

**Managing the  
Paradigm Shift-  
From Wastewater  
Treatment into  
Water Resource  
Recovery**

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# A Brief Intro....

“ 16+ year Operator

“ Held just about every type/level of position in municipal ops

“ Currently managing the City of Dayton's Water Reclamation Facility

“ SWOWEA Secretary (round 2)

“ Class IV, Class II, Class I

“ @JTinc20



Shameless Plug...

“ City of Dayton’s  
Department of Water—

“ \$100M utility that serves  
over 400K with water and  
270K with water  
reclamation services

“ 2 Water Plants (Ottawa  
and Miami) with almost  
200 MGD capacity

“ Water Reclamation Facility  
(aka home) with 72 MGD /  
190 MGD capacity

“ @cityofdayton



“ Sewage Works

“ Water Pollution Control

“ Wastewater Treatment

“ Water Reclamation (\*)

“ Water Resource  
Recovery

What's in a name? That which we call a rose  
by any other name would smell as sweet.

William Shakespeare

What's in a  
name?...

“ 1800’s—public health concerns—transporting and discharging waste as a way to avoid disease and infection

“ 1920’s—handling wastewater by focusing on controlling pollution in waterways

“ Today going forward—considering water reuse and reclaiming resources to convert waste into a useful by-product

Evolution of Processes,  
Technologies, and  
Philosophies



# Water Resource Recovery Concept

“Wastewater treatment plants are not waste disposal facilities, but rather water resource recovery facilities that produce clean water, recover nutrients (such as phosphorus and nitrogen), and have the potential to reduce the nation’s dependence upon fossil fuel through the production and use of renewable energy.” (WEF, 2011)



- “ liquid
- “ nutrients
- “ carbon
- “ energy
- “ heat

Pollution Conversion NOT  
Pollution Elimination



**Utility of the Future  
(WEF, WERF, NACWA)**

**“ Reduce Cost—**

**“ Energy Efficiency, Energy Recovery, Operating Efficiency**

**“ Diversify Revenue—**

**“ Water Reuse, Materials Recovery, Materials Conversion, Biosolids Reuse, Energy Generation**

**“ Support Community and Economy—**

**“ Growth Planning, Community Partnering**





**REPEAT AFTER ME:**

**“ We are not  
technology  
limited!”**



**CITY OF DAYTON**  
**water**  
one source  
Regional • Reliable • Renewable

How do we get there?

Through people and new ways of thinking aka #E3me



# Embrace

“ hug somebody: to hug somebody in your arms affectionately or passionately, or hug each other affectionately or passionately

“ make use of something: to welcome and take advantage of something eagerly or willingly

“ adopt something: to adopt or take up something, especially a belief or way of life



# Embrace

“ harness new technologies, approaches, and processes

“ stop looking for reasons NOT to innovate

“ move away from ‘SLOhio’ mindset



# Embrace

separate collection & treatment

yellow water (urine) – nutrient & water recovery

black & grey water - organics/solids removal, & recovery of energy & water



“ teach somebody: to give knowledge to or develop the abilities of somebody by teaching

“ arrange schooling for somebody: to arrange or provide schooling for somebody

“ train somebody: to train somebody, or improve somebody's awareness in a particular field

Educate



**“ at any and all opportunities to share these concepts— soccer field, grocery store, public meetings, at the bar, etc.**

**“ harness all of today’s outlets—web, social media, press, tours, visits, etc.**

**“ reel in the next generation of professionals, stakeholders, and customers**

**Educate**





**Northeast Ohio  
Regional Sewer District**



**dc** water is life®

**Educate**



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# EVOLVE

“ develop gradually: to develop something gradually, often into something more complex or advanced, or undergo such development

“ develop via evolutionary change: in evolutionary theory, to develop from an earlier biological form

“ emit heat or gas: to give off heat, gas, or vapor



- “ Deficiency ID'ed or CIP
- “ Failure History
- “ Research and Analysis
- “ Options Evaluation
- “ BCE/LCA
- “ Recommendations
- “ Scoping
- “ Approval
- “ Execution

# Evolution of a Project



COMMON  
DENOMINATOR  
Evolution of a Project

- “ Operator
- “ Maintenance
- “ Team
- “ Engineer
- “ Finance
- “ Utility Director
- “ Engineer
- “ Regulator / Politician
- “ Team



# EVOLVE

“ think holistically—  
break out of the silos

“ consider  
perspective—how is  
the next cog in the  
wheel wired?

“ work collaboratively  
towards solutions

“ learn the art of  
persuasion



# EVOLVE

“ Lower Great Miami  
River Stakeholders  
Group and Ohio EPA  
Collaboration  
Initiative

“ development of WQ  
model

“ validation of TMDL

“ joint Development of  
permit language



“Adopting a paradigm of resource recovery is not a technical challenge, it’s primarily a decision that we need to make. We don’t need to wait for the future. The future is now and we’d better start at it. And then as time develops, we’ll get better at it.

Dr. Julian Sandino of CH2M Hill



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CALL TO ACTION

#E3me ||  
Embrace  
Educate  
Evolve



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