



City of Tacoma

Questions and Answers

Inspection of Lattice Steel Tower and Steel Pole Transmission Structures RFQ Specification No. PT23-0207F

All interested parties had the opportunity to submit questions in writing by email to Sara Bird, Senior Buyer by date questions were due. The answers to the questions received are provided below and posted to the City's website at www.TacomaPurchasing.org. Navigate to [Current Contracting Opportunities / Services Solicitations](#), and then click *Questions and Answers* for this Specification. This information IS NOT considered an addendum. Respondents should consider this information when submitting their proposals.

Question 1: Would you be able to elaborate on TP's definition of "mapping"? Are you looking for 3D models of your structures to be used for analysis? Is the "mapping" a supplemental product to the overall analysis/assessment of the structure?

Answer 1: Tacoma Power does not anticipate needing detailed 3D models currently. If requested, it would be in PLS/Pole or PLS/Tower format.

Question 2: Based on TP's definition of "mapping" and assuming this is a service provided by the winning contractor, does Tacoma Power have a preference as to how the mapping imagery is collected? (i.e., drone, helicopter, terrestrial, etc.)

Answer 2: No preference for mapping imagery at this time, if provided.

Question 3: To clarify, TP is looking for the winning contractor(s) to perform the data collection *and* analysis which complies with TP's reporting requirements?

Answer 3: We are not requesting analysis as part of this task and we are open to discussing the exact format of the data recording and presentation. Tacoma may perform the analysis or a contractor/consultant may perform the analysis, that will be dependent upon many factors. A discussion of your analytical capabilities would be welcome.

Question 4: Is TP requiring that the winning contractor(s) have the ability to perform partial excavation of a STR foundation for this current RFQ? In other words, would TP consider a proposal that excludes any excavation provided that the contractor can achieve the same analysis results without any excavation?

Answer 4: Yes, we would consider this. Tacoma Power expects the possibility of light excavation to remove debris or landscaping material that obstructs the view of tower footings for the overall inspection. Other excavation as needed for grounding connections and other assessments is possible. We do not anticipate any significant excavation and no excavation to exceed 4 feet in depth.



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Question 5: Will an electrical contractor be eligible to bid on the project PT23-0207F if they are not currently a prequalified contractor for Tacoma Power but, is in the process of registering as one?

Answer 5: This work is intended to be performed by an engineering firm and not an electrical contractor.

Question 6: Tolerance for measuring Member Thickness is listed as 1/32 inch (1mm). Obtaining that level of precision with an inspection from ground level would be a challenge even for the best of existing technologies for drone imagery and LiDAR, or terrestrial LiDAR. Please confirm that the listed tolerances are strictly required.

Answer 6: Tacoma Power does not anticipate needing measurements of this tolerance currently. If more detailed measurements are requested please describe how these could be obtained in the submittal materials.

Question 7: What is the Steel Lattice Transmission Towers to Steel Pole ratio that is to be expected within the scope of the inspection?

Answer 7: Tacoma Power has approximated a 50/50 ratio of steel towers to steel poles on known structure types. Approximately 80 structures are unknown. We anticipate the initial focus may be primarily on lattice towers due to their age.

Question 8: What are the required properties to designate a leg or bracing member as damaged?

- a. Member identified in a sketch.
- b. Type of damage or amount of distortion of said member.

Answer 8: Tacoma Power is seeking advice from an industry expert on best practices for identifying damaged members and damage thresholds.

Question 9: What would the coordination protocol be for a TPU Crew member to obtain measurements of steel members obscured from ground observation such as internal support diaphragms and upper bridge members.

Answer 9: Initially, our expectation is that TPU crew support for climbing tasks will be minimal. If crew support is needed for further evaluation or identification of obstructed tower parts, Line department supervisors(s) will coordinate/schedule crews to meet on site.

Question 10: Is there a specific template for the overall structure sketches of Lattice Steel Tower and Steel Pole Transmission Structures that would be required and could an example be provided.

Answer 10: We do not have a template currently.



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Question 11: Some of the requested measurements cannot normally be obtained from ground level (e.g., thickness of elevated pole segments, connection welding sizes, etc.). What is the proposed procedure for measurements that cannot be obtained per the listed guidelines.

Answer 11: Tacoma Power does not anticipate needing detailed measurements of elevated members at this time. Tacoma Power is interested in obtaining this information in the future and would like to know how this information could be obtained, if requested, with the support of our crews. No proposed procedures exist currently.

Question 12: Please describe the general connection types and wire sizes of steel structure grounding systems on City of Tacoma's Transmission lines. Will requirements of the inspection include collecting grounding performance measurements and/or execution of field repairs necessary?

Answer 12: Connection types and wire sizes will vary. Grounding performance and field repairs may be necessary, please describe what can be provided.

Question 13: Please provide the type(s) of cathodic protection systems present on City of Tacoma's steel Transmission structures (Impressed Current or Galvanic systems) and the extent of required field evaluation (visual performance evaluation or in-depth troubleshooting).

Answer 13: Tacoma Power has Galvanic Systems. We expect visual evaluation to be completed. Voltage measurements at test points may be necessary.

Question 14: Regarding either or both type of cathodic protection system present on system, can the City of Tacoma share specifics of those systems (i.e.- Anode types and sizes, placement drawings, locations, current maintenance schedule, and target protection criteria).

Answer 14: Yes. If we collectively determine that a high/detailed level of cathodic review be part of the data collection, detailed information on those systems can be provided.

Question 15: Will repairs be required for structure cathodic protection systems found to be inadequate for effective protection?

Answer 15: No, please inform TPU of problems

Question 16: Will the City of Tacoma allow the use of sUAS to capture supporting data (LiDAR/RGB) for the Maintenance and Condition Assessment?

Answer 16: Yes – Tacoma Power will allow if we need these services



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Question 17: Does the City of Tacoma have any special requirements to utilize sUAS to inspect their assets.

Answer 17: No. Tacoma Power expects all local, state, and federal rules to be followed.

Question 18: Is the use of UAS or drones acceptable to conduction the inspection activities?

Answer 18: Yes – if practical and cost-effective to do so.

Question 19: Regarding the foundation assessment of the structures, are hands-on methods such as excavating necessary, or will a detailed imagery assessment be sufficient?

Answer 19: Tacoma Power expects some hands-on methods to be necessary to expose parts that need to be inspected. Partial excavations not to exceed 4 feet in depth are anticipated to be needed on a small portion of the structures.

Question 20: Does steel structure need to be drawn/sketched and dimensioned by the contractor?

Answer 20: We do not expect to need this service at this time. Tower height should be confirmed. Tacoma Power has detailed drawings on many structures. Some structures may not have existing drawings, this is a service we may request if we identify a specific need.

Question 21: Is the contractor required to provide a full inventory of the entire make up of each structure (ex. Bolts, nuts, steel members, etc.)?

Answer 21: We do not expect to need this service at this time. Tacoma Power has detailed drawings on many structures. Some structures may not have existing drawings, this is a service we may request if we identify a specific need.

Question 22: Will TPU be accepting alternate proposals?

Answer 22: Yes. Tacoma Power would like to hear from industry professionals on best practices, industry standards/norms, and any other services we have not outlined that would contribute to an accurate inspection and assessment of our infrastructure.

Question 23: For the cost, would Tacoma Power want a breakdown of what services could be offered/completed within that budget, or would they want the approximate cost (likely to be much more) to complete the full scope?

- a. Since the scope was a bit vague and open-ended in some areas, assigning an estimate would require a lot of assumptions and a bit more information.



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Answer 23: Tacoma Power would like a breakdown of what services could be offered/completed within our budget. The approximate cost to complete full scope would be useful information for future plans of our program. Any cost estimating information provided would be useful.

Question 24: **The cost associated with mapping a tower type can greatly vary, aside from the inspection. Does Tacoma Power have an idea of how many lattice tower types are in their service territory that would encompass this scope?**

Answer 24: Estimate of between 4 to 6 tower types, but this is unconfirmed

Question 25: **How many different tower types does Tacoma Power have?**

Answer 25: Estimate of between 4 to 6 tower types, but this is unconfirmed

Question 26: **Does Tacoma Power know if they have any tower types that do not have designs and fabrication drawings?**

Answer 26: Yes - Preliminary record search shows 250+ structures without drawings. Further search of our archived records may turn up more drawings.

Question 27: **Does Tacoma Power have existing drawings available for any of their lattice or tubular steel assets?**

Answer 27: Yes. Preliminary search shows approximately 250 towers with drawings.

Question 28: **Would LiDAR models be available for reference?**

Answer 28: Lidar models are available. Tacoma Power has some tower and steel pole models.

Question 29: **After the “boots-on-the-ground” approach and Tacoma Power crews take over the inspection in the air, would they be finalizing the deliverables, or would they require additional support from our team (field support as well as data management)?**

Answer 29: Yes. Field support and data management are both possible needs.

Question 30: **Are unmanned aerial vehicle (UAV) inspections acceptable?**

Answer 30: Yes. We expect some UAV use for certain tasks

Question 31: **What is the process for approval and qualifications for using UAV for inspection?**

Answer 31: Tacoma Power does not have approval or qualification process for UAV use. Tacoma Power expects all local, state, and federal rules to be followed.



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Question 32: Are there any restrictions on country of origin for UAV?

Answer 32: Not at this time

Question 33: Does Tacoma Power have standardized procedures for UAV photo capture and documentation of transmission/distribution structures?

Answer 33: There is no standardized procedure at this time.

Question 34: What types of anomalies/defects is Tacoma Power inspecting for?

Answer 34: See Appendix A of RFQ, Section 1.02 of the Technical Specifications

Question 35: Does Tacoma Power aircraft services group have standard operating procedures defined for use of UAV for inspection?

Answer 35: Tacoma Power does not have an aircraft services group, or defined procedures. Tacoma Power expects all local, state, and federal rules to be followed.

Question 36: What level of detail is expected for the initial evaluation of the Maintenance and Condition Assessment prior to the Tacoma Power crews performing the climbing inspection work?

Answer 36: Prior to TPU personnel climbing a tower to gain additional information, we expect the general assessment be completed based on data that can be acquired from ground level methods. We anticipate further defining what that criteria is as we work through the process with the provider. Tacoma Power is seeking a general assessment of our towers to identify structures that need maintenance or replacement. We expect to mobilize crews after problem locations are identified, if needed, or if inspection from the ground is insufficient to assess condition.

Question 37: It appears that this proposal is strictly for qualifications. Will pricing be required as part of this RFQ?

Answer 37: Pricing information can be submitted but is not part of the evaluation grading process for this RFQ. Tacoma Power would welcome cost estimating information to be included in the submittal, but it will not be used for evaluation purposes.

Question 38: Should suggested redlines to the standard T's & C's be submitted with the proposal?

Answer 38: Yes, please submit all suggested redlines with the proposal.