Managing the Paradigm Shift—From Wastewater Treatment into Water Resource Recovery

Jason A. Tincu
City of Dayton
Division of Water Reclamation
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
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
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
“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)
Pollution Conversion NOT Pollution Elimination

- liquid
- nutrients
- carbon
- energy
- heat
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
“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
"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
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
“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
"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
#E3me = Embrace Educate Evolve