SITING CONSIDERATIONS FOR HYDROGEN PROJECTS

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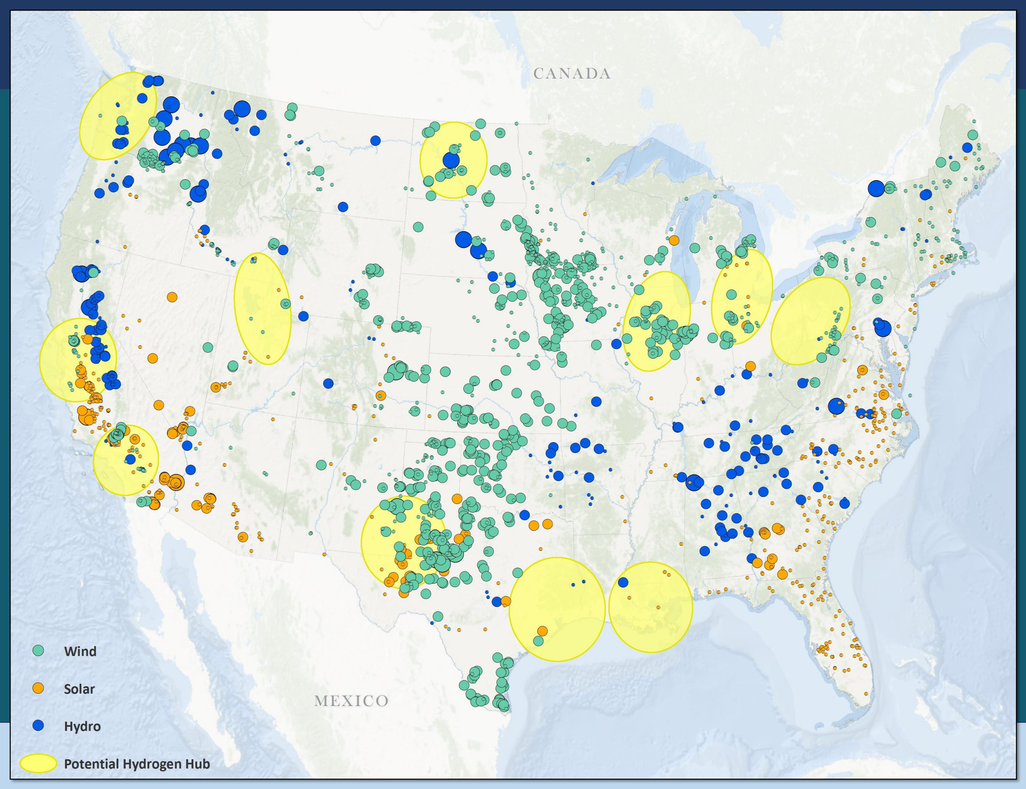
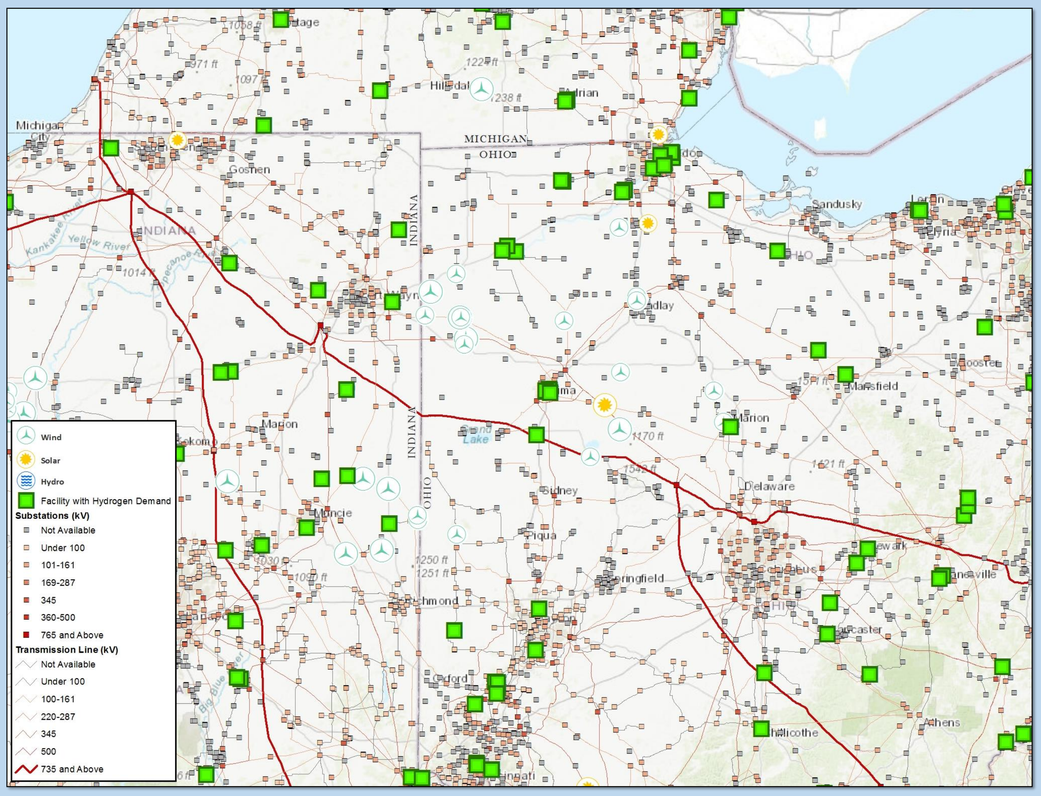
BACKGROUND

For decades, Geographic Information Systems (GIS) has been an essential technology for renewable energy project developers. By combining important datasets like property boundaries, electric infrastructure, meteorological conditions, and environmental factors like wetlands, flood hazard zones, and topography, ideal locations for development quickly become apparent. However, what makes an ideal site for development can vary based on the desired system size and more importantly, the renewable energy technology being used. While GIS professionals have been siting wind and solar projects for many years, the energy industry's new focus on hydrogen development has created a new and evolving set of criteria for site selection.





A THREE-STEP APPROACH TO SITING NEW HYDROGEN PROJECTS

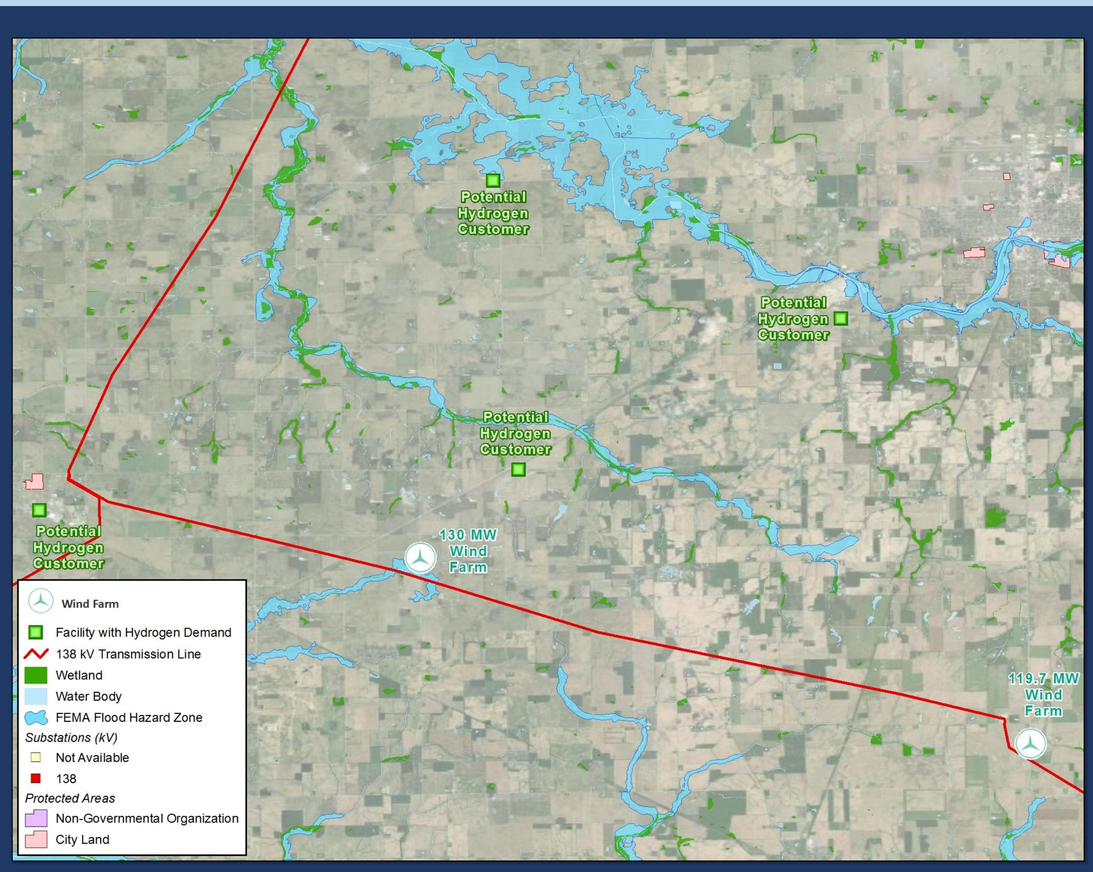
1. DETERMINE THE OBJECTIVES OF THE PROJECT. Will this be a new development pairing wind and/or solar with a new hydrogen facility? Is the developer hoping to produce hydrogen to serve nearby greenhouse gas emitting facilities already in operation? Or does a developer want to eliminate curtailment at existing wind and solar farms with hydrogen production?

2. EVALUATE REGIONAL SUITABILITY FOR HYDROGEN PROJECTS. Where are the locations with existing potential large customers for hydrogen? Are there existing renewable energy projects developed in the proximity for green hydrogen production? Are existing pipeline networks in place that can be leveraged? Where is water scarcity not a concern? GIS can answer these questions and guide developers to appropriate locations.

3. SELECT PROPERTIES TO PURSUE FOR DEVELOPMENT. Does a property have access to substations and transmission lines? Does the site have access to water? Does the property have a enough land outside of flood zones and wetlands, is it flat enough for development, and outside of protected areas? DNV answers questions like these and many more to provide rankings of sites based on our multi-criteria analysis.

SUMMARY

Our analyses use Multi-Criteria Decision Making (MCDM) with the Analytical Hierarchy Process (AHP) and GIS to locate sites potentially suitable for hydrogen development. Our team of GIS Professionals work with customers to assign levels of importance to various GIS layers of the natural and built environment. The methodology successfully identifies candidate sites for development throughout the USA. This suitability model should help hydrogen development teams effectively target locations to further investigate for potential projects.



For more information or to discuss GIS and hydrogen development please contact:

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