Critical Information in Making Ash Management Decisions

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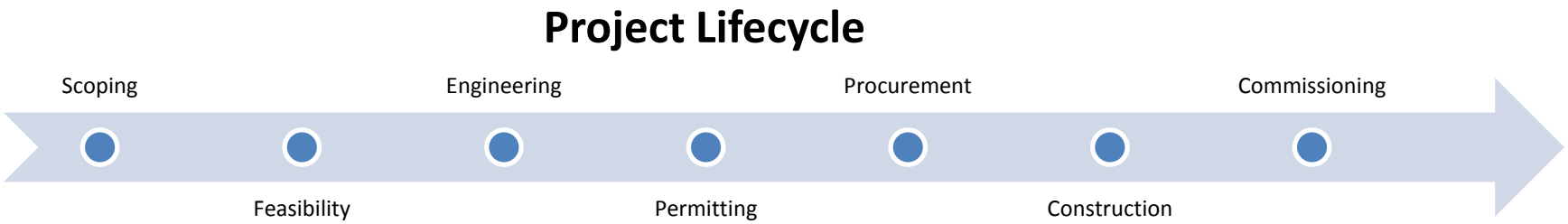
Presentation Outline

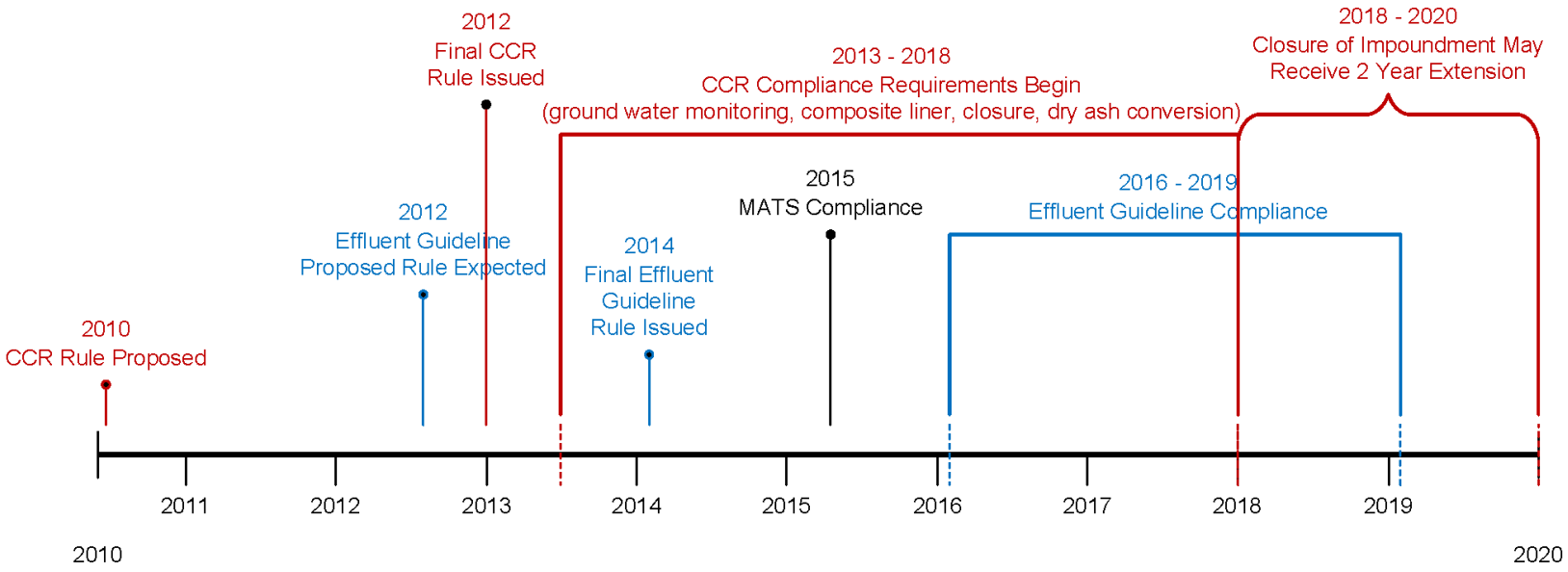
- Discussion of drivers and timelines
- Considerations in siting disposal facility
- Characterize process streams
- Permitting
- Design considerations
- Water management
- Putting it all together
- Questions

Drivers Triggering Plant Upgrades Impacting Ash Management

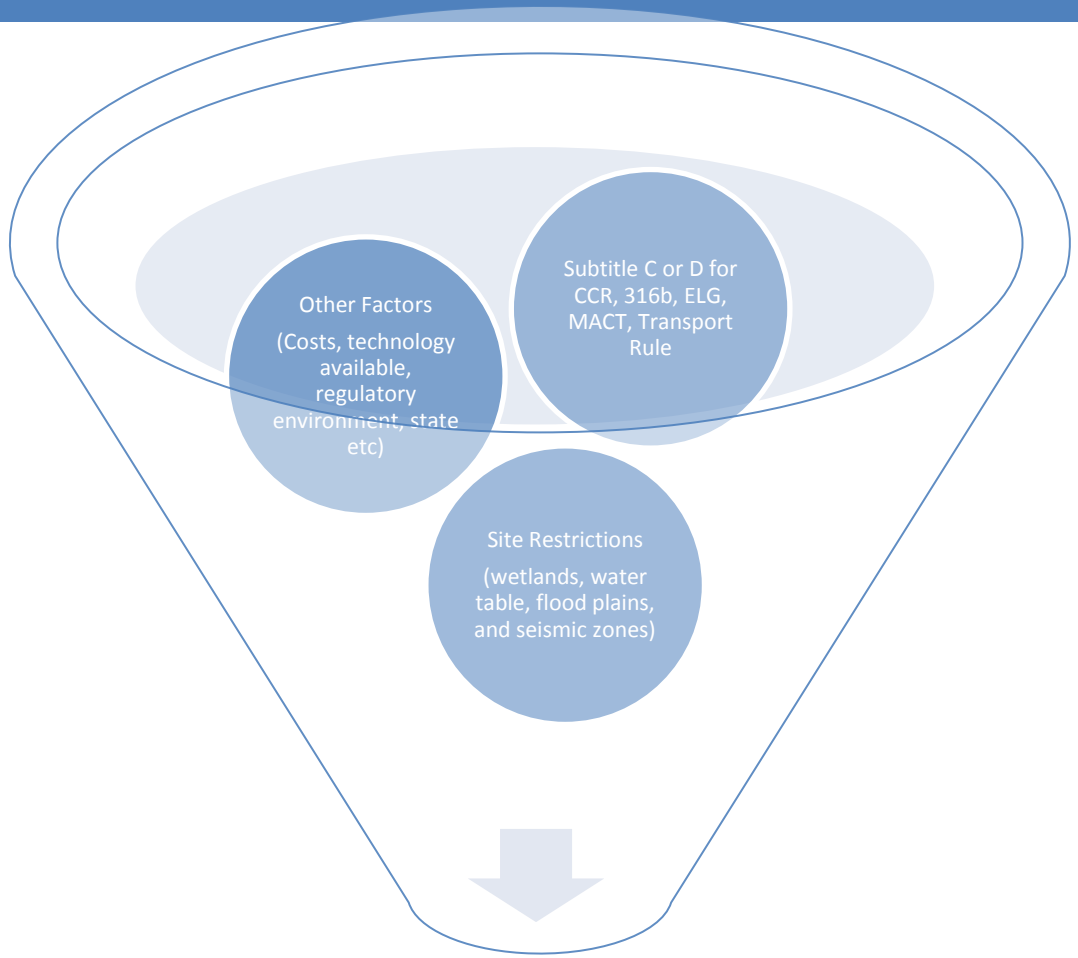
- Rules: CCR, ELG, Utility MACT, Transport Rule, 316b
- Business: capacity constraints, decision to commit additional investments to obtain ROI, other



Expected Rule Compliance Timeline



CCR Disposal Siting



CCR Disposal Site

Characterization of Process Streams

- Ash generation rates (pre versus post upgrade – consider actual survey data)
- Process water flow rates and required settling volumes
- Dry ash v. wet ash deposition adjustment
- Water quality characterization

Water and waste permitting

- Solids waste permitting
- NPDES permitting
  - Permit modifications
  - Other water discharge considerations
    - Non-impaired waters – Antidegradation
    - Impaired waters – Discharge restrictions
    - Impaired waters – Discharge prohibitions
- Transition to solid waste permit through NPDES modification

Other Permitting/Siting Restrictions

- Solid waste siting restrictions:
  - state and local
  - federal CCR proposal
- Environmental review
- Wetland permitting
  - lengthy process
  - wetland delineations

Consider impact of triggering these programs on project timeline!

Landfill or Geo-lined Impoundment Design Considerations

- Greenfield sites:
  - More likely to trigger other approvals
  - Acquisition adds complexity and time
- Brownfield sites:
  - May require additional testing for design
  - Can result in complicated sequencing
  - Efficient closure of existing facilities
- Consider geotechnical evaluations
  - narrow potential site selection

Water Treatment Endpoint Evaluations

- Identify potential surface discharge constraints
- Identify potential reuse targets (may require more detailed water balance and water quality sampling)
- Conduct bench studies (and possibly pilot studies) early to identify fatal flaws or potential operational challenges

Putting it All Together…

- Evaluate facility drivers to determine likely projects and timelines
- Consider conducting some pre-project studies to capture needed information
- Begin scoping and alternatives analysis as soon as possible – *more information is better*
- Document evaluations as dead ends appear – the number of alternatives can multiply quickly

Questions?

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