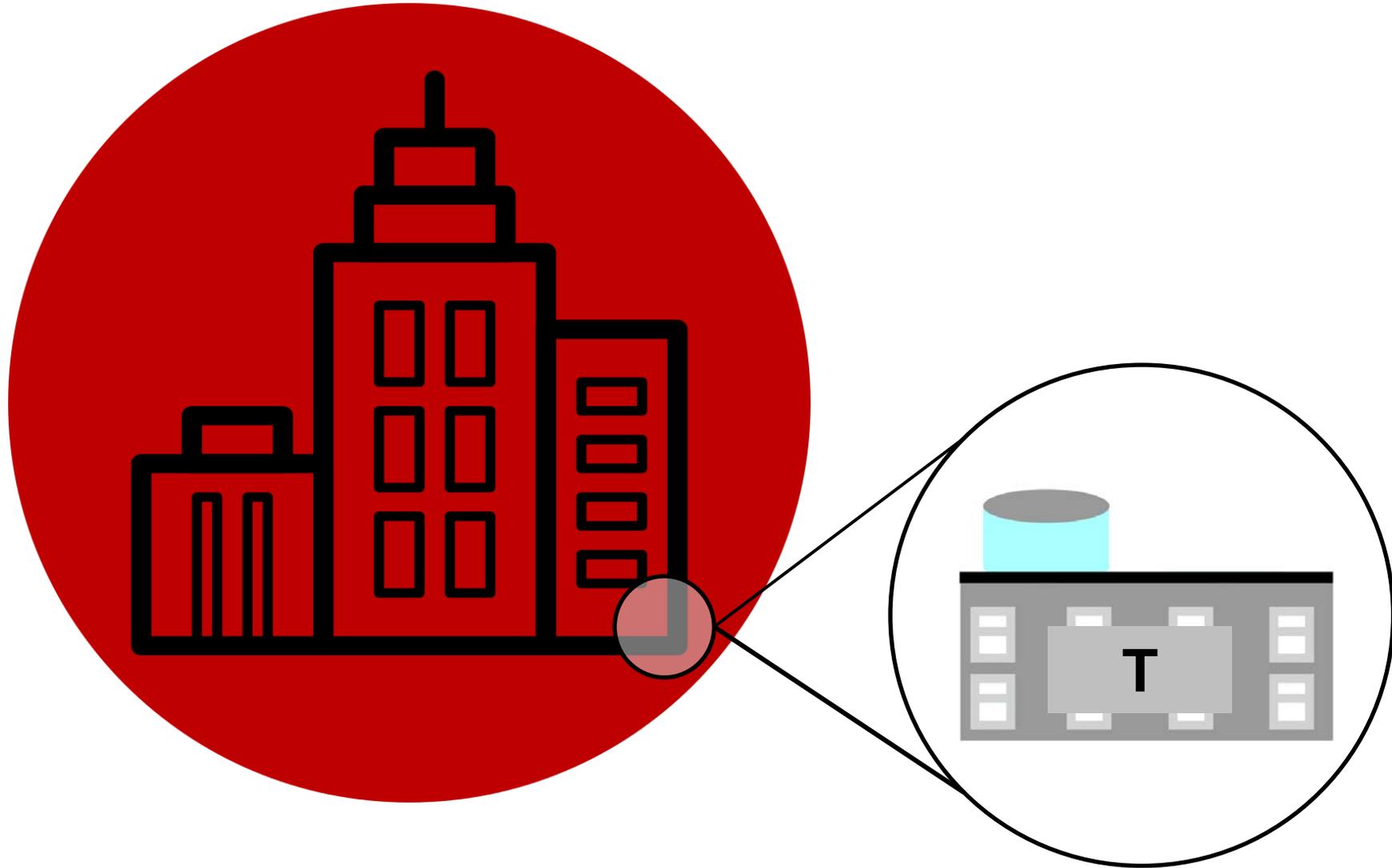


# Water Rights



# Emerging Issues

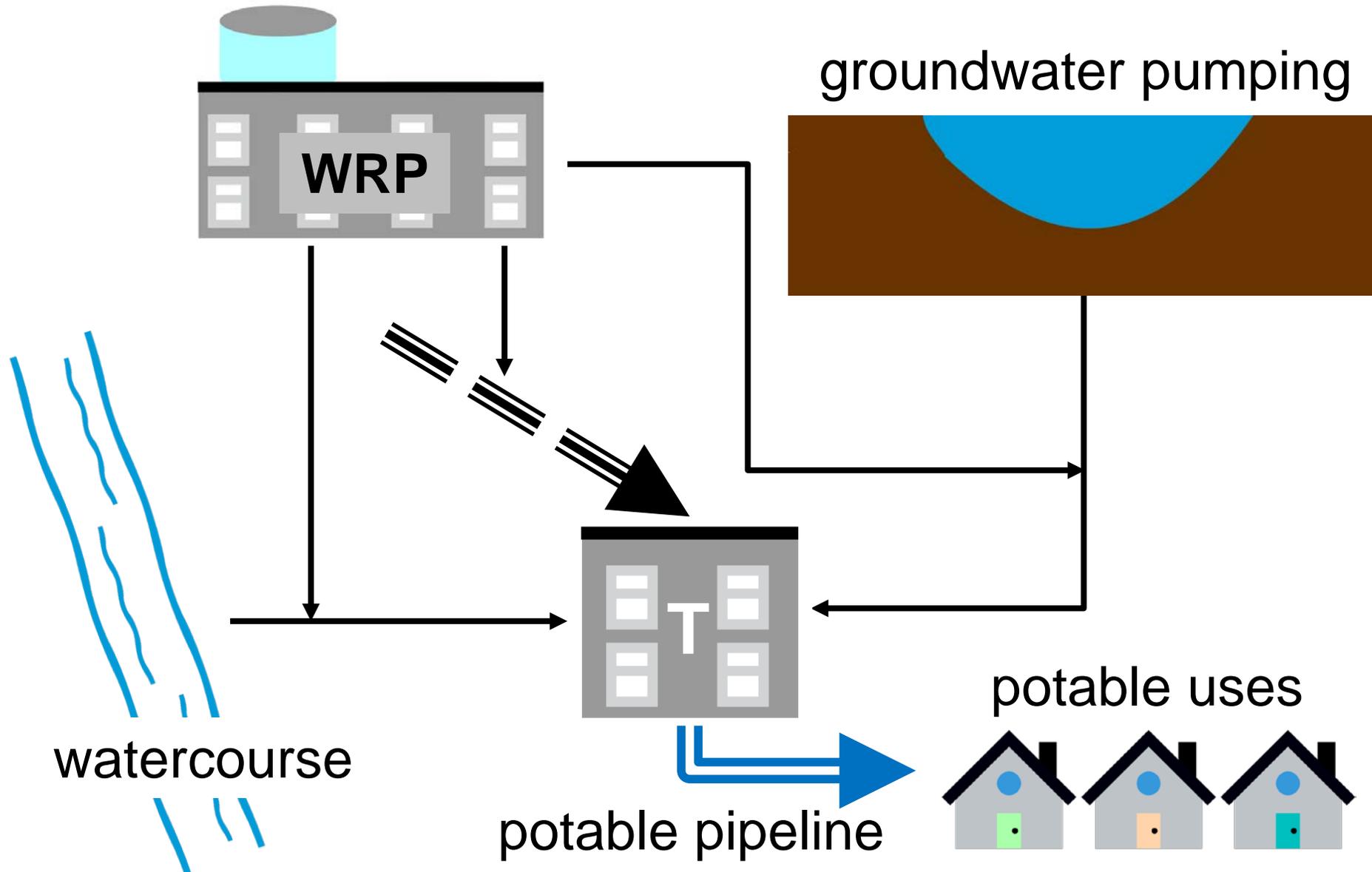
# Onsite Nonpotable System



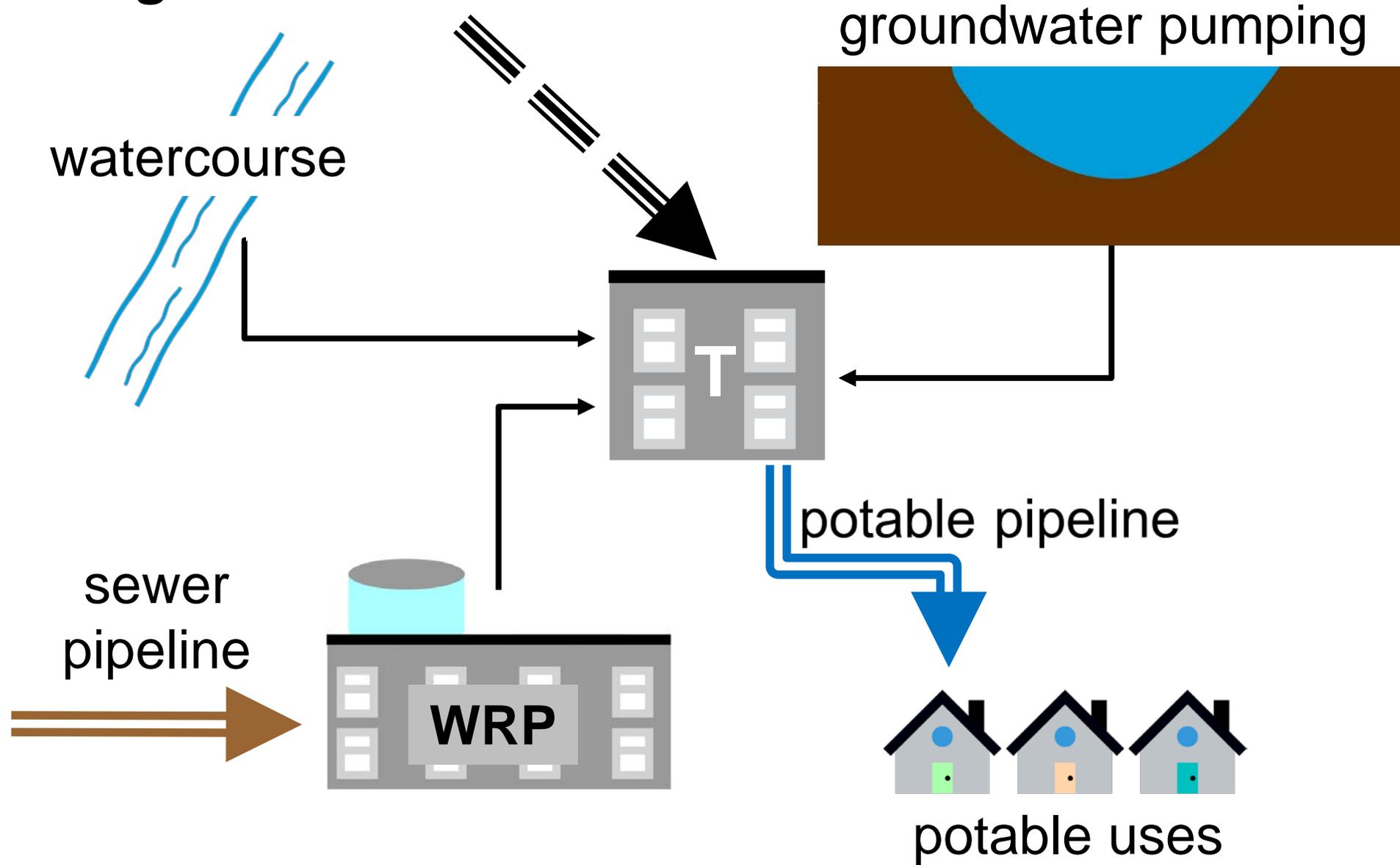
# Onsite Wastewater Treatment

- San Francisco Onsite Water Reuse for Commercial, Multi-Family, and Mixed Use Development Ordinance
  - **Allows:** Collection, treatment, and use of alternate supplies onsite
  - **Use:** Non-potable
  - **Requirement:** Mandatory for commercial buildings larger than 250,000 SF
- **Developments:** SB 966
  - By 2022, SWRCB to develop risk-based water quality standards for use by local governments in regulating onsite systems
  - Requirements for local governments adopting onsite systems

# Direct Potable Reuse: Raw Water Augmentation



# Direct Potable Reuse: Treated Drinking Water Augmentation



# Direct Potable Reuse

- **Raw Water Augmentation:** placement of recycled water in pipelines or aqueducts delivering water to drinking water treatment plant
  - By 2024, SWRCB shall adopt uniform criteria
- **Treated Drinking Water Augmentation:** placement of recycled water into water distribution system
  - No mandate to adopt criteria

## Developments:

- SWRCB's "A Proposed Framework for Regulating Direct Potable Reuse in California" (April 2018)

# Challenges / Litigation Risks:

- Highest beneficial use of recycled water
- Application of the Public Trust Doctrine
- Environmental impacts:
  - CEQA: project and cumulative impacts on instream flows
  - Threatened/endangered species
- Instream Flow Requirements

## – Thank You –

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