

Irrigation Conservation Practices, Estimate of Water Savings, Table 1

Com- parison	Current Base System	Proposed system change	Estimated water savings range (%)	Estimated water savings average (%)	Potential no. Of irrigation systems affected	Average year ¹ , total potential gallons saved if fully implemented (million gal.)	Dry year ² , total potential gallons saved if fully implemented (million gal.)	Estimated cost for full implementation on an average system (1998 \$)	Statewide costs for full implementation (Million \$, 1998)	Cost / Unit water saved, average year (1998 \$/ /million gal)
Center Pivot and Linear Move Systems (Average system size = 100 ac, total number of systems in Georgia = 8500)										
1	No end gun shutoff (8000 potential systems)	End gun shutoff	5 to 10	7.5	2000	2851	4887	\$500	1	351
2	Current sprinkler package has uniformity < 80% (4400 potential systems)	New sprinkler package (same as original)	0 to 10	5	4400	4181	7168	\$250 \$0 to \$1000 (\$1/ft)	2.2	526
3	23 degree impacts on top, high pressure (1700 potential systems)	Reduced angle impacts, medium pressure	5 to 15	10	850	1616	2770	\$1,200 \$500 to \$2,000 (depending on labor to remove old sprinklers)	1.02	631
4	23 degree impacts on top, high pressure (1700 potential systems)	Low pressure sprinklers on top of irrigation boom	5 to 15	10	200	380	652	\$3,500 \$1,000 (\$1/ft) + \$2,500 booster pump ³	0.70	1841
5	23 degree impacts on top, high pressure (1700 potential systems)	Low pressure sprinklers on drops, 10-20 psi	5 to 25	15	200	570	977	\$4,000 \$1,500 (\$1.50/ft) + \$2,500 booster pump ³	0.24	421
6	Reduced angle impacts, medium pressure (3000 potential systems)	Low pressure sprinklers on top of irrigation boom	0 to 5	2.5	700	333	570	\$1,000 (depending on labor to remove old sprinklers)	0.7	2105
7	Reduced angle impacts, medium pressure (3000 potential systems)	Low pressure sprinklers on drops, 10-20 psi	0 to 10	5	700	665	1140	\$4,000 \$1,500 (\$1.50/ft) + \$2,500 booster pump ³	2.8	4209
8	Reduced angle impacts, medium pressure (3000 potential systems)	LEPA, drops near ground, furrow diking	0 to 10	5	50	48	81	\$4,500 \$2,000 (\$2/ft) + \$2,500 booster pump ³	0.225	4735
9	Low pressure sprinklers on top of irrigation boom (2550 potential systems)	Low pressure sprinklers on drops, 10-20 psi	0 to 10	5	2550	2423	4154	\$1,500 (\$1.50/ft)	3.83	1578
10	Low pressure sprinklers on drops, 10-20 psi (1300 potential systems)	LEPA, drops near ground, furrow diking	0 to 3	1	0	0	0	n/a	n/a	n/a

¹Average year is based on 7 inches (180 mm) of water applied during the cropping season

²Dry year is based on 12 inches (305 mm) of water applied during the cropping season

³Note: booster pump may or may not be required based on individual systems

Irrigation Conservation Practices, Estimate of Water Savings, Table 2

Com- parison	Current Base System	Proposed system change	Estimated water savings range (%)	Estimate d water savings average (%)	Potential no. Of irrigation systems affected	Average year ¹ , total potential gallons saved if fully implemented (million gal.)	Dry year ² , total potential gallons saved if fully implemented (million gal.)	Estimated cost for full implementation on an average system (1998 \$)	Statewide costs for full implementation (Million \$, 1998)	Cost / Unit water saved, average year (1998 \$/ million gal.)
<i>Improved Irrigation Practices Appropriate for All Systems (assumed average system size = 100 ac, total number of systems in Georgia = 13,000)</i>										
11	No current method of scheduling irrigation applications	Adopt a method of scheduling irrigation applications	-10 to +10	0	11,700	0	0	\$700 \$400 to \$1,000	8.19	0.0000
12	No current method of scheduling irrigation applications	Irrigation scheduling with Class A Evaporation Pan	-10 to +10	0	11,700	0	0	\$1,500	17.55	0.0000
13	No uniformity test performed in last 5 years	Uniformity test	? ³	0	11,700	0	0	\$250	2.925	0.0000
14	No uniformity, calibration, or maintenance check in last 5 years	Irrigation audit performed	? ⁴	? ⁴	11,700	0	0	\$1,000	11.7	0
15	No major maintenance checks in last 5 years	Major maintenance check performed	? ⁵	? ⁵	11,500	0	18735	\$500	5.75	0
16	Pressure gages not operating	Replace/repair pressure gages	-5 to +5	0	6,500	0	0	\$50 \$25 to \$100	0.33	0.0000

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²Dry year is based on 12 inches (305 mm) of water applied during the cropping season

³Estimated water savings may be -10 to +10% depending on system needs and implementing changes based on uniformity test. Uniformity improvements will increase efficiency of water use.

⁴Estimated water savings may be -15 to +50% if changes are implemented as a result of the irrigation audit. Irrigation audit effects will increase efficiency of water use across entire system.

⁵Estimated water savings may be 0 to 10% if changes are implemented as a result of a major maintenance check. A maintenance check will help increase efficiency of irrigation system.

Irrigation Conservation Practices, Estimate of Water Savings, Table 3

Com- parison	Current Base System	Proposed system change	Estimated water savings range (%)	Estimated water savings average (%)	Potential no. Of irrigation systems affected	Average year ¹ , total potential gallons saved if fully implemented (million gal.)	Dry year ² , total potential gallons saved if fully implemented (million gal.)	Estimated cost for full implementation on an average system (1998 \$)	Statewide costs for full implementation (Million \$, 1998)	Cost / Unit water saved, average year (1998 \$/ million gal)
<i>Traveling Gun Systems Including Cable and Hose Tow (Average system size = 85 ac, total number of systems in Georgia = 4000)</i>										
17	80 psi traveler, average leaks (4000 potential systems))	Repair water delivery system	0 to 20	10	1600	2585	4431	\$3,500 \$500 to \$6,000 (from repair of gaskets to hose)	5.6	2166
18	80 psi traveler, no speed compensation, delivery system repaired (1300 potential systems)	Speed compensation	0 to 30	10	1300	2100	3600	\$5,000 \$3,500 to \$6,500	6.5	3095
19	80 psi traveler, standard gun, 27° trajectory, ring nozzle, delivery system repaired (1200 potential systems)	Low angle gun, 18° trajectory	0 to 10	5	1200	969	1662	\$1,500	1.8	1857
20	80 psi traveler, delivery system repaired (4000 potential systems)	Adequate operating pressure	-5 to +5	0	1000	0	0	\$3,500 \$500 to \$6,000	3.50	??

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Irrigation Conservation Practices, Estimate of Water Savings, Table 4

Com- parison	Current Base System	Proposed system change	Estimated water savings range (%)	Estimated water savings average (%)	Potential no. Of irrigation systems affected	Average year ¹ , total potential gallons saved if fully implemented (million gal.)	Dry year ² , total potential gallons saved if fully implemented (million gal.)	Estimated cost for full implementation on an average system (1998 \$)	Statewide costs for full implementation (Million \$, 1998)	Cost / Unit water saved, average year (1998 \$/ million gal)
<i>Drip/Trickle/Mini/Micro Irrigation Systems (Average system size = 70 ac, total number of systems in Georgia = 1100)</i>										
21	Orchards, totally buried system, no arches/pressure control, no pressure compensating emitters, 10 years old (800 potential systems)	Operation time and scheduling based on weather and season	20 to 40	30	500	1996	4887	\$1,500 \$0 to \$10,000 (depending on scheduling method chosen)	0.75	376
22	Orchards, totally buried system, no arches/pressure control, no pressure compensating emitters, 10 years old (800 potential systems)	Better pressure control	0 to 10	5	800	532	912	\$1,000	0.8	1503
23	Orchards, totally buried system, no arches/pressure control, no pressure compensating emitters, 10 years old (900 potential systems)	Maintain system and schedule, water meter, records, repair clogged emitters	-10 to +5	-2.5	900	-299	-513	\$6,000 \$1,900 to \$7,100 + \$1,750 to \$3,500 per year	5.4	-18039
24	Orchards, micro-sprinkler system	Drip system with improvements above	5 to 10	7.5	100	100	171	\$14,000 \$7,000 to \$21,000	1.4	14030
<i>Solid Set Irrigation Systems (Average system size = 40 ac, total number of systems in Georgia = 1300)</i>										
25	23 degree impacts on risers, 30+ ft. spacing, poor maintenance, poor uniformity (1300 potential systems)	Proper sprinkler package, spacing, pressure, uniformity	0 to 20	10	300	228	391	\$5,500 \$600 to \$10,500 (from portable pipe to buried)	1.65	7234
26	23 degree impacts on risers as above (600 portable systems only)	Fix gaskets	0 to 20	5	600	228	391	\$500	0.3	1315
27	23 degree impacts on risers as above (700 buried PVC systems only)	Fix leaks	0 to 20	10	150	114	195	\$4,000	0.6	5261

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Irrigation Conservation Practices, Estimate of Water Savings, Table 5

Com- parison	Current Base System	Proposed system change	Estimated water savings range (%)	Estimated water savings average (%)	Potential no. Of irrigation systems affected	Average year ¹ , total potential gallons saved if fully implemented (million gal.)	Dry year ² , total potential gallons saved if fully implemented (million gal.)	Estimated cost for full implementation on an average system (1998 \$)	Statewide costs for full implementation (Million \$, 1998)	Cost / Unit water saved, average year (1998 \$/ million gal)
<i>Comparisons Between Systems (Average system size based on starting system)</i>										
28	80 psi traveller, average leaks, no speed compensation (4000 potential systems)	Center pivot or linear move (average system size applicable = 60 ac)	10 to 20	15	400	684	1173	\$30,000 \$25,000 to \$35,000	12	17538
29	Overhead sprinkler (orchard application, 300 potential systems)	Drip system (average system size applicable = 70 ac)	20 to 40	30	300	1197	2053	\$35,000 \$28,000 to \$42,000	10.5	8769
30	Overhead sprinkler (vegetable application, 800 potential system)	Surface drip system (average system size applicable = 70 ac)	-10 to +25	7.5	800	798	1368	\$38,000 + \$13,000/yr \$35,000 to \$56,000 + \$10,500 to \$17,500 per year	40.8	51110
31	Solid set, 23 degree impacts on risers, 30+ ft spacing (1300 potential systems)	Center pivot or lateral move (average system size = 40 ac)	10 to 30	20	50	76	130	\$20,000	1.00	13153
32	Solid set, 23 degree impacts on risers, 30+ ft spacing (1300 potential systems)	Traveller system (average system size = 40 ac)	0	0	n/a	0	0	n/a	0.00	??
33	Solid set, 23 degree impacts on risers, 30+ ft spacing (1300 potential systems)	Surface drip irrigation system (average system size = 40 ac)	0 to 40	20	20	30	52	\$15,000	0.30	9865
34	Overhead sprinkler system (13,500 potential systems)	Subsurface drip irrigation system (average system size = 95 ac)	-10 to +15	2.5	13,000	5868	10060	\$70,000 \$45,000 to \$95,000	910.00	155070

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