

# Environmental Roadmap to Building and Operating a Data Center

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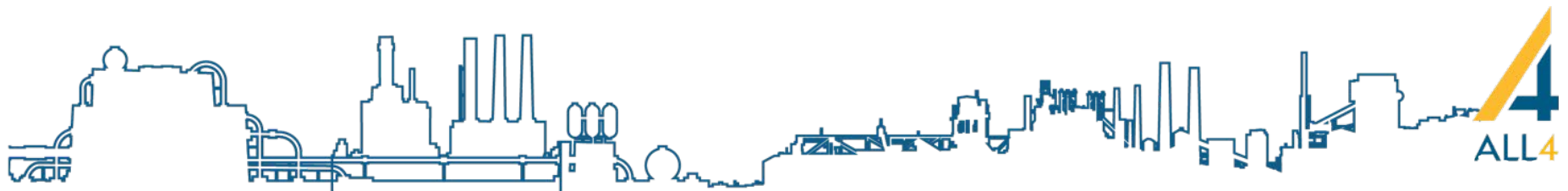
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# Logistics

Thank you for attending!

Questions?

- ❑ Please enter questions in the text box
- ❑ We will address questions at the end

Will I get a copy of the slides?

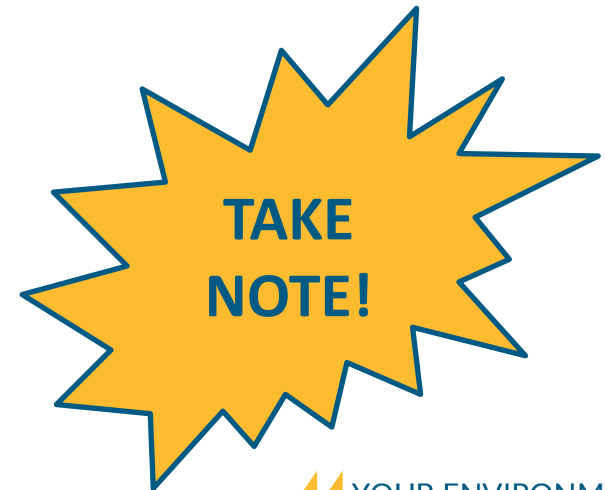
- ❑ Yes, we will post webinar recording and slide deck on our website.
- ❑ Link will be emailed to participants

# Webinar Series

First session of data center webinar series!

Example topics of remaining webinars:

- Air Permitting (e.g., tips, modeling, state-specific examples)
- Storage Tanks and Hazardous Materials
- Regulated Waste Management (e.g., Hazardous, Universal)
- Refrigerants
- On-Going Environmental Compliance



# Today's Agenda

- ❑ Site Selection
- ❑ Site Design
- ❑ Equipment Selection
- ❑ Pre-construction Planning and Permitting
- ❑ Transitioning from Construction to Operations



# Site Selection



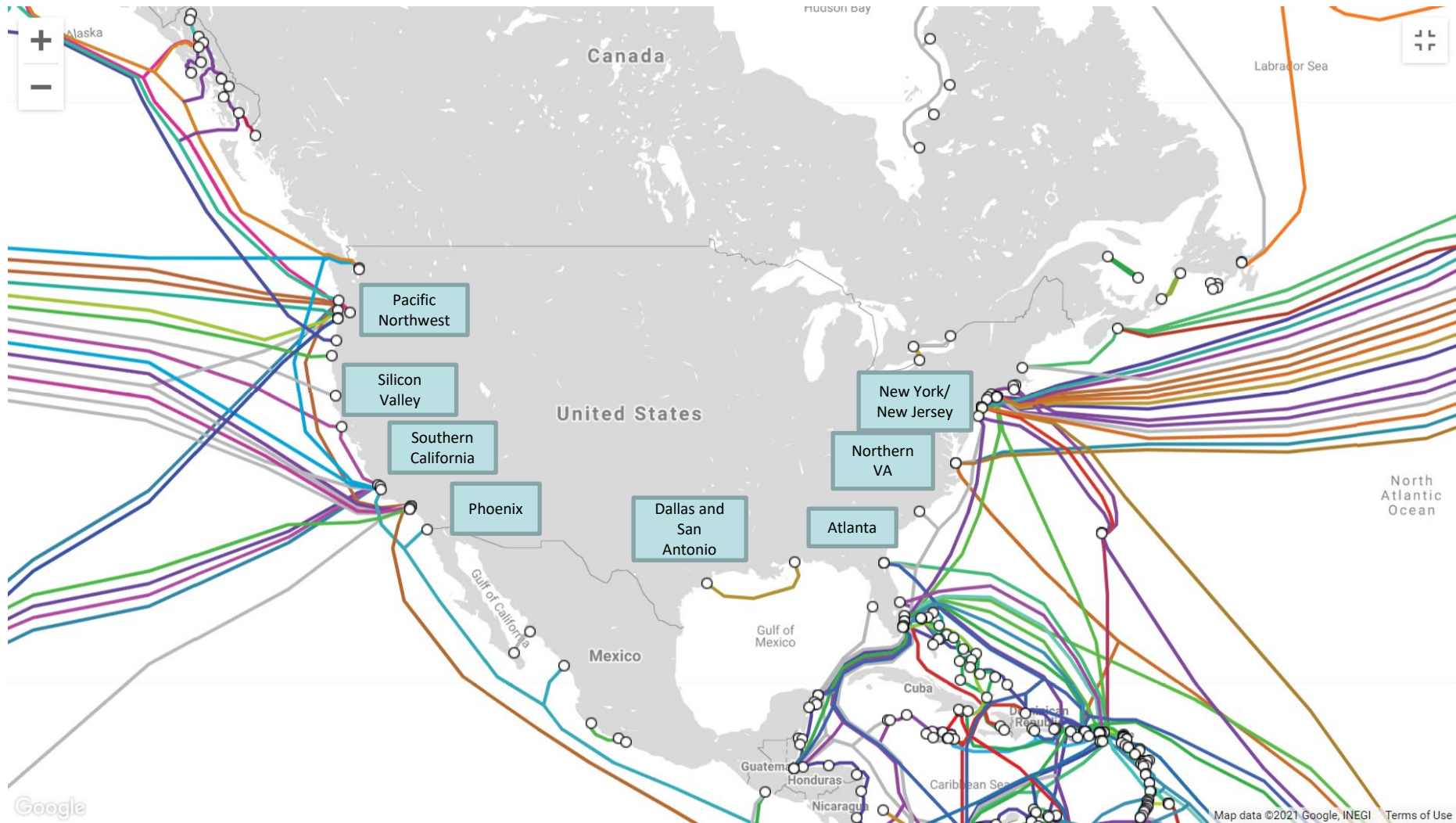


# Fun Facts on Data Centers

- ❑ Data centers are built where there's good power, good fiber ("SUBSEA" cable), lack of natural disasters, and cheap land
- ❑ As of early 2021, there are 426 subsea cable lines in service, running over 800,000 miles in length across the globe
- ❑ Only 0.37% of data is transferred across satellites which means 99.63% of our data transfers across fiber



# SUBSEA Fiber and Key Markets

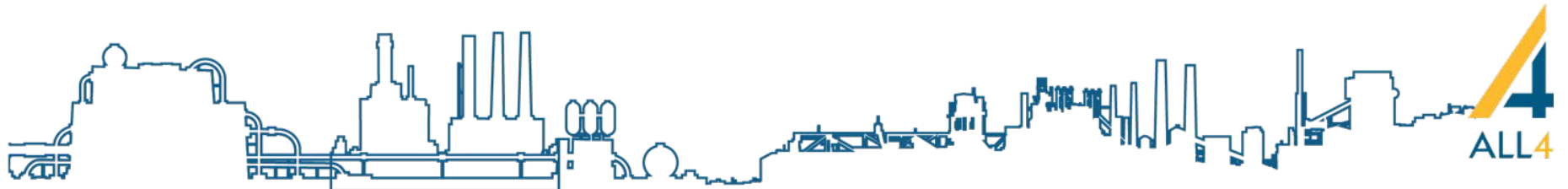
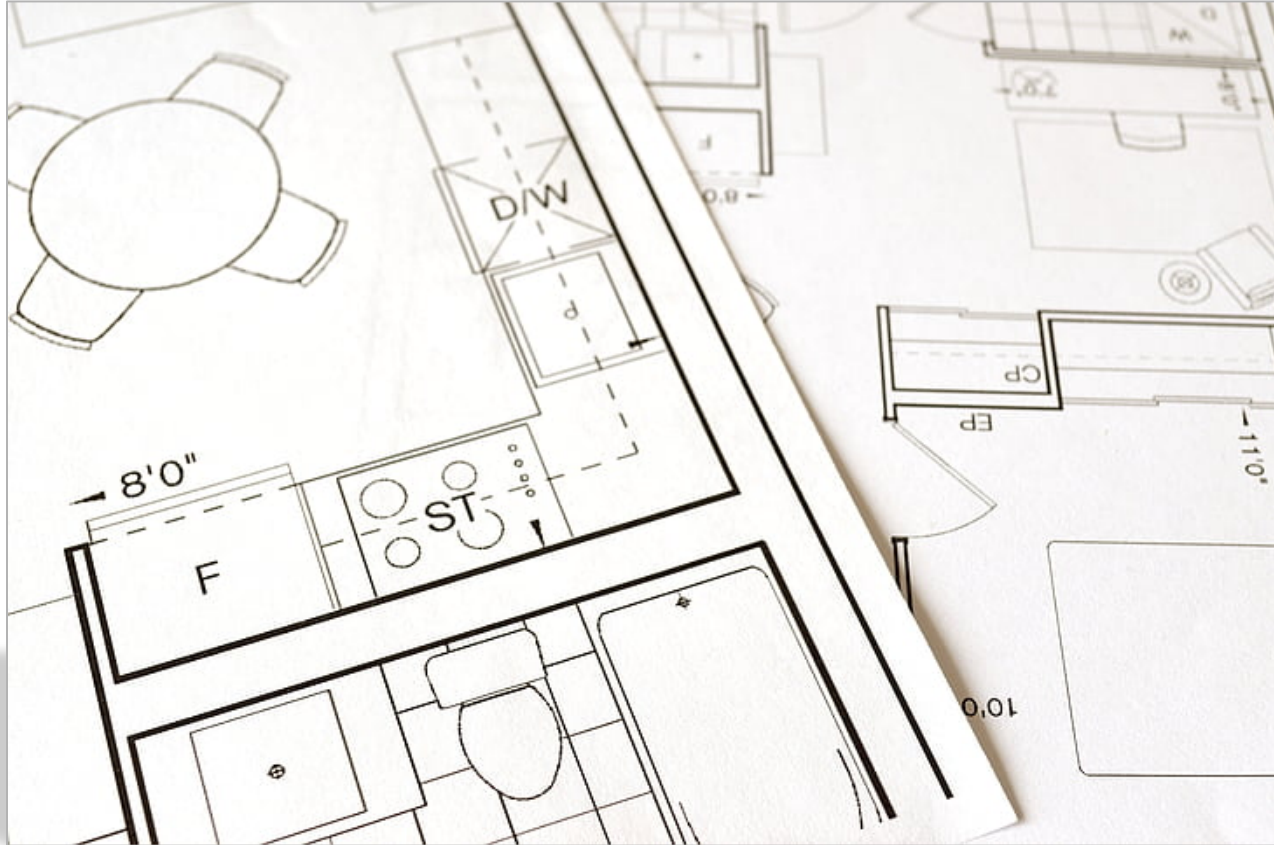


# Important Environmental Considerations

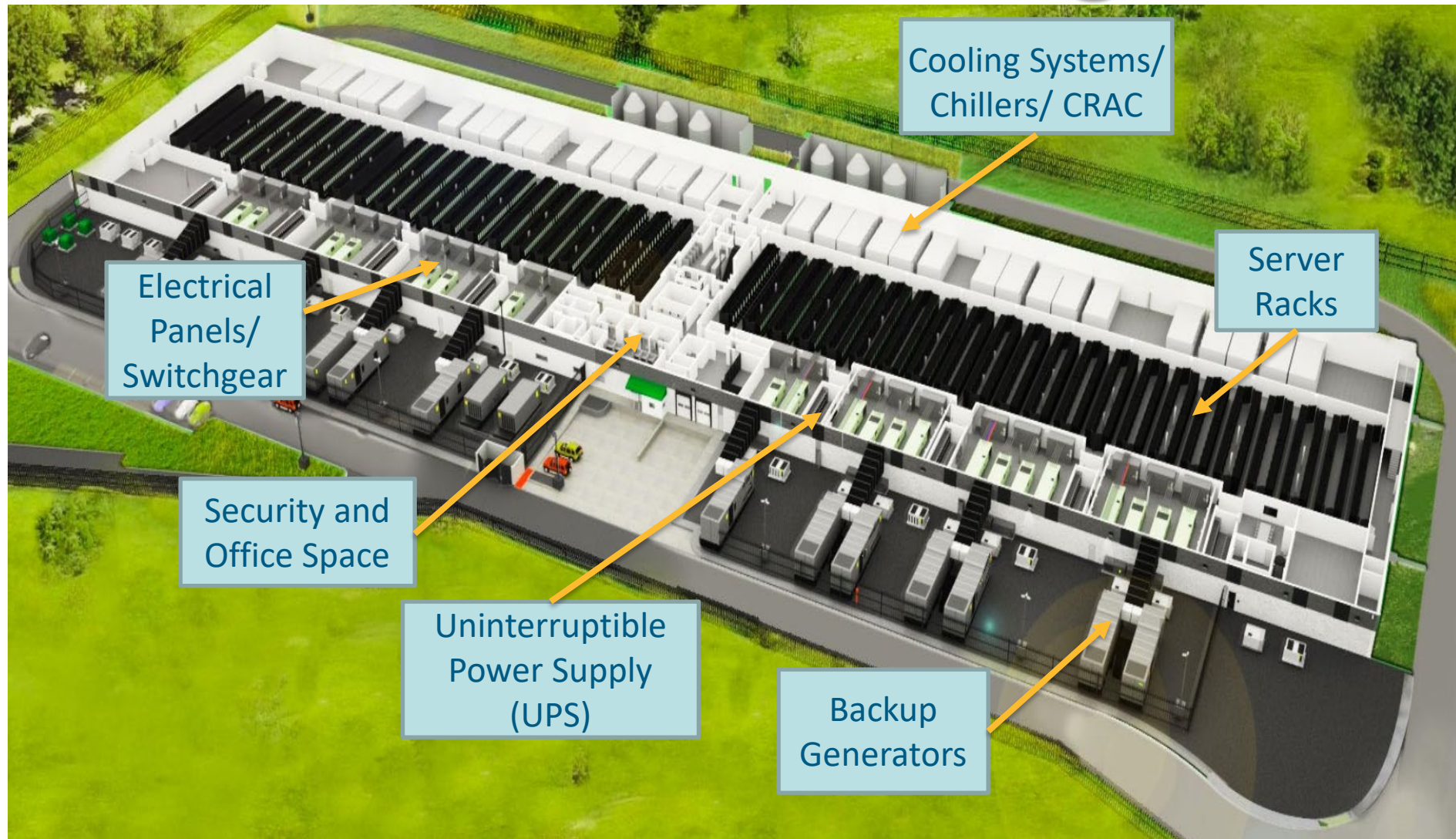
- ❑ Historical property use
- ❑ Utility locations
- ❑ Presence of wetlands or surface waters
- ❑ Presence of endangered or threatened species
- ❑ Geological formations and soils
- ❑ Local environmental requirements



# Site Design



# Data Center Design

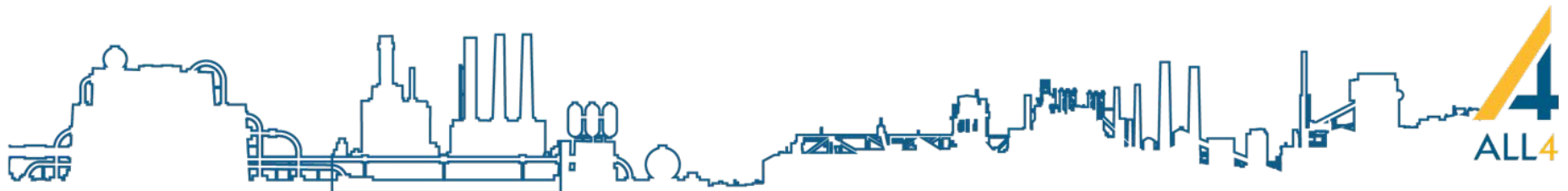


# Important Environmental Considerations

- ❑ Water management (stormwater and wastewater)
- ❑ Oil-containing equipment locations
- ❑ Hazardous materials and regulated waste storage



# Equipment Selection



# Important Environmental Considerations

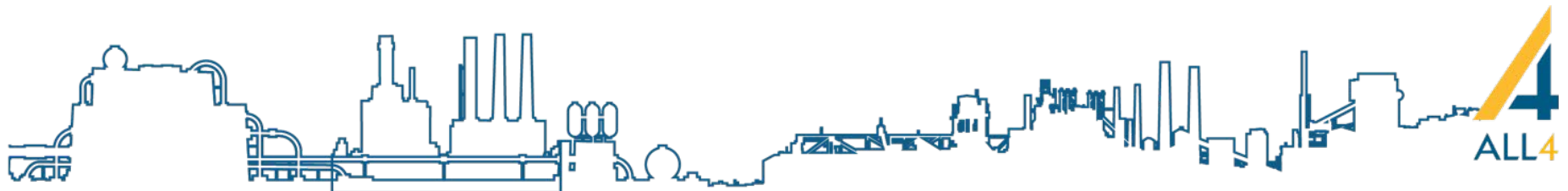
- ❑ Generators (e.g., how will they comply with emissions requirements?)
- ❑ Refrigerants (e.g., phase-out schedule, equipment size)
- ❑ Tanks (e.g., registration requirements)
- ❑ Batteries (e.g., lithium ion or lead acid)



# Intersection of Ideas

- ❑ Want large numbers of generators?
- ❑ ...Then consider environmental requirements for the full build at the beginning!
- ❑ Informs equipment selection and site design
- ❑ Balance need, cost, environmental compliance, and operational flexibility

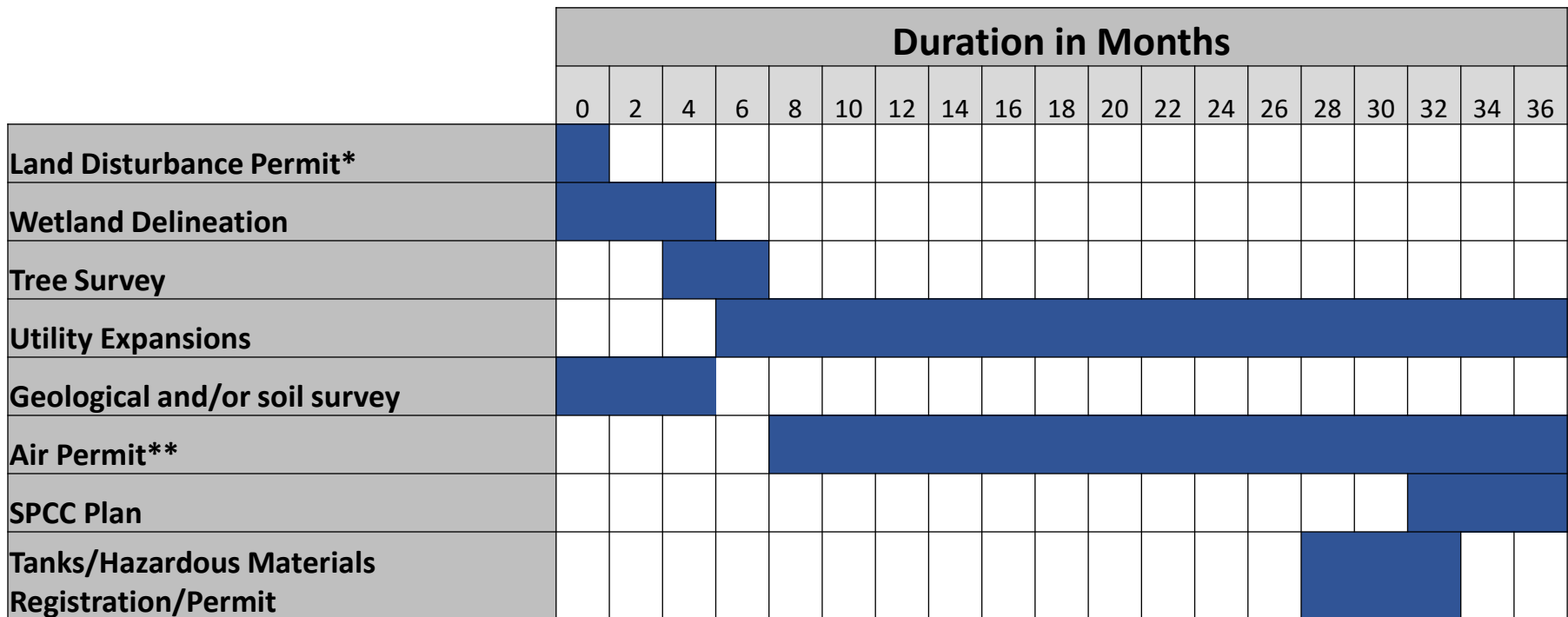
# Pre-Construction Planning and Permitting



# Example Environmental Permits and Plans

- ❑ Air permits
- ❑ Storage tank registrations (where applicable)
- ❑ Spill/Contingency Plans
- ❑ Hazardous materials (e.g., EPCRA) notifications and plans
- ❑ Water permitting (stormwater and wastewater)

# Example Environmental Timeline



\* Assumes engineering designs and all other documentation has been prepared and submitted

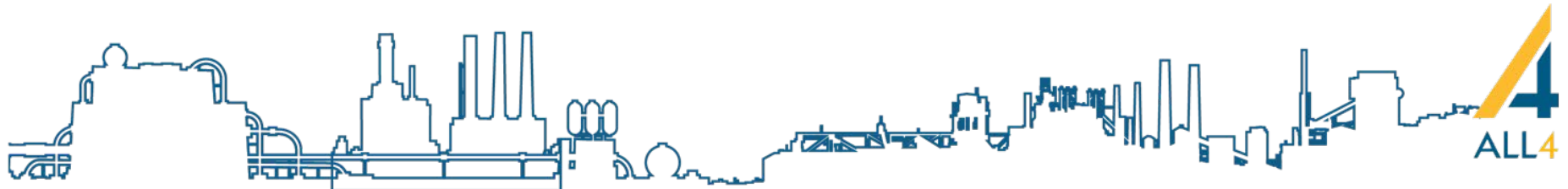
\*\* Timeline varies depending on the type of air permit (i.e., synthetic minor vs. Title V), modeling requirements, and public participation

# Managing the Paperwork

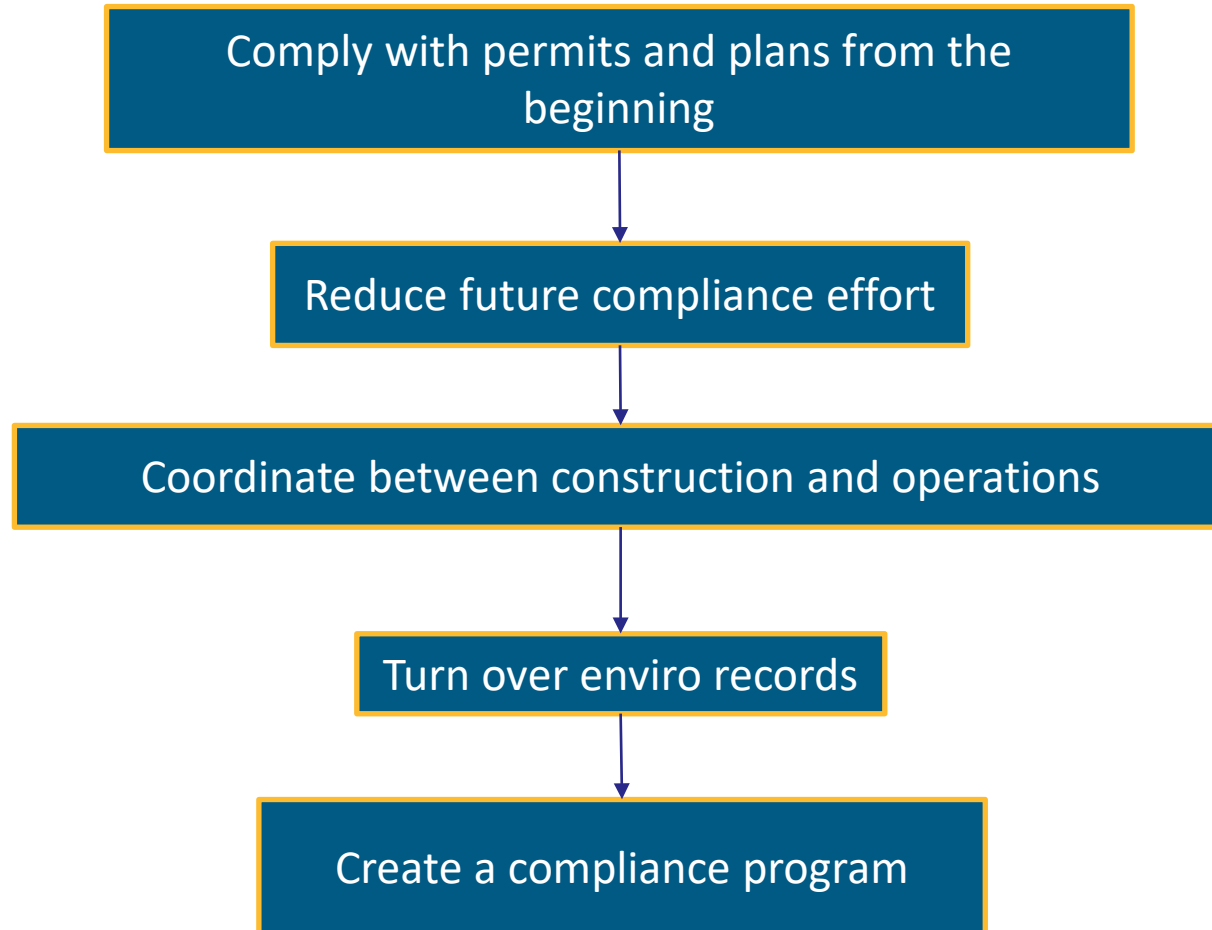
- ❑ Timeline - account for preparation, review, and processing
- ❑ Due dates – permits/plans required at different times in construction phase, and schedule shifts impact all of them
- ❑ Agency coordination
- ❑ Stakeholder alignment
- ❑ Balance schedule, construction needs, and future operational flexibility



# Transitioning to Operations



# Creating a Successful Future



# Stay Tuned...

Air  
Permitting

Storage Tanks  
and Hazardous  
Materials

Regulated  
Waste  
Management

Refrigerants

On-Going  
Compliance



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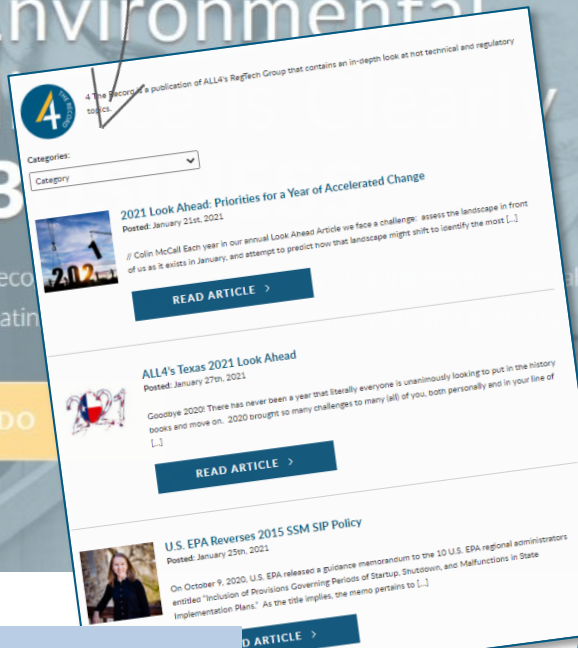
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# Questions or Comments?

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