Consideration of Climate Change Impacts in CWA Actions

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Possible Venues for Considering Climate Change Impacts under CWA

• Water Quality Standards
• TMDLs
• NPDES Permits
• Effluent Guidelines
• Pretreatment Standards
• Secondary Treatment Requirements
Water Quality Standards

• Example – Chicago Area Waterways System UAA rulemaking
  – New recreational uses with disinfection effluent standard: upgrades would result in extra electricity consumption equal to that of 10,600 households
  – New aquatic uses with numeric DO standards: energy use for aeration stations would add annual GHG emissions equal to emissions from 9,600 cars
Water Quality Standards – UAA Tests

• How to factor in carbon footprint or other climate change impacts?

• At least two UAA tests in 40 CFR 131.10(g) could apply
  – Test: man-made factors prevent attainment of use, or would cause more environmental damage to correct
  – Test 6: attainment of use would result in substantial and widespread economic and social impact – maybe this is social impact?

• Also consider requirements in state law that agency consider environmental impacts and other factors
Total Maximum Daily Loads (TMDLs)

- Example: Lower Boise River
  - Tributary covered by Snake River/Hells Canyon TMDL for total phosphorus
  - State did allocation for Lower Boise in TMDL, then did implementation plan to allocate load among sources
  - EPA disagrees with state decision to give POTWs 200 ug/l limit, wants 70 ug/l limit instead
  - Difference in limits would mean extra GHG impacts – 6200 metric tons CO2-EQ per year for City of Boise
Sustainability – Environmental Cost

- Total GHG increase from current level of treatment - FeCl₃
- Total GHG increase from current level of treatment - Alum

* Assumes Q = 60 MGD and year round limit
TMDLs – Regulatory Program

• Once TMDL target set, states have broad leeway in deciding how to allocate load among sources
• State could decide to focus reductions on those sources for which new controls would have smaller carbon impact
• Fits well with adaptive management – try those sources first, then evaluate
NPDES Permits

• Example – Upper Blackstone (MA)
  – New limits for TP and TN pre-TMDL
  – Results could include:
    • 20% increase in power consumption
    • 5 extra chemical tanker trucks per day
    • Use of 150,000 gal of methanol annually
    • 50% increase in sludge/400% increase in ash
    • Use of more than 20 mil cubic ft natural gas
    • 14% increase in NOx emissions from furnaces
NPDES Permits – Regulatory Tools

• Water Quality Trading
  – Most useful for nutrients
  – Can allow for reallocation to sources with lower carbon footprints
  – Challenges in point/nonpoint trading

• Variances – use same regulatory tests as UAAs, but shorter-term relief
ELGs & Pretreatment Standards

- ELGs – BAT must consider energy use and non-WQ environmental impacts
- Pretreatment standards – required to be set based on BAT, so if carbon impacts are part of BAT analysis, should also be part of PSES
- EPA has considered those factors before, but has not used a carbon footprint analysis yet
- Watch future rules – utility plants, health care industry – to see if/how this gets done
Changes in CWA or Policies

- EPA Climate Change Strategy notes that it may make sense to ease some CWA requirements to reduce carbon footprint impacts of compliance.
- Reaction of NGOs – opposition to any concept of trading one enviro impact for another – want both goals met.
- Does Act need to be changed to clearly identify when and how carbon impacts can/should be considered in developing and implementing CWA actions?
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