Local Government Opportunities in SGMA

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Water is the essence of life

Surface Water = Ground Water

What I am going to talk about today

I am going to talk about:

- ✓ connecting water management and land use planning
- ✓ Applying land use tools for Sustainable Ground Water Management Planning
- ✓ A **tool** to help local decision makers make decisions that benefit water supply and resources in a cost effective and sustainable manner

California Water Regulation Timeline

- 1914 – State Water Commission regulates surface water
  - Except riparian rights and pre-1914 appropriated water
- 1914 to present – The law continues to "refine" water rights

- 1914 to 2014 – 100 year gap of no ground water regulation

Sustainable Groundwater Management Act (SGMA)

- Provides a framework for sustainable management of groundwater supplies by local authorities [the state will if local government doesn't]
- Requires formation of local groundwater sustainability agencies (GSAs)
- Requires adoption of locally-based groundwater sustainability plans (GSP).

SGMA cont'd

Sustainable Groundwater Management Act is part of a statewide, comprehensive water plan for California that includes:

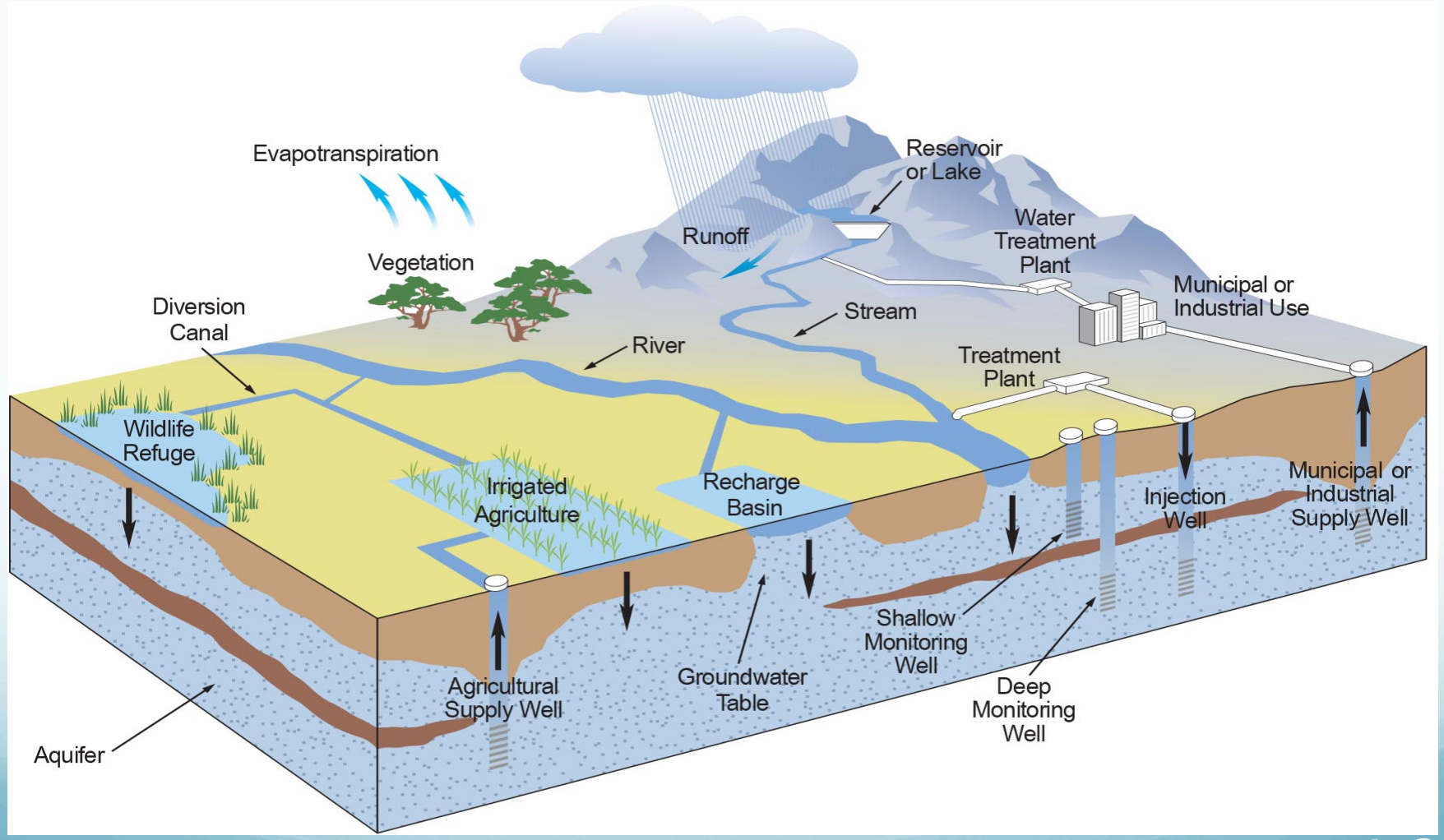
- water use efficiency
- water conservation
- water recycling
- expanded water storage (preference is groundwater)
- safe drinking water, wetlands and watershed restoration.

Now what?

What are the Opportunities for Land Use Planning and Integrated Water Management and SGMA

- Land use has a direct relationship to reliable water supply, water quality, and flood management and ground water recharge
- Land use resource management strategies are the most reliable, cost effective and sustainable tool available – and the least used

Land Use Strategy - Connecting the System



Opportunities: Ground Water

- Ground water is water supply for some cities
  - ✓ Urban Water Management Plans must include ground water evaluation (2016)
- Groundwater becomes part of an Integrated Regional Water Management Plan (IRWMP)
- Ground water management should be integrated with flood management where it makes sense

Flood Management Tools

FloodSAFE CALIFORNIA

The tool:

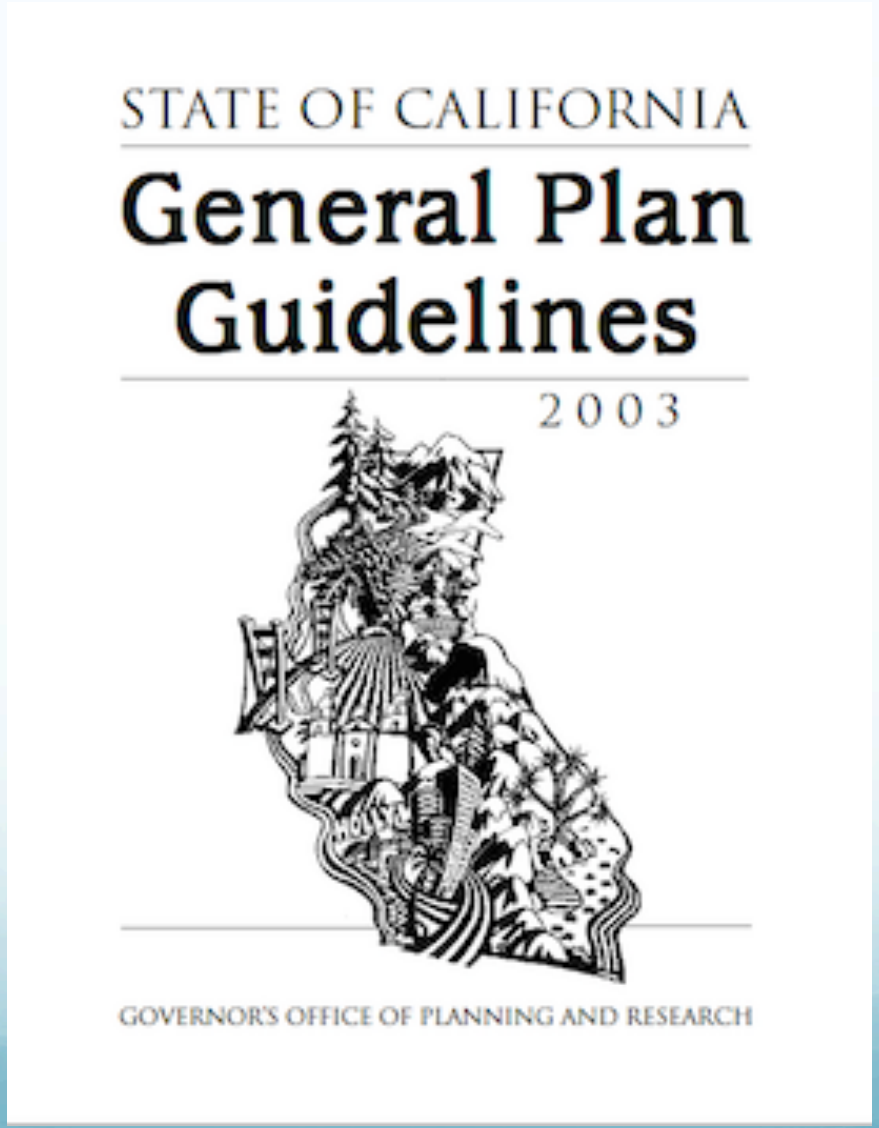
- ✓ Shows flood protection is part of IWM
- ✓ Shows floodplains capture flood water protecting urban development
- ✓ Shows floodplains provide natural groundwater recharge
- ✓ Avoids costly flood protection for cities

Flood Management Protecting Urban Development

Local and State Government Roles

- Local government is primarily responsible for land use planning and regulation
  - ✓ IWM can be integrated into local planning and land use regulation
  - ✓ Local governments can participate actively in regional water planning
- State has important role too, for example
  - ✓ SB 610 and 221
  - ✓ 2007 flood legislation
  - ✓ Strategic Growth Council sustainable communities grants

Where State Policy and Local Governance Meet



State OPR General Plan draft Guidelines

- 2016 Update proposes optional water element
- Planning from the watershed perspective
  - Smaller development footprint = more watershed water storage
- Provide water-related technical tools and data resources for local planners

Integrated Water Management

To Achieve Sustainable Outcomes

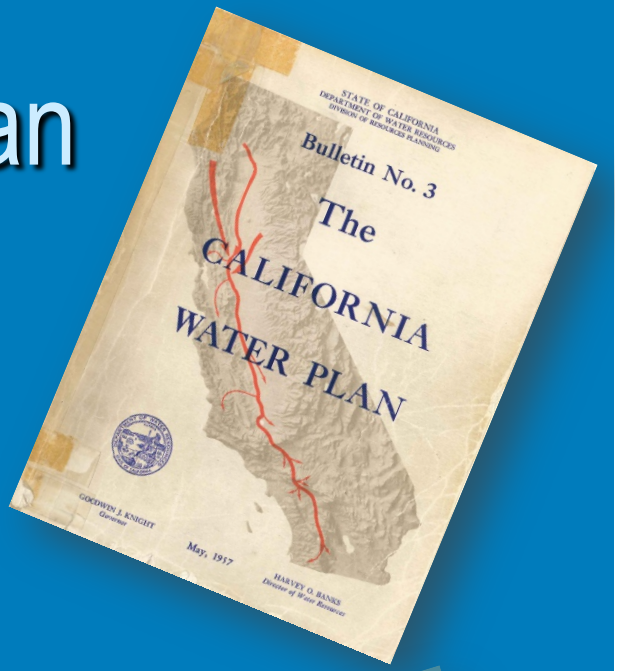
CALIFORNIA WATER PLAN UPDATE 2013

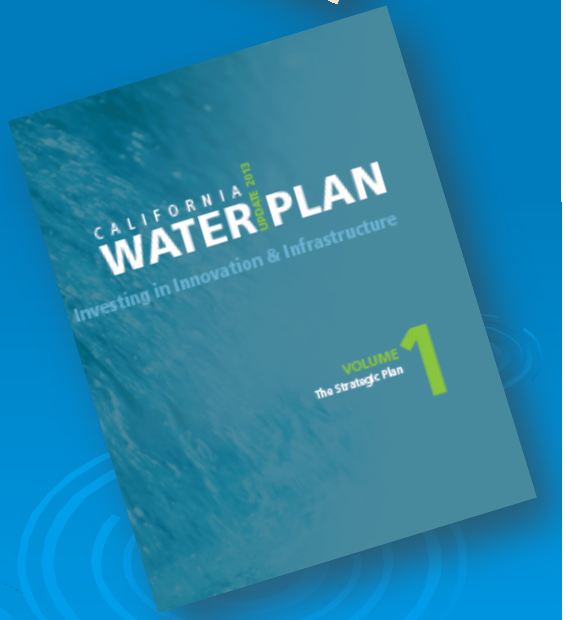
Investing in Innovation & Infrastructure

Highlights

The California Water Plan

- ✓ Required since 1957 – updated every 5 years (2018)
- ✓ Strong nexus with Governor's Water Action Plan
- ✓ Tool for guiding investment priorities and legislative action
- ✓ Update 2013 lays out recommendations -- no mandates or appropriations



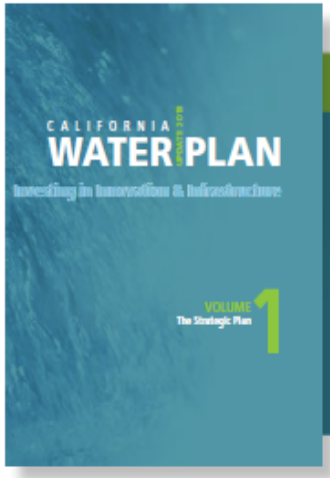


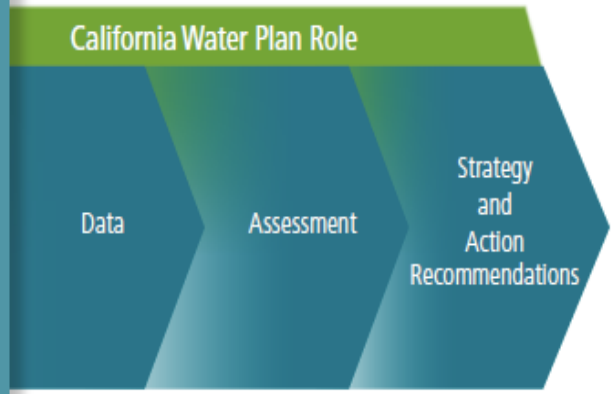
CALIFORNIA WATER PLAN UPDATE 2013

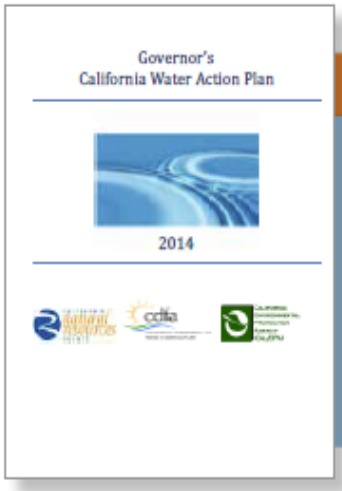
Core Messages

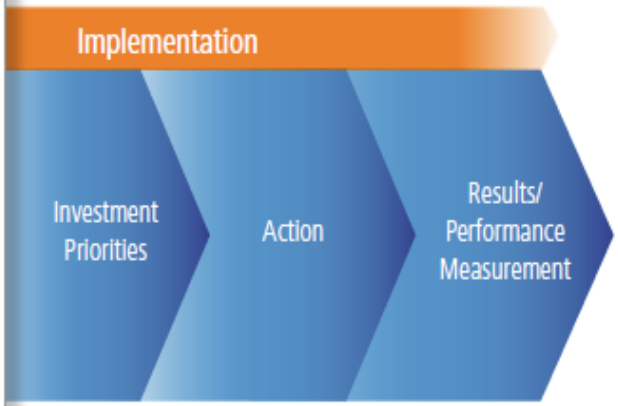
Charting a Course for IWM in California

- California's complex water system is in crisis
- A diverse Portfolio Approach is needed to address challenges
- Solutions require Integration, Alignment & Investment
- We all have a role to play in securing our future









30+ *Tools for Diversifying Regional Water Portfolios*

Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers

- Conveyance – Delta
- Conveyance – Regional / Local
- System Reoperation
- Water Transfers

Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination – Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage – Regional / Local

Improve Flood Management

- Flood Management

** New for Update 2013

Improve Water Quality

- Drinking Water Treatment & Distribution
- Groundwater / Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Salt & Salinity Management
- Urban Stormwater Runoff Management

Practice Resource Stewardship

- Agricultural Lands Stewardship
- Ecosystem Restoration
- Forest Management
- ✓ Land Use Planning & Management
- Recharge Areas Protection
- Sediment Management **
- Watershed Management

People & Culture

- Economic Incentives (Loans, Grants & Water Pricing)
- Outreach & Engagement **
- Water & Culture **
- Water-Dependent Recreation

Objective 15: State Can Enhance Role in Aligning Land Use Planning and IWM

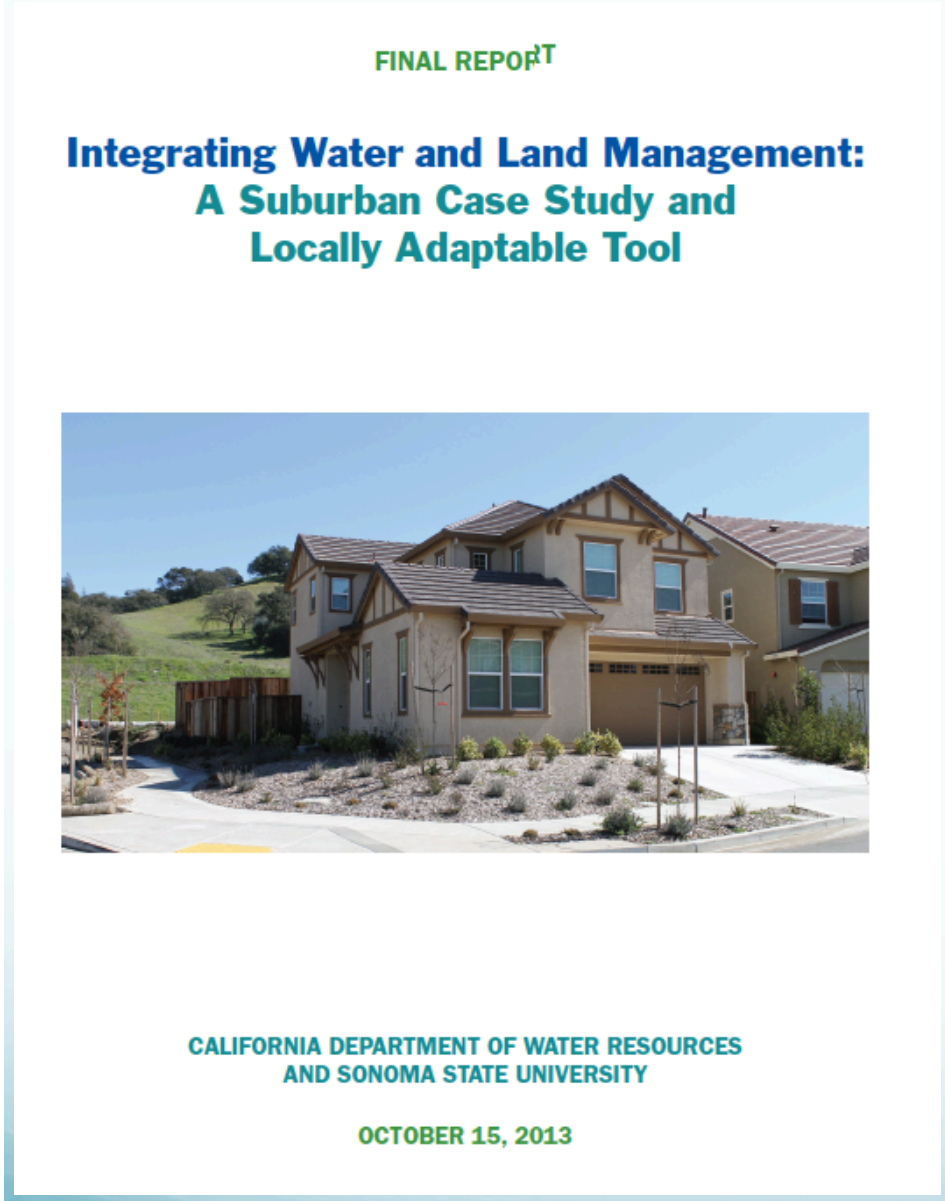
- ✓ Facilitate stronger collaboration between land use and water planners
- ✓ Provide additional incentives for compact sustainable development
- ✓ Provide water-related technical tools and data resources for local planners

Land Use Objective: Compact urban development can:

- Reduce water demand
- Improve water quality
- Limit development in floodplains/groundwater recharge areas
- Reduce water-related infrastructure costs and maintenance
- Reduce GHG emissions
- Preserve agricultural land, which provides water-related benefits

Why mayors should rule the world

Benjamin Barber believes that the future of the world may lie with the politicians who implement practical change every day: mayors.



The tool:

- ✓ Demonstrates differences in water use at lot and neighborhood level
- ✓ Shows hardscape is a critical component to minimizing water resource impacts
- ✓ Shows importance of low-impact development
- ✓ Demonstrates the high cost of BAU development for operations and maintenance

Objectives

1. Create an accessible tool to help guide land use decision making

2. Quantify the relationship land cover, water supply benefits and costs at case study sites

A	B	C	D	E	F	G	H	I	J	K	L	M	N
COMPONENT	**VALUE**	**UNIT**	Initial cost	Cost over 50 years	Cost over 100 years	Water Use Coefficient * Area							
Lot land cover													
Asphalt		*sq ft*	0	0	0								
Concrete		*sq ft*	0	0	0								
Pavers, brick or nautral stone		*sq ft*	0	0	0								
Permeable pavement - pavers		*sq ft*	0	0	0								
Permeable pavement - porous asphalt		*sq ft*	0	0	0								
Permeable pavement - porous concrete		*sq ft*	0	0	0								
Permeable pavement - gravel		*sq ft*	0	0	0								
Deck		*sq ft*	0	0	0								
Turf grass		*sq ft*	0	0	0	0							
Artificial turf grass		*sq ft*	0	0	0								
Cultivated flower or vegetable garden		*sq ft*	0	0	0	0							
Sparse irrigated vegetation		*sq ft*	0	0	0	0							
Dense irrigated vegetation		*sq ft*	0	0	0	0							
Natural/naturalized vegetation		*sq ft*	0	0	0	0							
Pool		*sq ft*	0	0	0	0							
Pond		*sq ft*	0	0	0								
Existing trees (canopy)		*sq ft*				0							
Trees (count)		*count*	0	0	0	0							
Roof													
Composition Roof		*sq ft*	0	0	0								
Slate Roof		*sq ft*	0	0	0								
Wood Roof		*sq ft*	0	0	0								
Clay Roof		*sq ft*	0	0	0								
Green roof		*sq ft*	0	0	0								
Water Infrastructure													
Rain barrels		*gal*	0	0	0								
Downspout disconnection		*percent*											
French drains		*cu ft*	0	0	0								
Rain garden		*sq ft*	0	0	0								
Grey water system		*gal/mo*											
Irrigation controllers		*1 or 0*	0	0	0								
Total lot size	**0**	*sq ft*											
Impervious land cover	**0**	*sq ft*											
Pct Impervious land cover	**0%**	*percent*											
Peak monthly water runoff from impervious cover	**0**	*gal*											
Peak monthly applied outdoor water consumption	**0**	*gal*											
Peak monthly CO2 emissions (from outdoor water use)	**0.0**	*lbs*											

Tool Outputs

1. Percent Impervious Surfaces
2. Stormwater Runoff (from Impervious Surfaces)
3. Outdoor Water Requirements
4. Greenhouse Gas Emissions (from Outdoor Water)

Tool Outputs

5. Cost of Implementation
6. Cost over 50 years
7. Cost over 100 years

Our Conclusions

- ✓ This tool enables people w/o technical backgrounds to more easily assess the impacts of different development choices
- ✓ Projects with reduced hardscapes, smaller building footprints and less elaborate infrastructure requirements are more likely to yield the most economical designs
- ✓ Maintenance costs are hard to document as different people are often responsible for long-term maintenance

Hard Work – We Can Do It!

That’s all folks!