

# Recovery Act Financing of Ground Water Systems

Presented to the  
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# ARRA Purposes

- Preserve & create jobs
- Promote economic recovery
- Assist people most impacted by recession
- Provide investments needed to increase economic efficiency spurring technological advances
- Invest in . . . environmental protection . . . providing long-term economic benefits
- Stabilize state and local government budgets . . . to avoid reductions in essential services

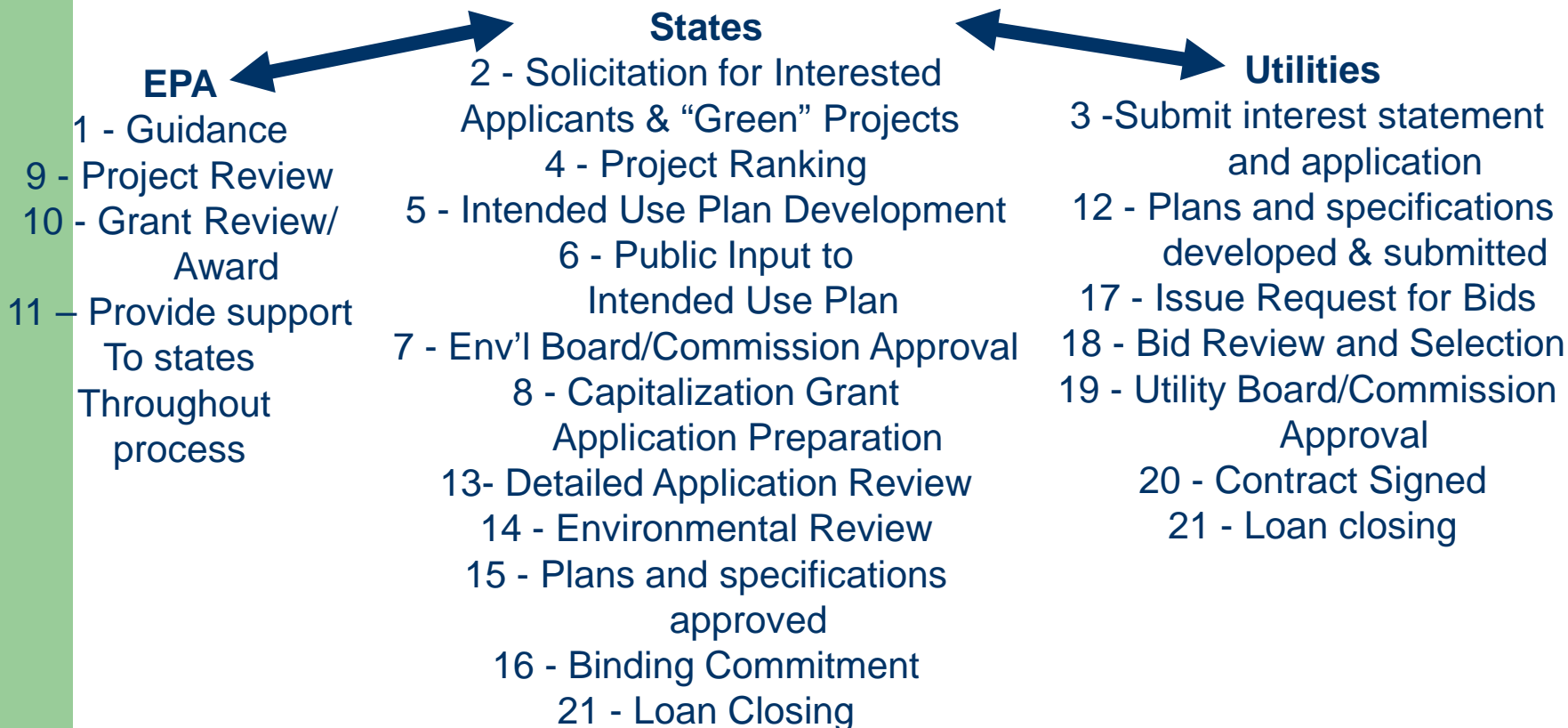
# ARRA Used Successful State Revolving Fund (SRF) Financing Process

- To address purposes of the Act, added processes to SRF for:
  - American iron & steel
  - Buy American components
  - Additional subsidization
  - Green, water & energy efficient, & innovative technology
  - Davis-Bacon wages
  - Reporting

# Overview

- American Recovery & Reinvestment Act: \$2 billion dollars for “shovel ready” drinking water system improvements
- All states met February 17, 2010, the statutory deadline, for funds in contracts or construction
- As of September 2010, 60 percent of the funds spent for jobs & public health objectives.
- Significant funding & resultant expenditure for infrastructure of ground water-supplied public water systems.

# Federal-State-Local Processes & General Chronology up to 2/17/10



Now in construction phase – 185 of 1,345 projects completed

# Significance of Ground Water Systems

In 2009, Ground Water Systems:

- Were 78 percent of all community water systems
- Served 88 million people
- Serving 3,300 or fewer people accounted for 87 percent of all drinking water violations

# Infrastructure Needs Are Significant



Courtesy of Alan Thompson, SVP United Water

## The “Replacement Era” for Water Distribution Infrastructure

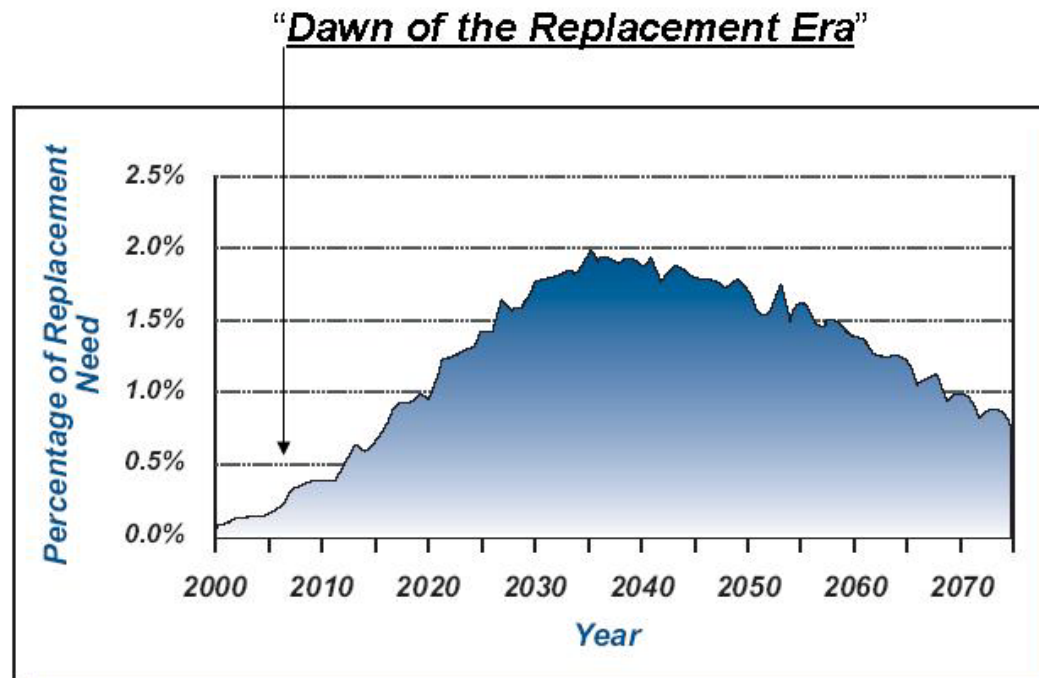


Figure 2-11: Projected Annual Replacement Needs for Transmission Lines and Distribution Mains, 2000–2075



## Complex Construction Settings Underground Have High Costs



# Quick ARRA Summary for Ground Water: 737 Systems received \$724.5 Million

<b>Ground Water Systems as a Percent of all subsidy dollars</b>	<b>42.90%</b>
<b>Ground Water Systems as a Percent of All Green Projects by number of projects</b>	<b>55.27%</b>
<b>by dollars</b>	<b>38.82%</b>
<b>Ground water systems as a percent of All Buy American waivers</b>	<b>50.00%</b>

# Summary of ARRA-Funded Ground Water Systems

Water System Population Served	Sum of ARRA \$	No. Systems ARRA\$	Min of ARRA\$	Max of ARRA\$	Total ARRA Subsidy	Avg. ARRA Subsidy
25-100	\$18,847,724	50	\$3,925	\$2,729,408	\$12,725,585	\$254,512
101-500	\$68,398,903	118	\$2,000	\$6,330,000	\$56,664,007	\$480,203
501-1,000	\$56,814,784	89	\$16,500	\$5,145,843	\$43,718,603	\$491,220
1,001-3,300	\$194,987,798	219	\$10,000	\$6,543,102	\$138,431,281	\$632,106
3,300-10,000	\$171,227,247	134	\$42,500	\$10,895,000	\$120,794,971	\$901,455
10,000-50,000	\$147,555,960	99	\$93,000	\$5,943,200	\$113,792,941	\$1,149,424
50,000-100,000	\$46,784,764	16	\$180,000	\$14,839,000	\$29,282,879	\$1,830,180
100,000-250,000	\$3,404,814	5	\$286,000	\$1,524,039	\$2,581,114	\$516,223
250,000-500,000	\$3,000,000	1	\$3,000,000	\$3,000,000	\$2,550,000	\$2,550,000
500,000-1,000,000	\$9,140,265	4	\$1,206,874	\$2,988,810	\$9,140,265	\$2,285,066
>1,000,000	\$4,328,393	2	\$1,765,775	\$2,562,618	\$3,422,873	\$1,711,437
<b>Grand Total</b>	<b>\$724,490,651</b>	<b>737</b>	<b>\$2,000</b>	<b>\$14,839,000</b>	<b>\$533,104,520</b>	<b>\$723,344</b>

# Ground Water (GW) Systems

- Equal 55% of ARRA Drinking Water Systems
- Received 36% of ARRA funds
- Serving up to 10,000 persons represent:
  - 83% of GW Systems receiving ARRA funds
  - 70% of ARRA funds going to GW Systems
- Smallest ARRA funded amount = \$2,000
- Largest ARRA funded amount = \$14.8 million
- Total subsidy for all GW projects = 74%

# ARRA GW Green Projects

Water System Population Served	Sum of ARRA \$	No. Green Projects	Sum of Total GPR \$
25-100	\$18,847,724	6	\$780,151
101-500	\$68,398,903	40	\$14,083,128
501-1,000	\$56,814,784	29	\$14,814,328
1,001-3,300	\$194,987,798	96	\$53,235,745
3,300-10,000	\$171,227,247	55	\$36,439,416
10,000-50,000	\$147,555,960	41	\$54,417,296
50,000-100,000	\$46,784,764	7	\$26,062,080
100,000-250,000	\$3,404,814	1	\$50,000
250,000-500,000	\$3,000,000	0	\$0
500,000-1,000,000	\$9,140,265	2	\$5,660,426
>1,000,000	\$4,328,393	1	\$1,765,775
<b>Grand Total</b>	<b>\$724,490,651</b>	<b>278</b>	<b>\$207,308,345</b>

- are 38% of ARRA ground water projects
- are 29% of ARRA funds going to ground water systems

# GW Green Project Types

Water System Size	Green Water #	Green Water \$	Green Energy #	Green Energy \$	Green Infra-structure #	Green Infra-structure \$	Green Innovative #	Green Innovative \$
25-100	3	\$656,200	3	\$123,951				
101-500	26	\$9,186,230	13	\$3,270,547	4	\$1,591,489	1	\$34,862
501-1,000	21	\$11,257,303	12	\$1,458,341	2	\$2,025,000	3	\$73,684
1,001-3,300	68	\$36,138,116	52	\$13,052,479	4	\$3,630,917	6	\$1,236,020
3,300-10,000	28	\$22,146,993	33	\$7,074,726	1	\$20,000	7	\$7,197,697
10,000-50,000	24	\$27,562,537	25	\$18,190,522	3	\$3,255,000	4	\$5,409,237
50,000-100,000	5	\$25,589,000	1	\$365,080			1	\$108,000
100,000-250,000	2	\$462,500	1	\$1,375,000			1	\$412,500
250,000-500,000								
500,000-1,000,000	2	\$5,660,426						
>1,000,000			1	\$1,765,775				
<b>Grand Total</b>	<b>179</b>	<b>\$138,659,305</b>	<b>141</b>	<b>\$46,676,421</b>	<b>14</b>	<b>\$10,522,406</b>	<b>23</b>	<b>\$14,472,000</b>

# Water Loss at Water Systems

- Can be 5-10 per cent – non-excessive
- Excessive water loss may be as high as 30 or more percent
- Examples:
  - Some large systems have documented 15-30% water loss
  - Some medium sized systems documented as high as 50% water loss

## Pumping Accounts for 95%+ of Energy Use!

**Table 1: Typical Electrical Energy Use in a Drinking Water System for Treatment and Delivery of Water<sup>1</sup>**

Operation	Percentage of Electrical Energy Required for Water System Operations	
	Ground Water Source	Surface Water Source
Source Water Pumping	33%	9%
Treatment	1%	5%
Distribution Pumping	66%	86%
<b>Total Energy Required for Pumping</b>	<b>99%</b>	<b>95%</b>



# Funding for GW Green Project Types

- 57% of ARRA funding for GW Green projects at systems serving 10,000 or fewer persons
- 66% of ARRA funding of GW Green projects for water efficiency
- 22% of ARRA funding of GW Green projects for energy efficiency

# ARRA Ground Water Project Type Funding by Percent

- Treatment 21%
- Transmission/Distribution 53%
- Source 11%
- Storage 10%
- Other 5%

**Thank-You!**

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