



Graywater Control HB 13-1044 & Regulation 86

September 17 and 18, 2014
Water Efficiency Workshop



COLORADO
Department of Public
Health & Environment



Graywater basics

What is graywater?

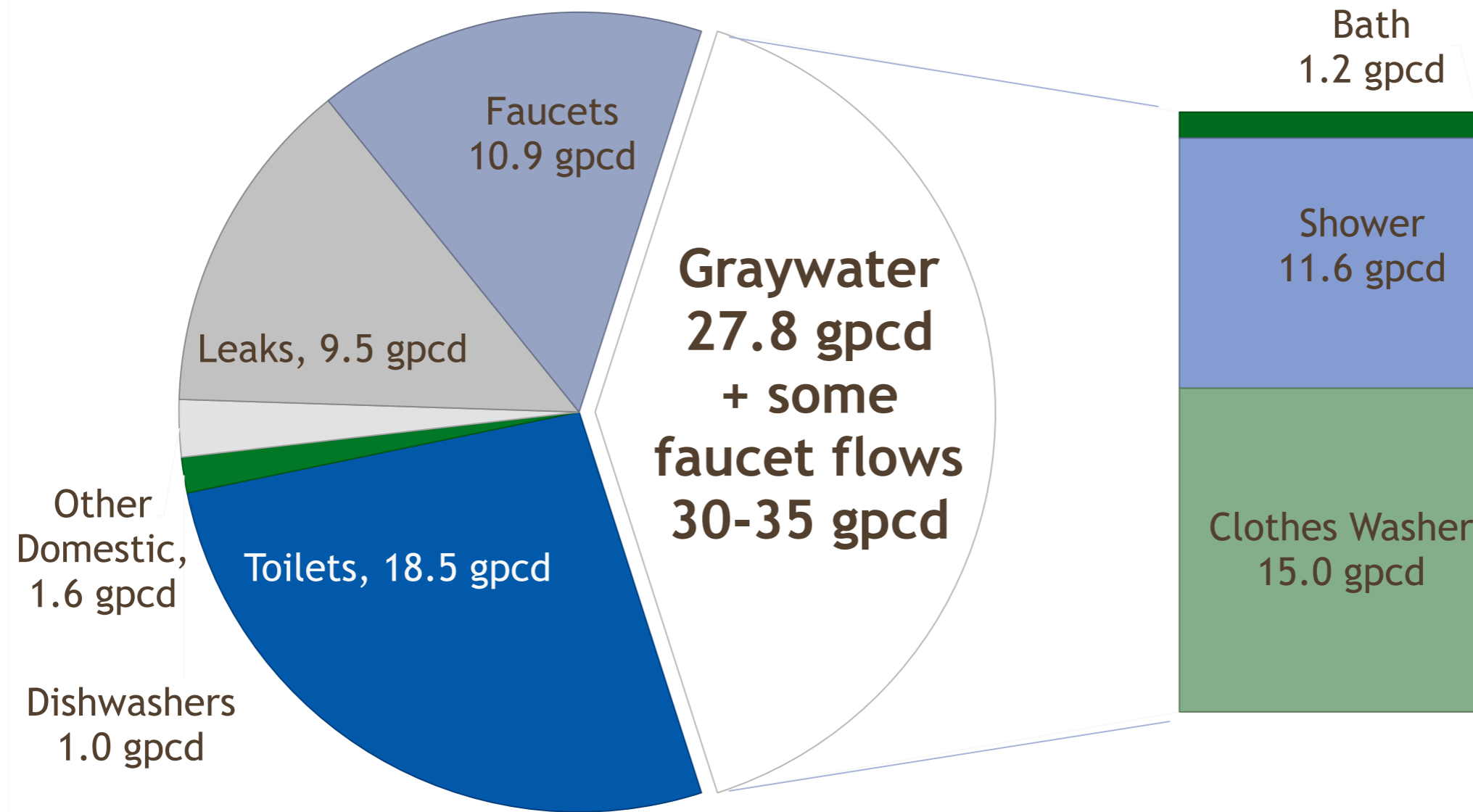


"Graywater" means that portion of wastewater that, before being treated or combined with other wastewater, is collected from fixtures within residential, commercial, or industrial buildings or institutional facilities for the purpose of being put to beneficial uses authorized by the commission in accordance with Section 25-8-205 (1) (g). Sources of graywater may include discharges from bathroom and laundry room sinks, bathtubs, showers, laundry machines, and other sources authorized by rule. Graywater does not include the wastewater from toilets, urinals, kitchen sinks, dishwashers, or non-laundry utility sinks.

Graywater must be collected in a manner that minimizes household wastes, human excreta, animal or vegetable matter, and chemicals that are hazardous or toxic, as determined by the commission.

Potential Graywater Flows

Indoor Residential Uses - 69 gallons/day/capita



Source: Mayer et. al. 1999. *Residential End Uses of Water*. AWWA Research Foundation and AWWA

Indicator Organism Comparison

Source	Total Coliform bacteria (MPN/100 mL)
Drinking Water	Less than 1
Disinfected Tertiary Recycled Water	Less than 2.2
Disinfected Secondary Reclaimed Water	Less than 23
<i>Swim Beach Standard</i>	<i>Less than 235 E. Coli to remain open</i>
<i>Colorado Flooding SW sampling</i>	<i>0 to 911 E. Coli</i>
Un-disinfected Reclaimed Water	20 to 2000
Graywater	100 to 100 millions
Raw Wastewater	Millions to billions



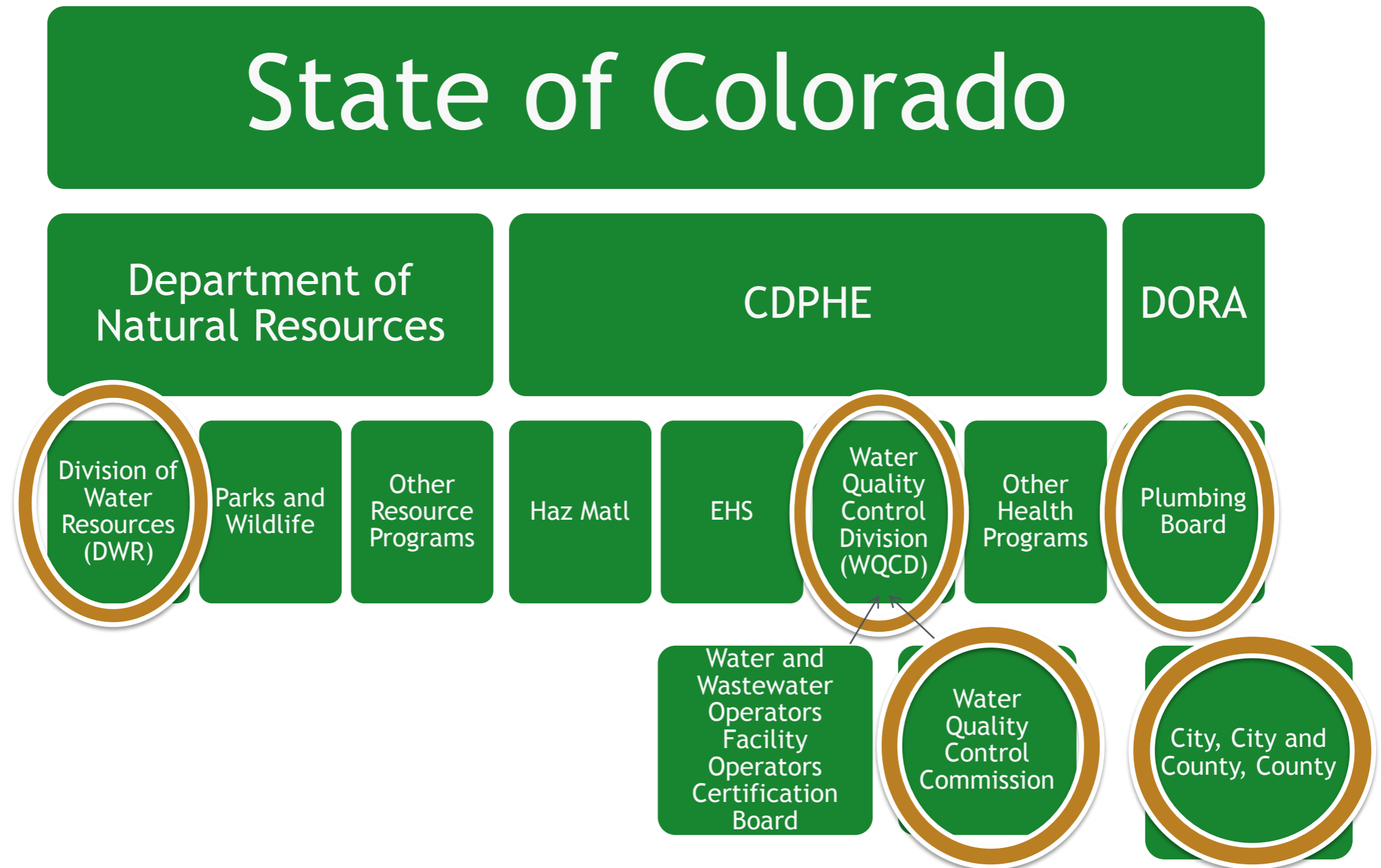
*House Bill 13-1044 & other
applicable laws, rules, etc.*

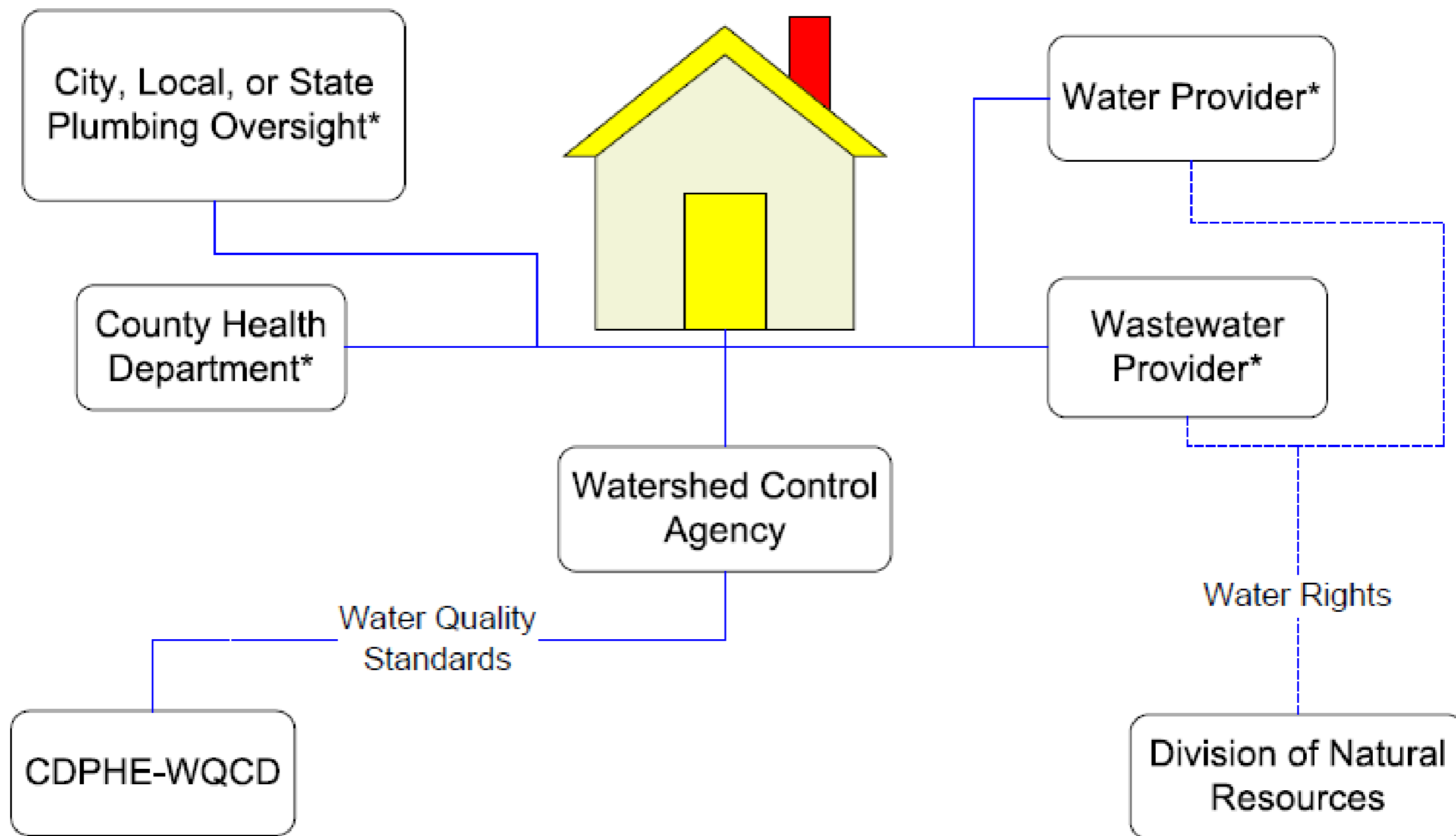
Colorado House Bill 13-1044

Signed by Governor Hickenlooper on May 15, 2013

- Establishes basic implementation framework
- Defines Graywater
- Specifies or Encourages Actions from Four Governmental Entities
 - Division of Water Resources (Water Rights)
 - Examining Board of Plumbers
 - Water Quality Control Commission
 - Cities, City and Counties, and Counties (Local Implementation - Opt In Program)

Regulatory Complexity





* CDPHE Enforcement Oversight for Graywater Program

Applicable Laws & Regulations

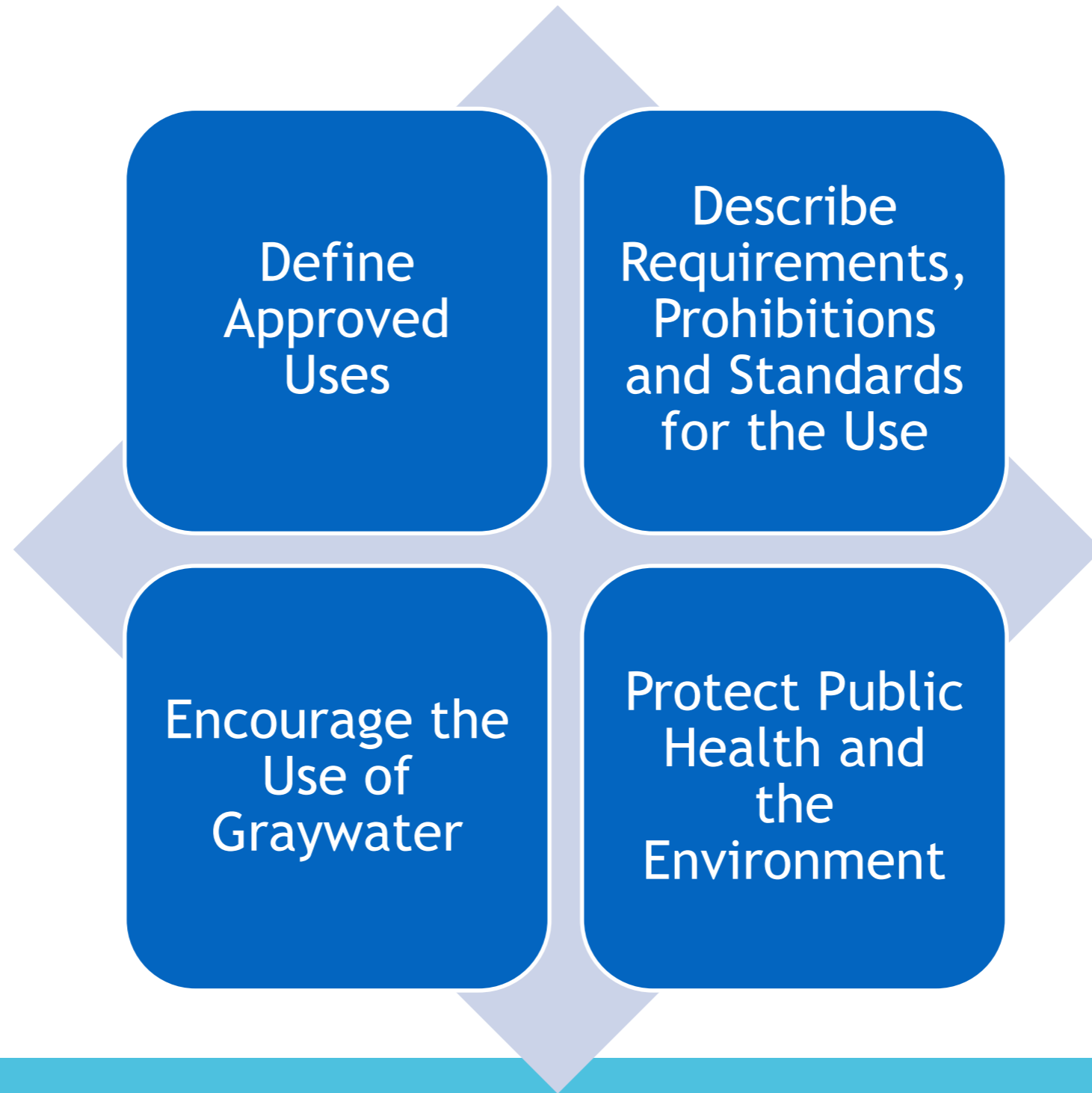
Responsibilities of Other Regulatory Bodies

- Colorado Revised Statutes (House Bill 13-1044)
- Water Rights Law
- Colorado Plumbing Code (IPC based)
- Local Ordinances and other local criteria (e.g., building code)
- Regulation 100 - Water and Wastewater Facility Operators Certification Requirements

Water Quality Control Commission

- Water Quality Control Commission Regulation (Regulation 86 - Graywater Control Regulation)
- Watershed Control Regulations (Phosphorus)
- Regulation 61 - Colorado Discharge Permit System Regulations
- Regulation 41 - Groundwater Standards

Actions of Water Quality Control Commission





Regulatory framework...
Being developed

Regulation 86 Goals

Protect public health and environment

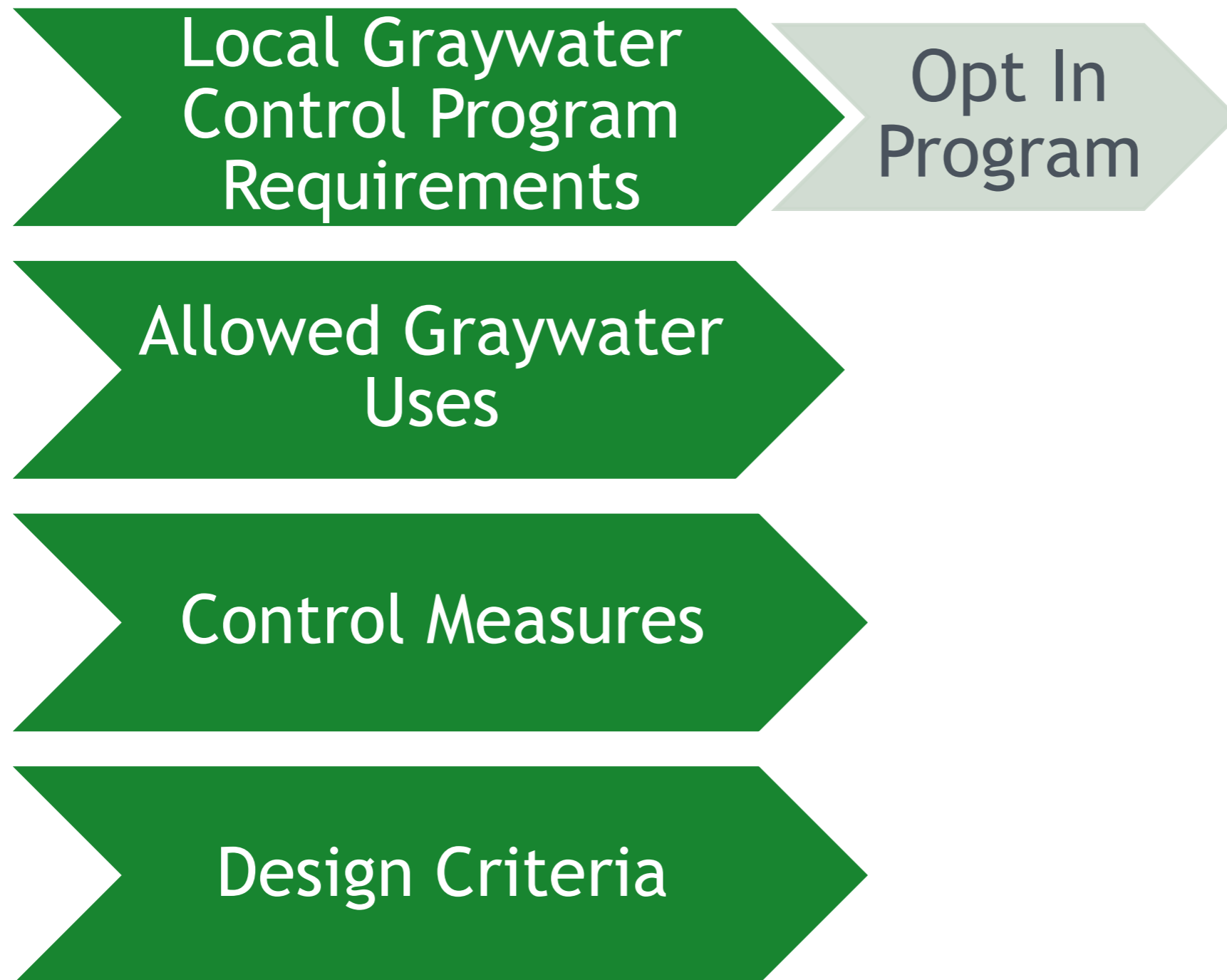
Encourage the
use of
graywater

Create an
implementable
regulation -
agency
coordination

Limit initial
uses to simplify
start-up for
local
implementation
- keep it simple

Reduce burden
of stakeholder
process due to
resource
constraints

Basic regulation framework



Local ordinance and resolution

- **OPT IN** program for a City, City and County, or County.
Have to have an active graywater ordinance or resolution in place. Local program may be more stringent.
- Legal compliance with other state, federal, local laws and regulations (*including plumbing code*)
- Minimum requirements for ordinance / resolution: tracking mechanism, design submittal, installation verification, O&M manual, legally responsible party identification, etc.

Potential Graywater Uses

Outdoor - Irrigation



Single Family
Multi-Family
Commercial
Institutional

Indoor - Toilet Flushing



Single Family
Multi-Family
Commercial
Institutional

“Non -
Single
Family”

Fire Protection



Single Family
Multi-Family
Commercial
Institutional

Commercial



Construction
(Concrete Mixing, Soil Compaction)
Cooling Towers / Closed Loop
Cooling, Zoo Operations

Agricultural



Crop Irrigation
Feed Irrigation
Dust Control

Proposed Control Measures

All users

- No hazardous chemicals
- No excreta (aka diapers)
- Operate & maintain in accordance w/manufacturer recommendations
- Minimize access and exposure
- Not a public nuisance
- Maximum storage period: 24 hours irrigation / 72 hours indoor use
- No temporary potable connections

Irrigation

- No agricultural irrigation (aka food crops)
- Must be applied at agronomic rate

Toilet / Urinal

- Residual disinfectant
- Dyed blue or green

Proposed Graywater Uses/Treatment

- Subsurface irrigation less than 2,000 gallons per day: Single family, Non single family
- Indoor toilet and urinal flushing: Single family, Non single family

Minimum treatment (simple version)

Subsurface irrigation: 3 way valve, 60 mesh screen for emitter systems, tank with drain, overflow and vent (except for clothes washing machine only installations)

Indoor toilet flushing: 3 way valve, tank with drain, overflow and vent ANSI/NSF 350, disinfectant, dye, potable water connection with appropriate cross connection control

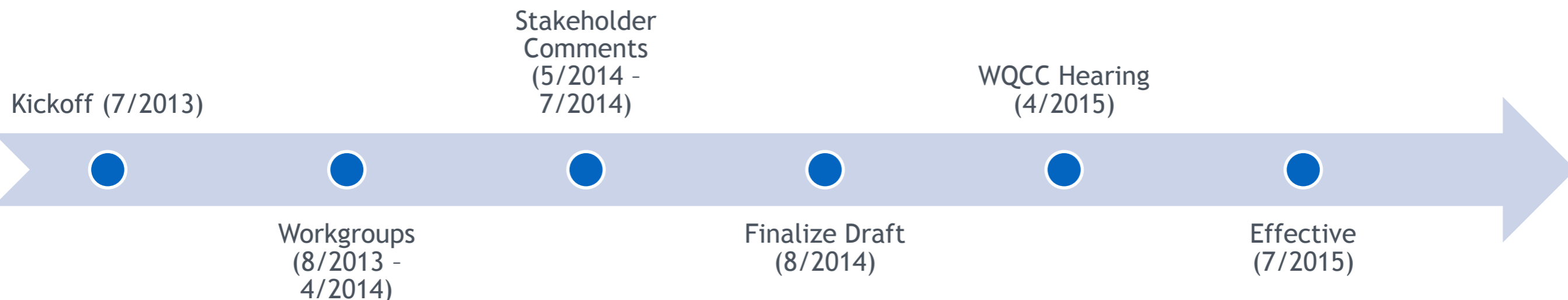
Overview of project

Kickoff: July 2013, Agree on Minimum Requirements & Strategy

Workgroups: August 2013 - April 2014

Stakeholder efforts: May - July 2014

Hearing in April 2015*. Effective July 2015.



Get on the stakeholder list or to get a copy of the draft regulation...

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Rainwater collection - not the same as graywater

Regulated by Department of Natural Resources,
Division of Water Resources a.k.a. the State
Engineer's office

http://water.state.co.us/DWRIPub/Documents/DWR_RainwaterFlyer.pdf

Plumbing Board Update

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Questions