

Survey Gaps Checklist

Common issues that delay infrastructure projects

Use this checklist to identify **survey-related gaps before they become** redesigns, utility conflicts, permitting delays, construction issues, or additional field visits.

8

Risk areas
reviewed

60

Verification
checkpoints

9

Readiness score
items

7+

Minimum score
to stay clear

How to use this checklist

Work through each of the eight areas with your design and survey teams before fieldwork begins. Check every box you can confirm. Anything left unchecked is a gap worth resolving now — while it is still a question, and not yet a change order.

Before you begin

Each area below pairs a set of verification checkpoints with the specific risk that surfaces when they are skipped. Unchecked boxes are not failures — they are the conversations to have before the survey scope is finalized.

01



Existing Conditions Data

7 CHECKS

- ☐ The existing conditions survey is current.
- ☐ The site has been field-verified recently.
- ☐ Recent construction, repairs, erosion, flooding, vegetation changes, or utility work have been considered.
- ☐ Record drawings, GIS files, or old surveys have not been used as the only source of information.
- ☐ Visible site improvements are documented.
- ☐ Access points, driveways, fences, walls, pavements, structures, and surface features are shown.
- ☐ Areas outside the immediate project limits have been reviewed for possible design impact.



RISK IF MISSED

Outdated or incomplete field data can lead to redesign, delays, and costly surprises during construction.

02



Horizontal and Vertical Control

7 CHECKS

- ☐ The horizontal datum and coordinate system are clearly identified.
- ☐ The vertical datum is clearly identified.
- ☐ Benchmarks and control points are documented and identified as set or found.
- ☐ Control points have been verified in the field.
- ☐ Survey control is consistent with the design team's project files.
- ☐ Elevations are suitable for drainage, roadway, coastal, utility, or site design.
- ☐ No assumed datum or local control network.



RISK IF MISSED

Inconsistent control can affect elevations, alignments, surfaces, drainage models, profiles, and construction layout.



- ☐ Visible utility features are located and shown.
- ☐ Detectable underground utilities have been designated and mapped where needed.
- ☐ Overhead utilities are shown when relevant to the project.
- ☐ Utility poles, valves, meters, manholes, cleanouts, boxes, vaults, and drainage structures are documented.
- ☐ Utility record information is separated from field-located data.
- ☐ The level of confidence in utility information is clearly understood.
- ☐ Potential utility conflicts have been identified early.
- ☐ Additional utility investigation or test holes have been considered where needed.

**RISK IF MISSED**

Unknown utilities can cause redesign, change orders, construction delays, safety risks, and field conflicts.



- ☐ Property lines are shown when relevant to the project.
- ☐ Right-of-way limits are identified.
- ☐ Easements affecting the project area are shown or noted.
- ☐ Boundary information is based on field evidence and record research.
- ☐ Affected properties have been identified.
- ☐ Deeds, title documents, plats, or easement documents have been reviewed when needed.
- ☐ Proposed improvements are within available property rights, easements, or right-of-way.
- ☐ Additional boundary analysis has been identified before final design.

**RISK IF MISSED**

Unclear property rights can delay permitting, acquisition, design, and construction.



- ☐ The topographic survey is detailed enough for the design purpose.
- ☐ Breaklines and grade changes are shown.
- ☐ Pavement edges, curbs, sidewalks, walls, stairs, ramps, and structures are documented.
- ☐ Drainage features are located.
- ☐ Pipes, culverts, inverts, channels, swales, outfalls, and related drainage information are included where needed.
- ☐ Cross sections or profiles are included when required.
- ☐ Surface data is suitable for grading, drainage, roadway, utility, or site design.
- ☐ The survey limits are large enough to support the design.

**RISK IF MISSED**

Missing topographic detail can affect surfaces, grading, drainage, profiles, quantities, and constructability.



- ☐ Shoreline or waterway limits are documented when relevant.
- ☐ Bathymetric data is included when underwater conditions affect the project.
- ☐ Channels, rivers, reservoirs, outfalls, culverts, bridges, or coastal features are surveyed when needed.
- ☐ Water levels, tidal conditions, or relevant field conditions are documented.
- ☐ Topographic and bathymetric data are integrated when required.
- ☐ Cross sections, profiles, and surfaces are prepared for design use.

**RISK IF MISSED**

Incomplete water-related data can affect drainage, flood control, coastal design, permitting, and infrastructure planning.



- ☐ Required CAD standards are confirmed.
- ☐ Layers, linework, points, blocks, surfaces, and labels are organized.
- ☐ GIS-ready files are prepared when required.
- ☐ Point clouds are classified or organized for design use when applicable.
- ☐ Surfaces, contours, profiles, and cross sections are reviewed before delivery.
- ☐ File formats match the design team's workflow.
- ☐ Deliverables are reviewed for consistency before submission.
- ☐ The design team knows what is field-located, calculated, interpreted, or based on records.

**RISK IF MISSED**

Even accurate field data can delay a project if the final files are not usable by the design team.



- ☐ The survey scope is aligned with the design purpose.
- ☐ The limits of survey are clearly defined.
- ☐ Required deliverables are listed before fieldwork begins.
- ☐ Access needs have been identified.
- ☐ Safety, traffic control, environmental, or site restrictions have been considered.
- ☐ Specialized methods have been evaluated, such as drone mapping, bathymetry, SUE, or 3D LiDAR scanning.
- ☐ Fieldwork, processing, QA/QC, and delivery time have been included in the schedule.
- ☐ The design team and survey team have discussed risks before work begins.

**RISK IF MISSED**

Unclear scope and poor coordination can cause delays, extra costs, and repeated mobilizations.



Quick Readiness Score

A fast way to evaluate where your project stands right now.

- ☐ Existing conditions are current and field-verified.
- ☐ Horizontal and vertical datum are clearly documented.
- ☐ Survey control has been verified.
- ☐ Utility information is clear and reliable.
- ☐ Boundary, right-of-way, and easement issues have been reviewed.
- ☐ Topographic detail is sufficient for design.
- ☐ Drainage, coastal, or water-related data is included when needed.
- ☐ CAD, GIS, surface, or point cloud deliverables are ready for design use.
- ☐ Survey scope, schedule, access, and risks have been coordinated early.

YOUR SCORE

___ / 9

If you checked **fewer than 7 items**, your project may have survey-related gaps that could delay design, permitting, or construction. Each unchecked box points to a specific conversation worth having before fieldwork is scoped.

CLOSE THE GAPS

Need help closing the gaps?

RLTR Land Surveyors, PSC provides precise, compliant, and dependable survey-grade data for utility, roadway, corridor, drainage, coastal, site development, reconstruction, and critical infrastructure projects across Puerto Rico and the U.S. Virgin Islands.

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Topographic Surveys

As-Built Surveys

Drone Mapping

Bathymetric & Hydrographic

Subsurface Utility Location

Construction Staking

3D Laser Scanning

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