

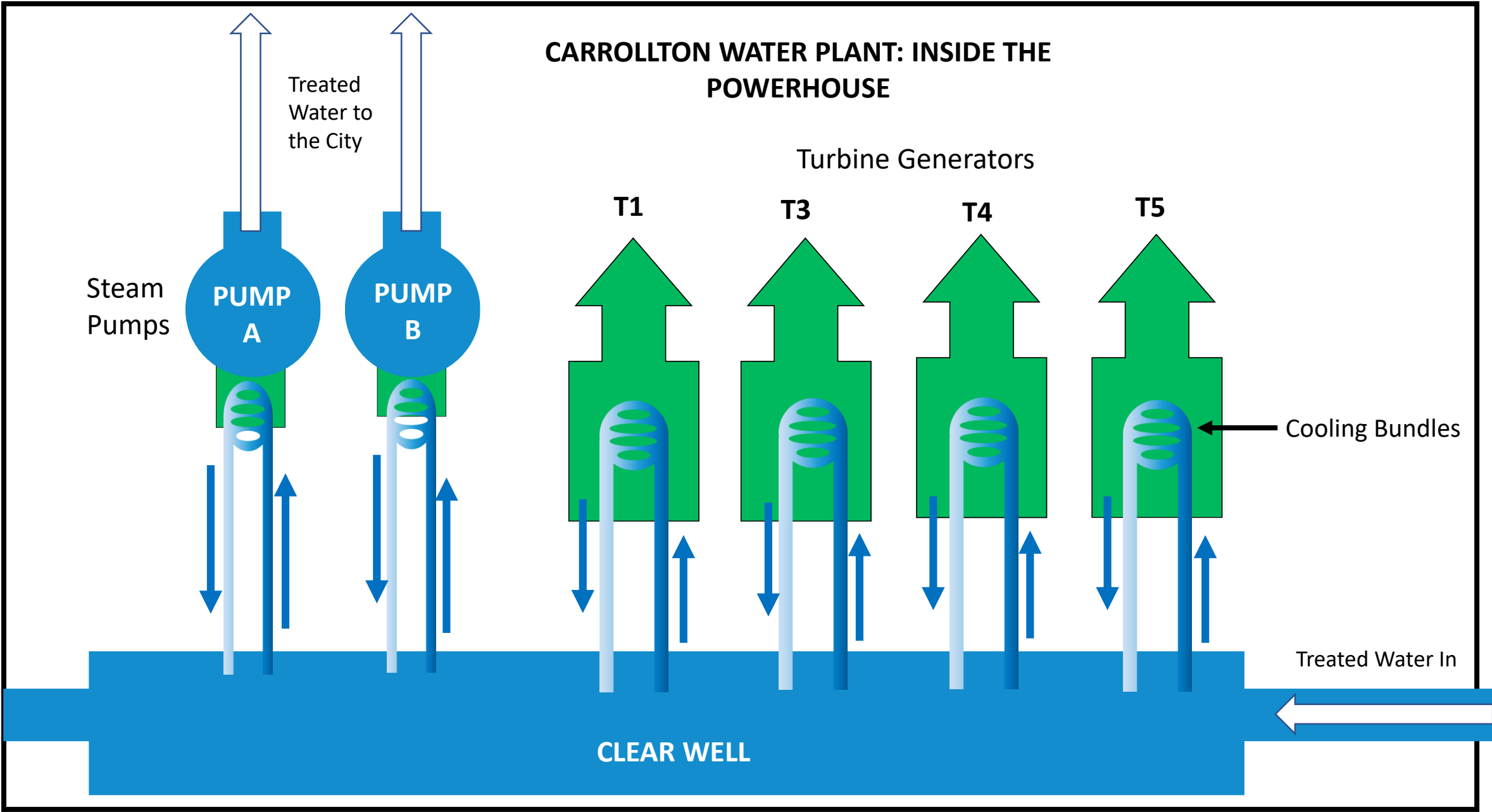
**STEAM POWER**  
**and**  
**DRINKING WATER**



# SWBNO STEAM EQUIPMENT



# CARROLLTON WATER PLANT: INSIDE THE POWERHOUSE



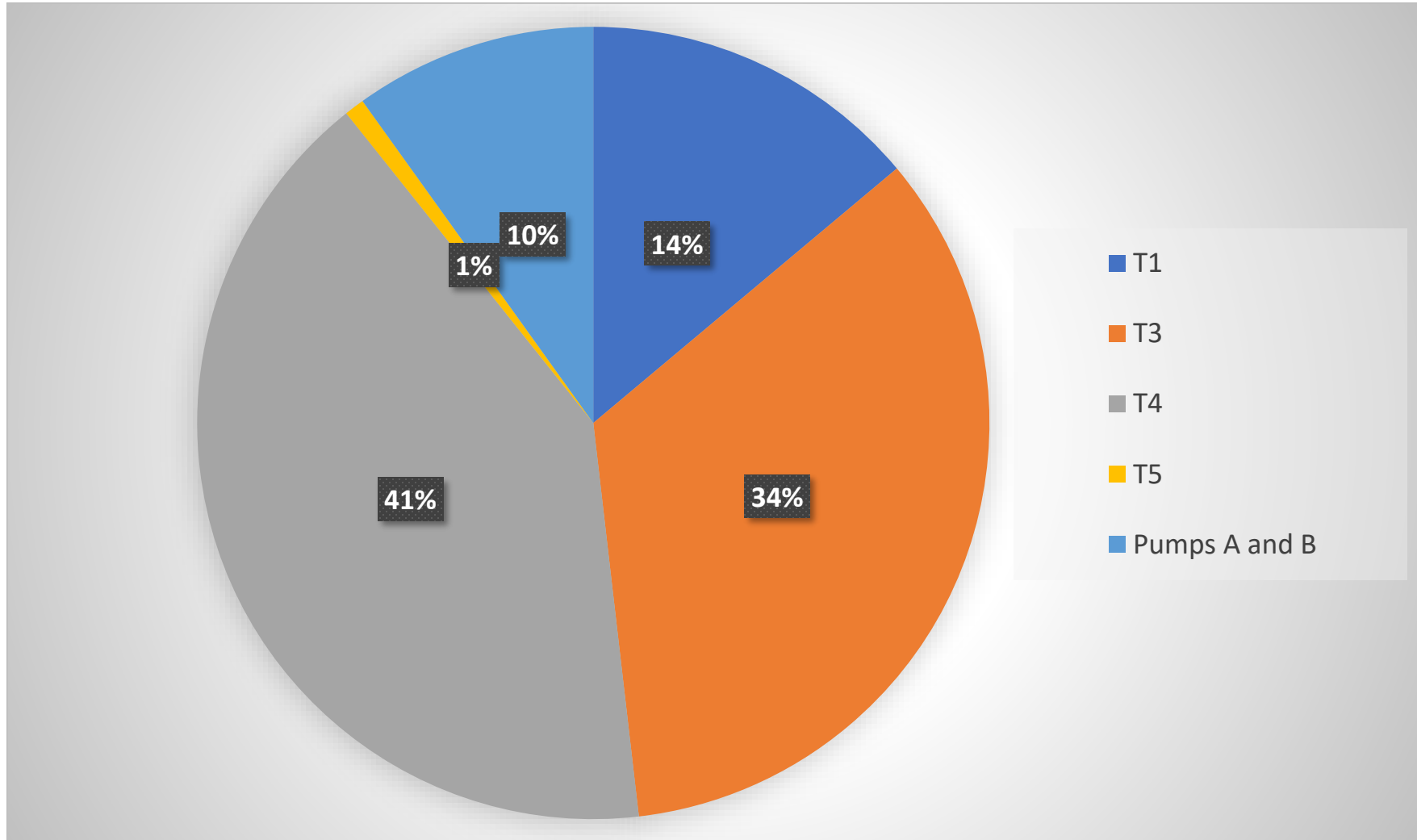
# CURRENT SELF-GENERATED POWER

UNIT	FREQUENCY	MEGAWATTS
Turbine 1	25 Hz	~6 MW*
Turbine 3	25 Hz	~7 MW*
Turbine 4	25 Hz	20 MW
Turbine 5	25 Hz	20 MW
Turbine 6	60 Hz	15 MW**
Five EMDS	25 Hz	12.5 MW
<b>TOTAL</b>	<b>25 Hz</b>	<b>65.5 MW</b>
<b>TOTAL</b>	<b>60 Hz</b>	<b>15 MW</b>

\*Actual capacity, not nameplate, due to age of machinery

\*\*T6 can produce 3.75 MW of 25 Hz power through current frequency changer

# Cooling Water Used by Each Turbine and Pumps



# PROACTIVE STEPS TAKEN

- Self-reported to Louisiana Department of Health and City Department of Health
- Increased water quality testing beyond LDH requirements
- Designated T5 as primary 25 Hz generator
- Begun conversion of Pumps A and B from steam to electric motors

# NEW TESTING PROCESS

- Began testing water quality 4 days a week at Clear Well discharge location
- Will invest in monitoring technology to test constantly
- Will continue to test water quality daily at sample sites throughout the City
- Examples of what we test for:

Alkalinity

Water hardness

Floride

Turbidity

pH Levels

Temperature

Chlorine residuals

Ammonia

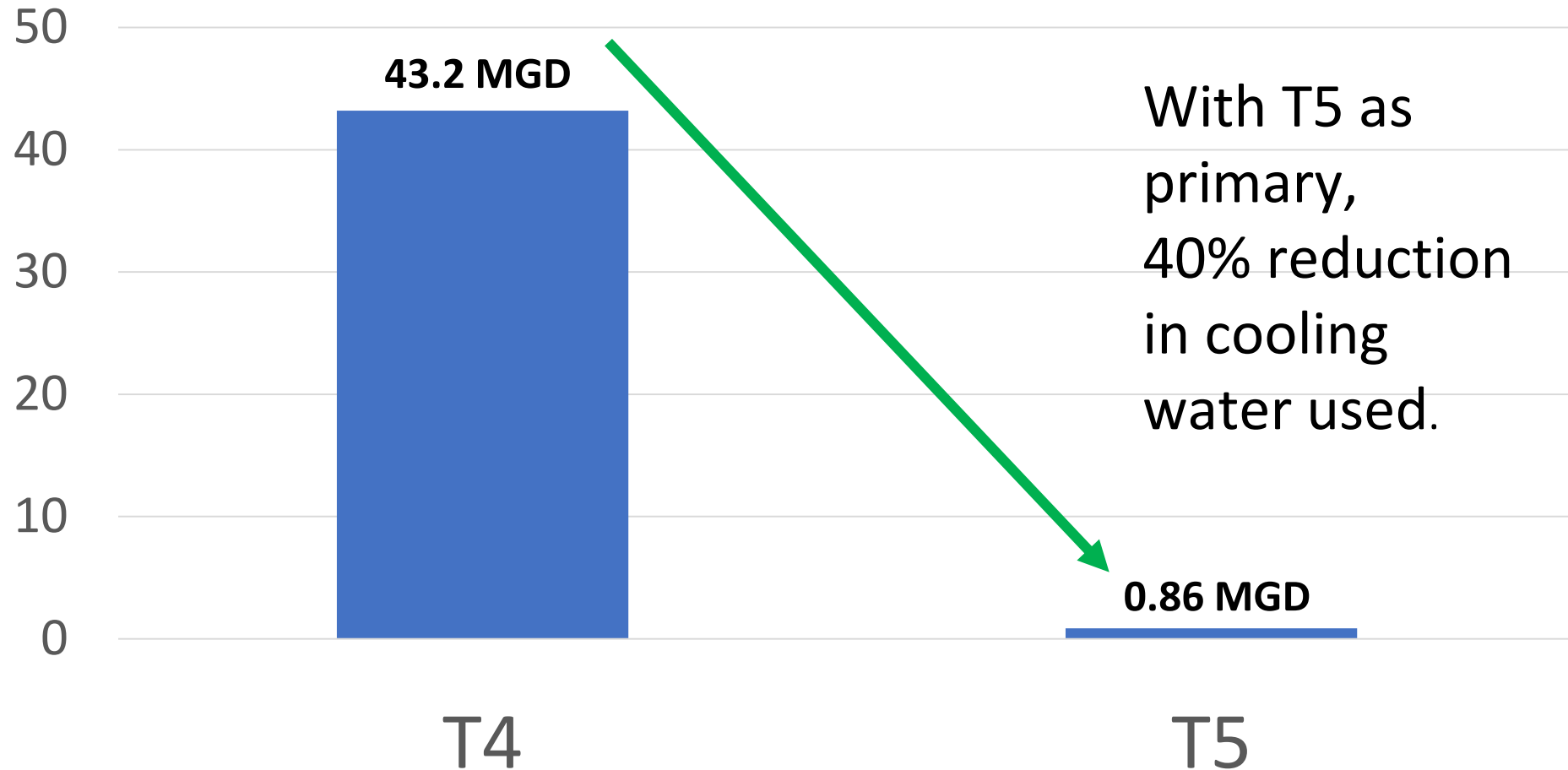
Coliform bacteria

Metals

Adding Pseudomona

Adding Legionella

# Switch from T4 to T5 = DONE





# NEXT STEPS

- Finish conversion of A and B pumps to electric power
- Ready EMDs for daily use, including sound-dampening
- Upgrade T6 heating system to run in cold weather
- Install 15-20 MW frequency converter for T6 and Entergy power

# FINAL STATE OF STEAM

- Decommission T1 and T3



Turbine 1



Turbine 3

- Install air-cooled heat exchanger on T5
- Reroute cooling water discharge from T4
- Permanent 60Hz substation at Carrollton Plant