



Footprinting the American Landscape- A New Paradigm for Environmental Decision Making

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Do You Speak Green?

**“It is difficult to walk the walk if you
can’t talk the talk!”**



Going Green is in-www.treehugger.com

How to green:

- Your home
- Your office
- Your wedding
- Your pets
- Your coffee and tea
- Your water
- Your wardrobe
- Your meals
- Your kitchen
- Your travel
- Your sex life
- Your community
- Your baby
- Your furniture
- Your car
- Your gifts
- Your dishwasher
- Your electronics
- Your cleaning
- Your kids toys
- Your summer vacation
- Your funeral

And the answer is:

- Non-toxic sex toys
- Bamboo sheets
- Order the Greenpeace sex guide
- The rest you will have to find out on your own!!

And do you know your “carbon footprint”...

- www.carbonfootprint.com

Everybody and every thing has one nowadays!!!

I'll show you mine if you will show me yours!!



The time is right for greener wastewater and wet weather solutions based on watershed goals, meaningful public participation and regulatory sanity!!

Green solutions partners-making a real difference



Cities taking the lead in green implementation

- The “green surge “ is for real
- Big ideas are being explored
- Links to climate change initiatives and commitments in over 800 US cities
- “Out of pipe thinking”
- Real opportunities to link “small is beautiful” to big solutions

Wastewater utilities will be expected to do their “share” to reduce carbon footprints.

Wastewater Utilities not a direct target for greenhouse gas reductions but ...

- WWTP's show up on city inventories
- Energy use is significant and secondary measurements of ghg can become targeted
- Expansion and new facilities may be required to assess GHG impacts
- Water/wastewater energy use projected to continue to increase...

Ron Sims-King County Executive on the new standard for every new public works project or activity:

- “ Will it increase the region’s ghg emissions or reduce them?”
- In Massachusetts, the state demands that developers calculate and disclose the climate impact of their projects
 - Conoco-Phillips paid the state of California \$10,000,000 to expand an existing refinery!!

Many wastewater plants looking at new permits/ nutrient requirements and potential barriers to expansion

- Anti-degradation
- TMDL limitations and new requirements
- Wet Weather Treatment upgrades
- Air emissions issues linked to ghg
- GHG inventory requirements coming
- Industry leaders beginning to do carbon footprint assessments of their WWTP's

A new kind of environmental decision making process is evolving and needed

- Way beyond watersheds!!!!
- Footprints and community values
- Local/National/Global environmental costs and benefits may not be aligned
- Not driven by the CWA

Doing the right thing may mean looking outside the current regulatory framework

“To treat or not to treat-Applying chemical engineering tools and a life cycle approach to assessing the level of sustainability of a (wastewater) treatment technology

- Carbon absorption/VOC's
- Contrasted traditional “more treatment is better” to TBL
- Complex and detailed assessment

High levels of treatment required by current or proposed standards may:

- Damage the environment (in certain cases)
- Require unnecessary treatment

(In case study- known and unknown social risks dictated higher treatment)

Bob Forbes- biosolids guru

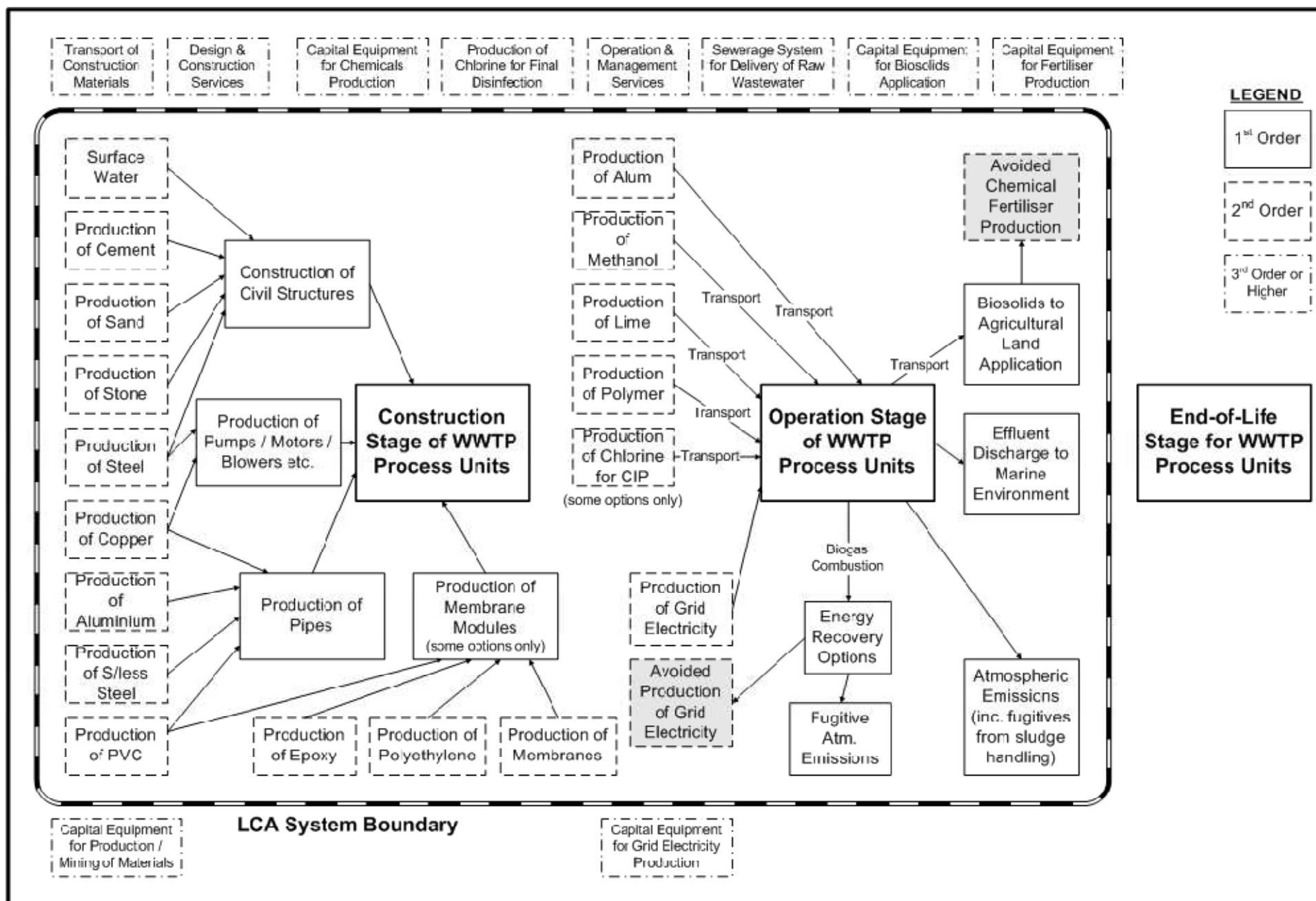
- “Biosolids processes *may* have largest impact on GHG,” *due to factors such as high carbon content of biosolids, emissions from transport, energy use and others*
- Most prevalent GHG’s (CH_4 and CO_2) *are usually* highly concentrated in biosolids
- Increasing biosolids *to meet more stringent nutrient WQ limits* = increases in GHG/carbon footprint of WWTP
- MUST look at whole biosolids value chain

And with respect to current carbon footprint assessments

“The lack of rigorous and accepted protocols could lead to the wrong conclusion and the wrong decision.”

WWTP Sustainability Assessment Tool (24x7 matrix assessment)

- Energy
- Water
- Materials
- Ecosystem impacts
- Biosolids ghg
- Social
- Economic



One critical assessment of BNR and other nutrient removal technologies(8 cases/34scenarios)

- “Do nothing”-worst environmental outcome
- BNR- Env benefits may be limited
- Chemical phosphorus removal not justified
- No significant global environmental benefit in lower effluent nitrogen concentrations!

As an industry we are not positioned to do the assessments objectively and make the case for what is “right”.

Sidebar issues

- Energy footprint impacts and unequal challenges
- Water footprints
- GHG credits-allowable???

GHG Metric ton/MWh

- Vermont-.008
- Oregon-.080
- Washington-.083
- California-.138
- New Jersey-.257
- Wyoming-.995
- North Dakota-.993
- New Mexico-.952
- Colorado-.929
- Kentucky-.901



Water footprints coming??

- Carbon footprint- 4,160,000 hits
- Water footprint- 6,330,000
- 140 litres= 1 cup of coffee

Wastewater utilities generally undervalue their role and responsibility in water conservation!

www.waterfootprint.org

Trading and credits

- Controversial
- Limited science and study
- Essential tool in the toolbox or partisan ploy
- Parson's Creek case
- Big issue with nutrient limits

Conclusions

- The future is already here- nutrient limits and carbon footprints not going away
- Utilities need to get ahead and stay ahead of climate change /carbon footprint curve
- Technical leadership and science must guide decisions and support positions taken
- Our green profile can be better and more clearly articulated- we need to talk green with commitment



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