

Landscape Transformation – Incentives or Ordinances

Implement incentives or ordinances to encourage water use efficiencies and reduce water needs for outdoor irrigation and other goals through regionally appropriate landscapes with an emphasis on landscape functionality (Implementation of an ordinance option could include implementing turf grass area, irrigated area, and/or irrigation area limitations).

Average Annual Yield (AF/yr)	1,944 - 16,580
End Use / Sectors	Sectors: SFR, MFR, COM End Uses: Outdoor irrigat Ordinance: New developm Incentive: Existing develop
Climate resiliency indicator	Medium
Annual Costs (\$)	\$85,000 - \$190,000
Unit Cost (\$ / year / AF)	\$23 - \$96

WATER FORWARD INTEGRATED WATER RESOURCE PLAN

M ation, new development oment opment









Landscape Transformation – Incentives



Landscape incentives to encourage water use efficiency and reduce outdoor water use

Average Annual Yield (AF/yr)	1,944
End Use / Sectors	Sectors: SFR, MFR, COM End Uses: Outdoor irrigati
Climate resiliency indicator	Medium
Annual Costs (\$)	\$85,000
Unit Cost (\$ / year / AF)	\$96

WATER FORWARD INTEGRATED WATER RESOURCE PLAN

ation, existing development









Irrigation Efficiency Incentives

Expand current irrigation rebate programs to include irrigation system controllers that make flow data accessible and are capable of responding to leaks and high flow situations.

Average Annual Yield (AF/yr)	570
End Use / Sectors	Sectors: SFR, MFR, COM End Uses: Outdoor irrigate existing development
Climate resiliency indicator	Medium
Annual Costs (\$)	\$85,000
Unit Cost (\$ / year / AF)	\$202

WATER FORWARD INTEGRATED WATER RESOURCE PLAN

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Advanced Metering Infrastructure (AMI)

Customer-facing real time water information and metering through AMI

 Climate resiliency indicator Annual Costs (\$) 	Both new and existing deve High \$6,052,500
End Use / Sectors	Sectors: SFR, MFR, COM End Uses: All, leaks assun usage patterns in indoor/ou
Average Annual Yield (AF/yr)	9,380

WATER FORWARD INTEGRATED WATER RESOURCE PLAN

M Imed to mirror City-wide outdoor split. velopments







Water Loss Control Utility Side

Enhance current utility – side water loss control programs

Average Annual Yield (AF/yr)	13,060
End Use / Sectors	Sectors: System-wide End Uses: Water losses (Both new and existing dev
Climate resiliency indicator	High
Annual Costs (\$)	\$37,498,900
Unit Cost (\$ / year / AF)	\$3,690

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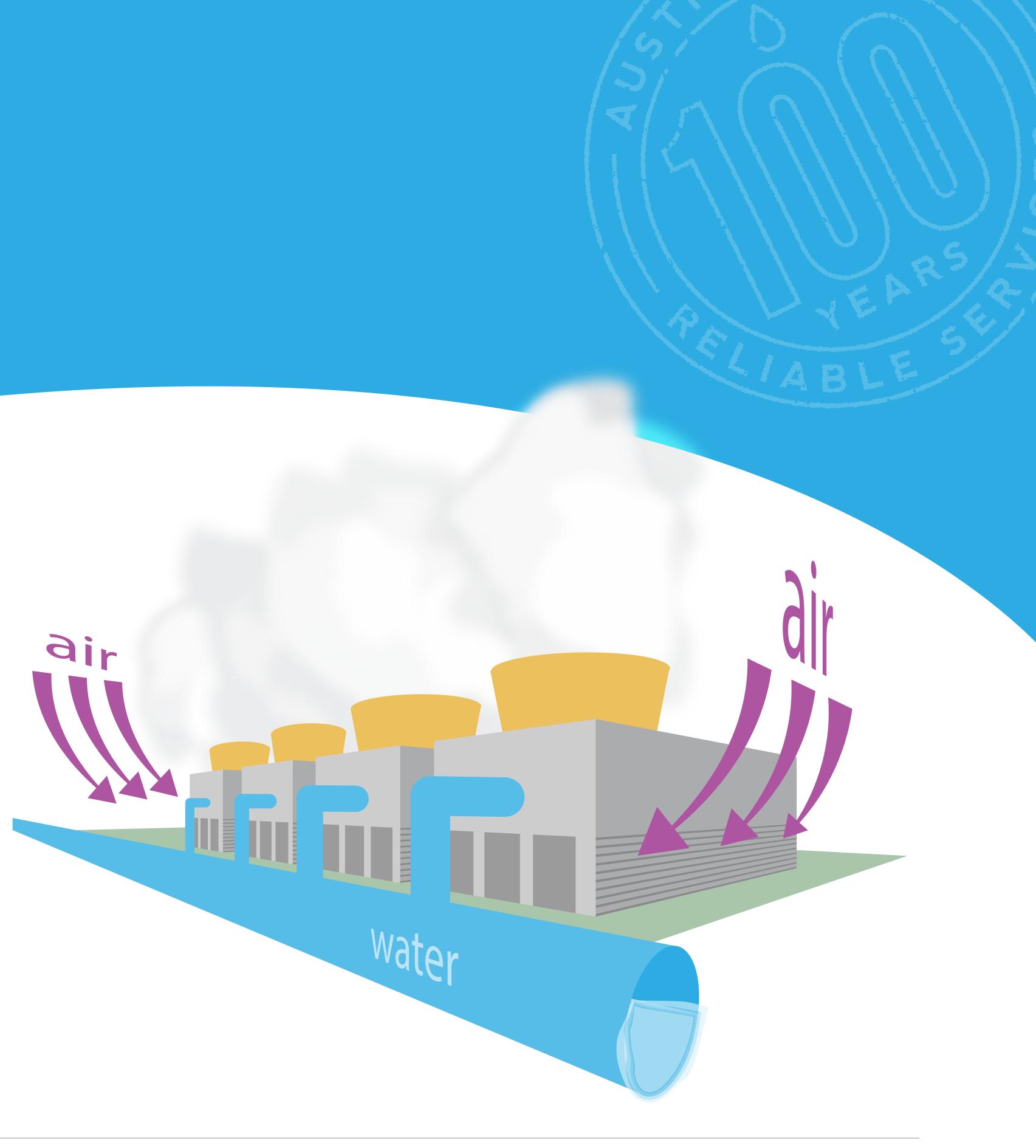




Commercial, Industrial and Institutional (CII) Ordinances – Cooling Towers and Steam Boilers

Require older cooling towers and steam boilers to meet efficiency standards

Average Annual Yield (AF/yr)	1,060
End Use / Sectors	Sectors: MFR, COM, and End Uses: HVAC. Existing
Climate resiliency indicator	Medium
Annual Costs (\$)	\$75,000
Unit Cost (\$ / year / AF)	\$71



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Development-focused Water Use Benchmarking and Budgeting

 Requirement of water use estimate submittal paired with enhanced outreach and education with transition to water budgeting

Average Annual Yield (AF/yr)	29,680
End Use / Sectors	Sectors: SFR, MFR, COM End Uses: All. New Deve
Climate resiliency indicator	High
Annual Costs (\$)	\$350,000
Unit Cost (\$ / year / AF)	\$21

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Alternative Water – Ordinances or Incentives

Require or incentivize, on-site (building-scale) alternative water use (for rainwater, stormwater, blackwater, graywater and ac condensate)

RAINWATER HARVESTING (LOT-SCALE)

Rainwater Harvesting involves the capture and storage of roof water to supply a range of onsite demands at the lot/building scale. Implementing rainwater harvesting in new developments provides an opportunity to plumb the residence or building with internal connections for toilet flushing or clothes washing. Where used indoor treatment is required.

Supply Type	Decentralized
Average Annual Yield (AF/yr)	18,707 - 34,494
End Use / Sectors	Sectors: Single family, mu End Uses: Various scenar outdoor/indoor non-potable new development
Climate resiliency indicator	Medium
Annual Costs (\$)	\$48,988,051 - \$136,793,34
Unit Cost (\$ / year / AF)	\$2,619 - \$ 3,966

WATER FORWARD INTEGRATED WATER RESOURCE PLAN

CONDENSATE WATER

Water produced in a heating, ventilation and air conditioning (HVAC) system as the result of evaporative cooling.

nultifamily, and commercial arios range from ole and indoor potable,

GRAYWATER

Wastewater from showers, bathtubs, handwashing lavatories, sinks that are used for disposal of household or domestic products, sinks that are not used for food preparation or disposal, and clotheswashing machines. Graywater does not include wastewater from the washing of material, including diapers, soiled with human excreta or wastewater that has come into contact with toilet waste.

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RAINWATER

W^{ng} water) backup

Precipitation collected from roof surfaces or other above ground structures.

STORMWATER

Precipitation collected at or below grade surfaces.



BLACKWATER

Waste that originates as human, animal, or plant waste from certain activities, including the use of toilet facilities, washing, bathing, and preparing food.

STORMWATER HARVESTING (LOT-SCALE)

Lot scale stormwater harvesting involves the capture and storage of stormwater runoff generated from impervious surfaces (including roof water) within the lot boundary of multi-family residential or commercial development to supply a range of onsite demands at the lot/building scale.

Supply Type	Decentralized
Average Annual Yield (AF/yr)	14,437 - 24,472
End Use / Sectors	Sectors: Multifamily and c End Uses: Various scenar indoor non-potable, new de
Climate resiliency indicator	Medium
Annual Costs (\$)	\$79,551,197 - \$123,874,68
Unit Cost (\$ / year / AF)	\$5,062 - \$5,510

GRAYWATER REUSE (LOT-SCALE)

For this project, graywater harvesting is defined as the reuse of water from the laundry, shower and bath at the lot/building scale to meet non-potable demands. There are two main types, graywater diversion devices and graywater treatment systems.

Supply Type	Decentralized
Average Annual Yield (AF/yr)	23,759-71,662
End Use / Sectors	Sectors: Single family, mu End Uses: Various scenar non-potable, new developr
Climate resiliency indicator	High
Annual Costs (\$)	\$61,974,405 - \$764,319,62
Unit Cost (\$ / year / AF)	\$3,898 - \$10,666

commercial arios, outdoor and development

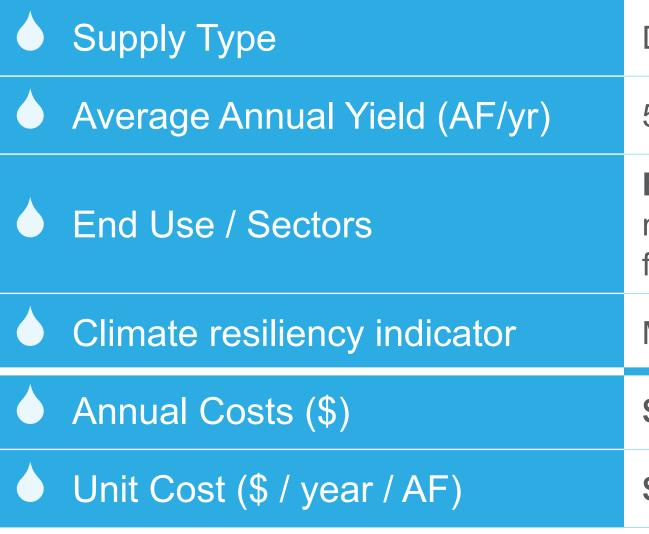
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ultifamily and commercial arios, outdoor and indoor oment

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AC CONDENSATE REUSE

Collection and reuse of condensate water from Air Handling Units (AHUs) for cooling systems from new development with cooling capacity over 200 tons.



BLACKWATER REUSE (LOT-SCALE)

This involves the onsite capture and treatment of the wastewater stream generated from a building for onsite reuse via a dual (purple) pipe system to supply outdoor demands (irrigation/landscaping) and non-potable indoor demands (toilets and potentially also laundry and cooling towers).

Supply Type	[
Average Annual Yield (AF/yr)	7
End Use / Sectors	E
Climate resiliency indicator	ŀ
Annual Costs (\$)	9
Unit Cost (\$ / year / AF)	\$



Decentralized

5150

End Uses: indoor and outdoor non-potable; multi-family, commercial, and City of Austin sectors for new and existing development

Medium		
\$13,913,749		
\$2,702		

Decentralized

78,636

End Uses: outdoor and indoor non-potable; multifamily and commercial sectors for new development

High

\$998,027,817

\$12,692