

This presentation premiered at WaterSmart Innovations

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Santa Monica's

Lessons Learned Implementing Landscape Ordinance

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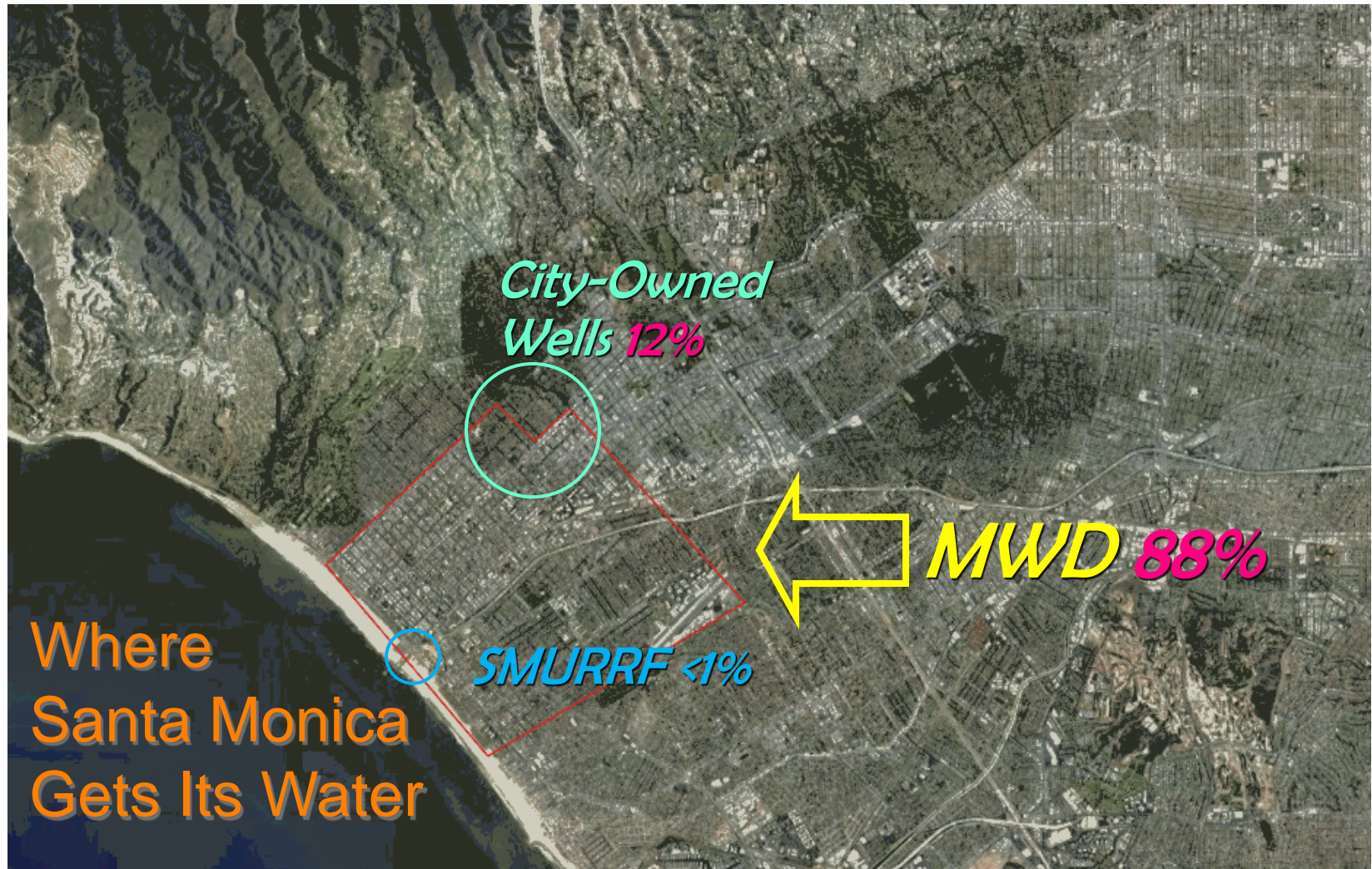


The Story Begins...

- Background on Santa Monica
- 2008 Green Building Ordinance
 - Highlights, Challenges & Solutions
- Revised Green Building Ordinance
 - Revisions
 - At least as Effective as CA State Ordinance
 - What's Working





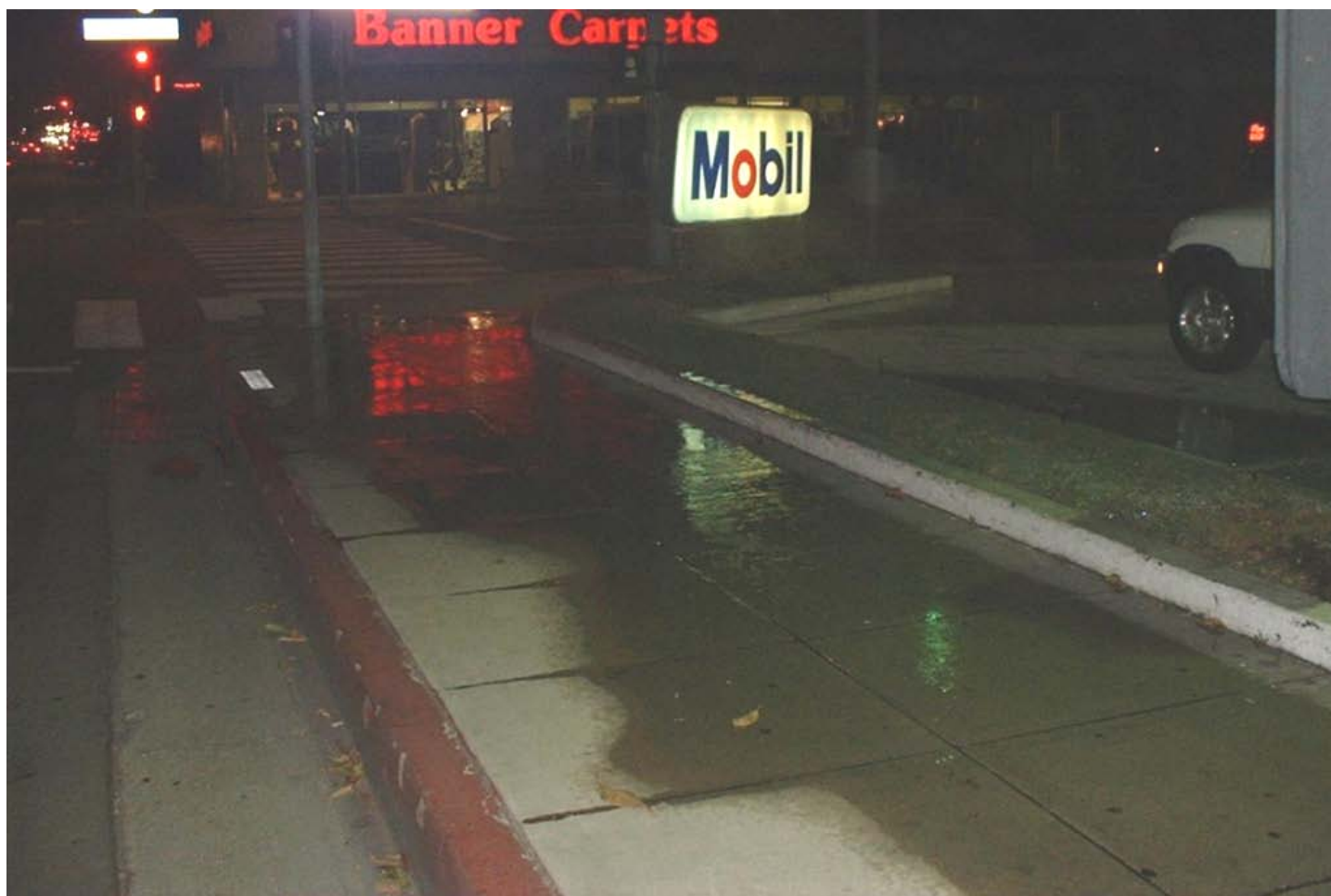




Why Did We Need MORE Regulations?



























325,000 Gallons
wasted every day
in dry weather



The Solution... require gardens to mimic garden\garden

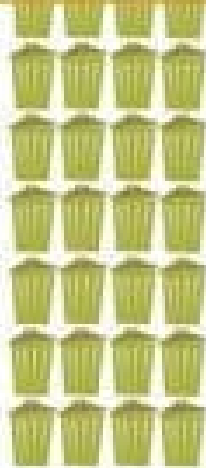


Traditional Landscape



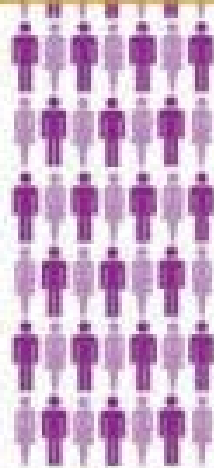
57,000 Gallons

WATER



670 Pounds

YARD WASTE



80 Hours

MAINTENANCE

Sustainable Landscape



6,000 Gallons

WATER



250 Pounds

YARD WASTE



15 Hours

MAINTENANCE

Green Building Ordinance 2008

- Subpart to other green building requirements
- Some irrigation/landscape requirements in text
- Ordinance refers to Guidelines for irrigation design/installation



4 Basic Goals

- **More climate appropriate landscapes**
- **Higher irrigation efficiency**
- **Weather Based Controllers**
- **No runoff**



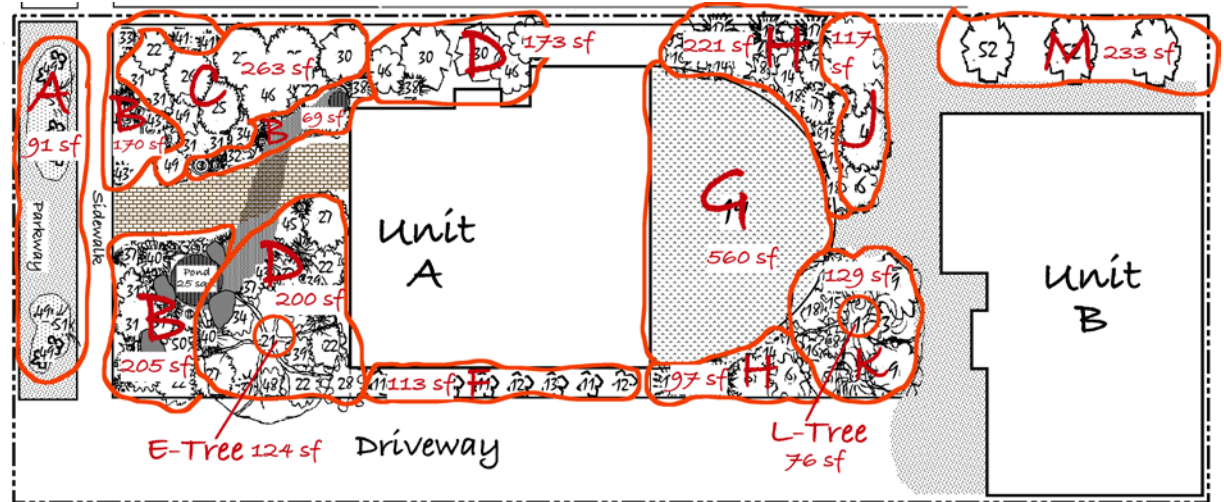
Applied To:

- All new landscapes
- All new irrigation systems
- All irrigation modifications
- All properties



Required:

- Permits
- Plan check
- Inspections



Challenges for City Council



- Affects single family
- Reduces lawns
- Enforcement



Solutions for Council Concerns

- Lawn alternative brochure
- Grants/rebates for irrigation & plants
- Developed handouts for permit applicants, property owners, gardeners
- Free sustainable landscape classes for professionals and homeowners.
- Displays at city hall and events



Challenges for Other Divisions



- **Building & Safety & Planning**
 - No expertise
 - No training
 - No time
 - Water is not their priority or concern
- **OSE (that's me and Russell)**
 - No time & Not our job
 - Why don't they care about water?



Solutions to B&S Concerns



- **Enforcement**
 - 1 training
 - Post cards to give to applicants
 - Help with enforcement

- **Building & Safety Inspectors**

- 3 hands-on trainings
- Inspection Checklist
- Make connection to safety, i.e. backflow, plumbing..
- Inspection time 15 minutes for open-trench & 3 minutes per valve for final inspection
- Cost covered by permit fee



Solutions to Planning's Concerns



- 2 trainings
- Russell & I reviewed plans until they were trained
- Critical thinking guide and plan checker checklist
- Plan review from 1 hour to 15 minutes! HYDROZONE MATRIX
- Sample plans
- Over-the-shoulder review
- Cost covered by permit fee



Hydrozone Matrix

Hydro zone	SQ FT	% of Tot Ls Area	Plant Type	Planting Form	Hydrozone Basis	Hydrozone Description	Exposure	Irrigation Method	Irrigation Device Mfrgr / Model / Number	Zone Pressure	Precip Rate	Zone GPM	Controller Station
A	91	2%	LVL	1G, P	PL	Native Grass / Shrub	Sun all day	D	Salco PST-2	25	0.39	0.2	5
B	444	11%	LVL	1G	SU	Medium Low-Water Shrub	Sun all day	D	Agrifim SFPC-BR-7212-05	25	0.64	3.0	4
C	263	7%	LVL	1G	PL	Large Low-Water Shrub	Sun all day	D	Agrifim SFPC-BR-7212-05	25	0.64	1.8	3
D	173	4%	LVL	1G	SU	Medium Low-Water Shrub	Shade most of day	D	Agrifim SFPC-BR-7212-05	25	0.64	1.1	1
E	124	3%	LVL	15G	PL	Native Tree	Shade part of day	B	Rain Bird RWS-B-C-1401	30	0.43	3.0	2
F	113	3%	H	1G	PL	Mixed Roses	Sun all day	D	Agrifim SFPC-BR-7212-05	25	0.64	0.8	7
G	560	14%	T	SO	PL	Warm Season Turf	Sun all day	S	Hunter / MP Rotator / See Plan	30	0.45	2.3	12
H	318	8%	M	1G	PL	Medium Shrub	Sun most of day	D	Agrifim SFPC-BR-7212-05	25	0.64	2.1	11
J	117	3%	M	1G	PL	Large Shrub	Sun all day	D	Agrifim SFPC-BR-7212-05	25	0.64	0.8	8
K	129	3%	M	1G	SU	Medium Shrub	Shade most of day	D	Agrifim SFPC-BR-7212-05	25	0.64	0.9	10
L	76	2%	M	15G	PL	Flowering Tree	Sun all day	B	Rain Bird RWS-B-C-1401	30	0.43	3.0	9
M	233	6%	M	5G	PL	Mixed Citrus Trees	Sun all day	D	Agrifim SFPC-BR-7212-05	25	0.64	1.6	6
PLANT TYPE*				PLANTING FORM				HYDROZONE BASIS				IRRIGATION METHOD	
T	Turf				SE	Seed		PL	Plant Type			D	Drip
H	High				SO	Sod		IR	Irrigation Method			S	Small Rotor
M	Medium				F	Flat		SU	Sun Exposure			L	Large Rotor
LVL	Low, Very Low				P	Plug		SO	Soil Type			B	Bubbler
O	Other				Q	Quart		SL	Slope			M	Microspray
					1G	1 Gallon		O	Other			O	Other
* Based on Water Use Classification of Landscape Species (WUCOLS) published by State of CA Dept of Water Resources					5G	5 Gallon							
					15G	15 Gallon							
					24	24" Box							
					36	36" Box							
					48	48" Box							



Challenges for Property Owners



- Don't know they have a problem.
- Don't know how to fix it.
- Need a permit if modifying or installing 50% or more the irrigation system – even single family homes!

“My plants are drought-tolerant!”



Solutions for Property Owners



- **Flyers in English & Spanish about complying**
- **Grants up to \$5,000**
- **Rebates**
- **Free sustainable landscape classes**
- **Lawn alternative brochure**
- **Enforcement = compliance & program participation!**



Challenges for Gardeners/Designers/Architects/Contractors



- They don't know the following:
 - Plumbing codes
 - Backflow
 - Pressure regulation
 - Precipitation rate & matched precip
 - Hydrozones
 - Irrigation Plans
 - Rotary nozzles
 - Drip irrigation
 - WBICs
 - Runoff prevention
 - Care for CA Friendly plants
 - IA Best Management Practices



Solutions for Gardeners/Designers/Architects/Contractors



- Free classes for landscape & irrigation design, installation and maintenance
- Sample plans, details, specs
- Free products to try
- Sites to visit
- Working with local suppliers, IA, CLCA, Master Gardeners
- LOTS of Hand-holding!



What Really Didn't Work...

- Property owners, most designers/architects, mow, blow and go guys were not aware of any of the regulations.
- Permits for new irrigation or modification to 50% of the existing irrigation system – what is 50%?!?
- Irrigation supply/big box stores DO NOT carry the efficient equipment in stock.
- Contractors don't know what efficient equipment is or looks like or how to install it properly.
- None of the professional organizations provide enough or proper training for designers, architects, contractors to meet the requirements.



What Really Really Didn't Work...

- 100% of open-trench inspections fail:
 - Low flow valves not installed for drip systems
 - Anti-siphon valves not installed at proper height
 - Underground laterals are haphazardly installed and on top of each other
 - Pressure compensating stems not installed with rotary nozzles
 - Pressure regulation not installed at all or low flow pressure regulation not installed
 - Sprinklers installed next to hardscape on private property – they think the setback rule only applies to public-right-of-way.
 - Wrong type of pipes used
 - Multiple inspections required



So we REVISED the Ordinance...

- In effect Feb 1, 2010
 - Irrigation and Landscape Standards have all the technical code stuff including text from State Model Ordinance
 - All new construction & major remodel must submit plans
 - Minimum requirement for SF = mulch
 - No permit if doing irrigation retrofit or new irrigation system
 - SF redoing entire landscape can only have 20% high water using plants (already required for MF and Businesses)
 - 24" setback for sprinklers



At least as effective as State

- ALL landscape and irrigation must comply with City ordinance
- Only the most water-efficient irrigation equipment can be installed (precip rate ≤ 0.75 inches per hour)
- Water budget – not required
 - WBICs
 - MAWA vs. ours would allow gardens to use 16x more water
- No audit
 - B&S inspectors testing system and making sure installed per approved plans
 - Audit requirement is only to provide a report not a fix



What's Working Now...

- Continue training Planning and Building and Safety
- Brochure mailed to every property per Council request
- Updated website – www.sustainablesm.org/landscape
- Working with local suppliers
- List of Sustainable Landscape Professionals
- New hands-on workshops for designers, contractors, maintenance landscapers (English & Spanish)
- More grants, more rebates, direct install program and give-aways
- Enforcement of water waste ordinance = compliance with new Standards!



Questions?



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