Description of Services

Geotechnical Considerations

Using our historical data, published information, and the experience of a local geotechnical engineer, we will provide a report of expected subsurface conditions at the site. We will address the geologic setting, groundwater, subsurface soils, underlying rock (if applicable), and the potential impacts that geotechnical considerations will have on future development of the site. We will review limited historical aerial imagery and discuss apparent previous site usage. We will also discuss foundation concepts and applicable construction considerations. If development plans are available, we will utilize our historical knowledge and professional expertise to provide a smart work plan appropriate for the next phase of your project.

Preliminary Geotechnical Design Parameters:

In addition to the Geotechnical Considerations noted above, we will provide an expectation of subsurface properties from a geotechnical engineering perspective. This is intended to aid in a preliminary assessment of the potential challenges and project risks of the project. Geotechnical Considerations must be authorized in order to select this option.

Preliminary Embedment Depth Analysis:

Based on the preliminary geotechnical design parameters, we will estimate the pile size and embedment depth for solar array piles to support a typical Nextracker Horizon racking system. We will select the appropriate wind/snow load combination from our existing library of Nextracker loads based on review of ASCE7 and Risk Category 1 for the subject site. Preliminary Geotechnical Design Parameters must be authorized in order to select this option.

Geohazard Evaluation:

In addition to the Geotechnical Considerations noted above, we will provide a Geohazard/risk matrix summarizing the potential geotechnical and geologic hazards on-site as well as ways to mitigate them. We will also provide seismic design parameters based on the available information. Geotechnical Considerations must be authorized in order to select this option.

Range of Laboratory Values:

We will include a summary of representative laboratory test values researched from nearby historical Geotechnical projects (if available). Similar to the Preliminary Geotechnical Design Parameters described above, this is intended to aid in preliminary assessment of the various sites, alignments, and the likely challenges associated with each one. Preliminary laboratory test values (if available) will include pH, electrical resistivity, water-soluble sulfates, sulfides, and chlorides. Geotechnical Considerations must be authorized in order to select this option.

Preliminary Pavement Design Concepts:

We will provide preliminary pavement design concepts that are expected for the planned project. Geotechnical Considerations must be authorized in order to select this option.

Maps:

We will provide relevant maps based on readily available data evaluated as part of the Stage1. Specific map layers will be determined based on the other services authorized and the judgment of the engineers and environmental professionals preparing the Stage1.

Subsurface Environmental Considerations

Terracon makes use of selected historical aerial images, our extensive internal historical report datasets, regulatory database records, and external public data sources to identify the risk of potential environmental concerns in the area of the site using a predictive analytical model. The model provides an overall site risk rating based upon consideration of four primary data categories: physical setting, site and adjoining property use, regulatory database findings, and previous Terracon experience in the area. Based upon the findings, our local market environmental professionals will provide next steps for you to consider prior to moving forward with acquisition, development, or lease of the site.

Natural & Cultural Resources Review

Our regional ecologists/biologists will obtain and review U.S. Fish and Wildlife Service (USFWS) data pertaining to the site location via a variety of sources, including the USFWS Information for Planning and Consultation (IPaC) system and mapped critical habitat areas. Additionally, our regional team will review data such as the USFWS National Wetlands Inventory, U.S. Geological Survey National Hydrography Dataset, and other sources to identify potential for wetlands and waterbodies regulated by the U.S. Army Corps of Engineers.

In addition to the standard sources reviewed for other subject areas, Terracon's regional cultural resource practitioners will review datasets including the National Register of Historic Places, historic topographic maps, and other state-level public and restricted-access data to the extent it is readily available to our practitioners without additional fees or in-person requirements.

Critical Environmental Issues Analysis - Renewable Projects

We will provide a Critical Environmental Issues Analysis (CEIA), also known as Desktop Constraints Analysis (DCA), and permitting matrix for renewable energy projects. Our trained professionals will utilize standard, electronically available datasets and leverage their resourcefulness to drive impactful assessments of local, state, and federal resources and permitting requirements. These findings will help identify key areas of concern early in the project lifecycle to ensure a thorough evaluation of the site. Areas assessed include: Adjacent Land Ownership and Site Access, Land Use and Land Cover, Floodplains, Topographical Features, Wetlands and Jurisdictional Waters, Protected Species, Sensitive Habitats and Wildlife Areas, Environmental (Hazmat), Cultural Resources Review, Federal Aviation Administration Airspace Intrusion, Water Quality and Runoff Impacts, and Prime Farmland and Restrictive Layers. A summary of each issue, along with a clear path forward and suggested next steps, such as site visits, technical studies, permitting, or other necessary coordination is included with the CEIA report and matrix. This information is intended to help mitigate risk with renewable energy sites and enhance the development process.

Pivvot Deliverables

Terracon owns Pivvot, a location intelligence software that expedites and streamlines siting, routing, and potential suitability for many types of projects. Pivvot reporting can be included in Stage1, enhancing your evaluation with hundreds of data layers to help identify and visualize potential areas of concern.

Impact Report:

We will provide an Impact Report generated by Pivvot's Siting or Aware application. The application utilizes both publicly available and licensed datasets to summarize the data within the project site boundary as well as within a buffered area, if desired. The buffered area will be a default value determined by Terracon unless site-specific information is provided at the time of authorization. The reporting package includes two components: a Summary Report and a Detailed Report, both provided as Excel files. The Summary Report is a side-by-side comparison of sites within the project area and provides an overview of features that impact the site. The Detailed Report is a report of all occurrences of features along the project alignment, providing insights into impacted acreages and other feature-specific attributes.

Crossing Report:

We will provide a Crossing Report generated by Pivvot's Aware or Route application. The application utilizes both publicly available and licensed datasets to summarize the data along the project alignment as well as within a buffered area, if desired. The buffered area will be a default value determined by Terracon unless project-specific information is provided at the time of authorization. The reporting package includes two components: a Summary Report and a Detailed Report, both provided as Excel files. The Summary Report is a side-by-side comparison of the sites within the project area and provides an overview of features that impact the site. The Detailed Report is a report of all occurrences of features within the project area, providing insights into impacted acreages and other feature-specific attributes.

Data Deliverables:

We will provide data deliverables for the project generated using Pivvot's Siting or Aware application. These applications utilize both publicly available and licensed datasets to create these deliverables, which include the following:

- **Google Earth (KMZ) file:** This deliverable includes the project boundary and, if calculated, individual constraints and the Potential Usable Area. It is a file format that can be opened and viewed in Google Earth, providing a visual representation of the project area along with the specific constraints associated with the site.
- **File Geodatabase (.gdb):** This deliverable is in GIS file format and contains Pivvot data for a site. It provides a collection of spatial data relevant to the project, including detailed information on individual constraints, which can be utilized in various GIS software applications for further analysis and mapping purposes.

Federal Permitting Punch List:

We will provide a Federal Permitting Punch List report for the project using Pivvot's Siting, Aware, or Route application. This report provides a list of common federal permits typically required prior to development by utilizing publicly available and licensed datasets, to determine if they may be triggered. Additionally, the report provides specific information about the feature (e.g., wetlands) that triggered a permit, including the subtype (e.g., riparian, ditch, etc.), name, area or length, and count of each occurrence. The included permits are not an exhaustive list, and there may be additional state or local permits that could be required for site development.

Site Contact List:

We will provide a Site Contact List using Pivvot's Siting application. This list is provided via an Excel file and is a report of ownership information relating to the tax map parcels in the project area. In addition to the ownership information, each tax map parcel is associated with a screenshot of the aerial view of the owner's parcel.

Constraint Report:

We will provide a Constraint Report for the project area generated by Pivvot's Siting or Aware application. The application utilizes both publicly available and licensed datasets to summarize selected data within the project site boundary as well as within a buffered area, if desired. The datasets included in the report as well as the buffered area will be determined by Terracon unless project-specific information is provided at the time of authorization. This report offers an overview of the selected constraints that affect the project area. It provides preliminary information on geotechnical and/or environmental conditions at the site.

Potential Usable Area Analysis:

We will provide the project site's potential usable area, as calculated by Pivvot's Siting application. The application utilizes both publicly available and licensed datasets to assess the usable and constrained areas within the project site boundary. A summary of this calculation will be included with the Stage1; additionally, we will provide a Google Earth file including the site boundary, potential usable area, constrained area, and areas of each constraint for the project. Standard constraint setbacks will be utilized in the calculation, unless project-specific constraint setbacks are provided at the time of authorization. If changes to the constraints are requested after completion of the Stage1, the potential usable area can be recalculated for an additional fee.

Terracon STAGE1

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