A Monthly Drone Survey Checklist for Better Construction Progress Monitoring

Why a Monthly Routine Matters

Construction sites change fast. Earthmoving, foundations, framing, and finishing all add up to a site that looks different every few weeks. A single drone flight each month gives you a consistent record of that change. But without a repeatable process, it is easy to miss something or to collect data that does not compare cleanly with previous months. A checklist helps you get the same quality every time, and it makes the results useful for tracking progress over the life of the project.

Before You Fly: Preparation and Planning

A good monthly survey starts before the drone leaves the case. Each flight date needs a plan that accounts for weather, site activity, and the specific areas that matter most that month.

Check the Weather and Light

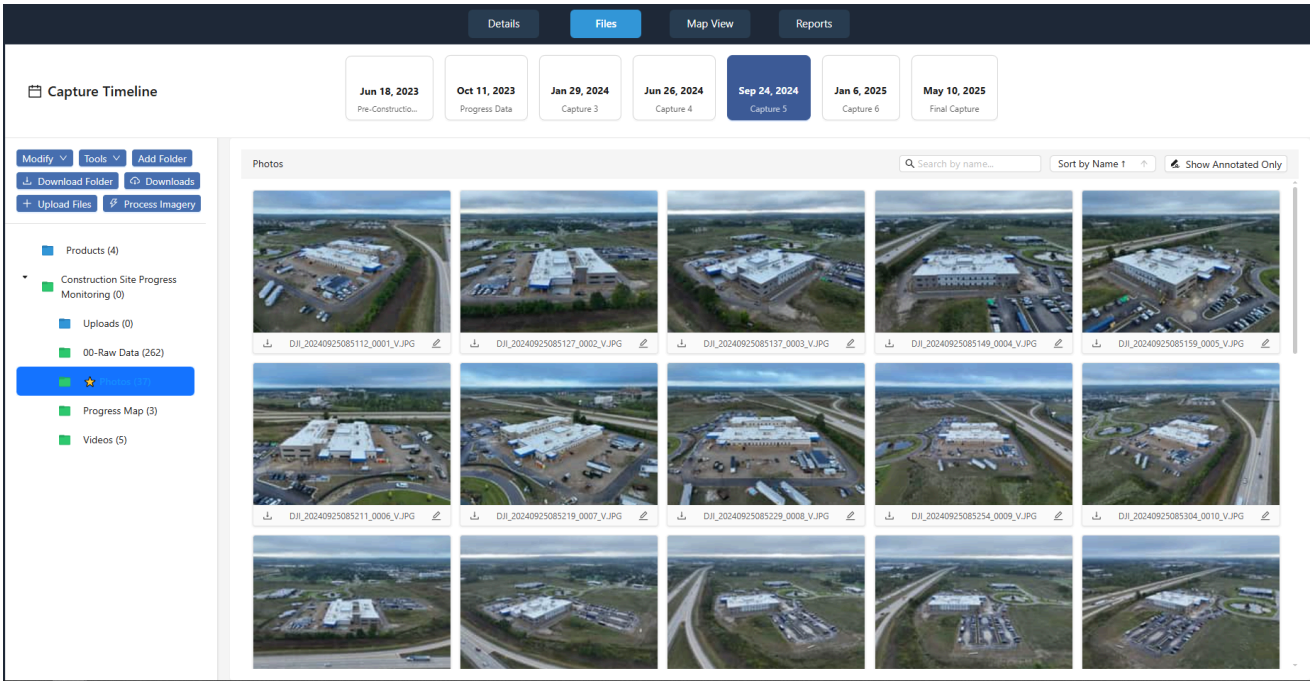
Overcast skies give even light and reduce harsh shadows, which makes your orthomosaic easier to stitch and compare. Avoid high winds that could affect flight stability or battery life. Plan for a consistent time of day each month so the sun angle stays roughly the same. This consistency helps change detection software pick up real differences rather than shadows moving between images.

Define the Survey Area and Flight Path

Reuse the same flight path and altitude each month. If you change the path, the overlap and ground-sample distance shift, and the resulting orthomosaic will not align perfectly with previous months. Save the mission file from your flight-planning app and load it each time. Mark any no-fly zones or safety restrictions on the plan so the pilot does not have to improvise on site.

Confirm the Site Capture Checklist

Walk through the site capture checklist with the project supervisor before launching. Note any new structures, stockpiles, or access restrictions that might affect the flight. Also confirm which areas the client or project manager wants extra detail on that month. A few minutes of coordination saves hours of rework later.



During the Flight: Consistent Execution

On the day, the goal is to collect clean, overlapping imagery that covers the whole site without gaps. Stick to the planned path and altitude. If the drone loses connection or the battery runs low, land safely and resume from the same point in the mission.

Monitor Image Overlap

Most mapping missions need at least 75 percent front overlap and 60 percent side overlap. Lower overlap can leave holes in the orthomosaic or create seams that confuse change detection. Check the telemetry during the flight and adjust speed or altitude if the overlap drops. If the site has tall structures, increase side overlap to keep the images covering the ground around them.

Collect Ground Control Points

If your workflow uses ground control points, place them in visible, stable locations before the flight. Photo them from above and note their coordinates. The same points month after month let you align the orthomosaics precisely. Without them, you rely only on the drone's GPS, which can drift a meter or more between flights.

After the Flight: Processing and Review

Raw images are not useful for progress tracking until they become a georeferenced orthomosaic. Processing should follow the same steps each month so the outputs are comparable.

Process the Orthomosaic

Run the images through your photogrammetry software with the same settings each time. Use the same coordinate system and output resolution. If the software offers a "compare" mode, upload the previous month's orthomosaic alongside the new one. Look for misalignments along the edges of the site, where the drone may have collected fewer images. Redo any seams that do not line up before you finalise the output.

Run Change Detection

Change detection tools compare two orthomosaics and highlight areas where the surface has changed: new piles of fill, excavated trenches, erected walls, or moved equipment. Set a minimum change threshold so minor noise (grass growth, light changes) does not flood the report. Review the highlighted areas and add site annotations where the change is significant. For example, label a new foundation pour or a completed floor slab so the project timeline is easy to read.



National Drone Services uses DataDelivery to process, organize, and deliver these monthly comparisons through client portals, so stakeholders can view the timeline without downloading large files.

Reporting and Sharing the Results

A monthly survey is only as good as the report it produces. The report should let anyone on the project team see what happened since the last flight and what is planned next.

Create a Consistent Report Template

Use the same layout for every monthly report. Include the orthomosaic, the change detection overlay, and a short list of key findings. Date each report clearly and note any issues that affected the survey quality, such as cloud cover or a restricted area. A consistent format makes it easy to flip through several months of reports and spot trends.

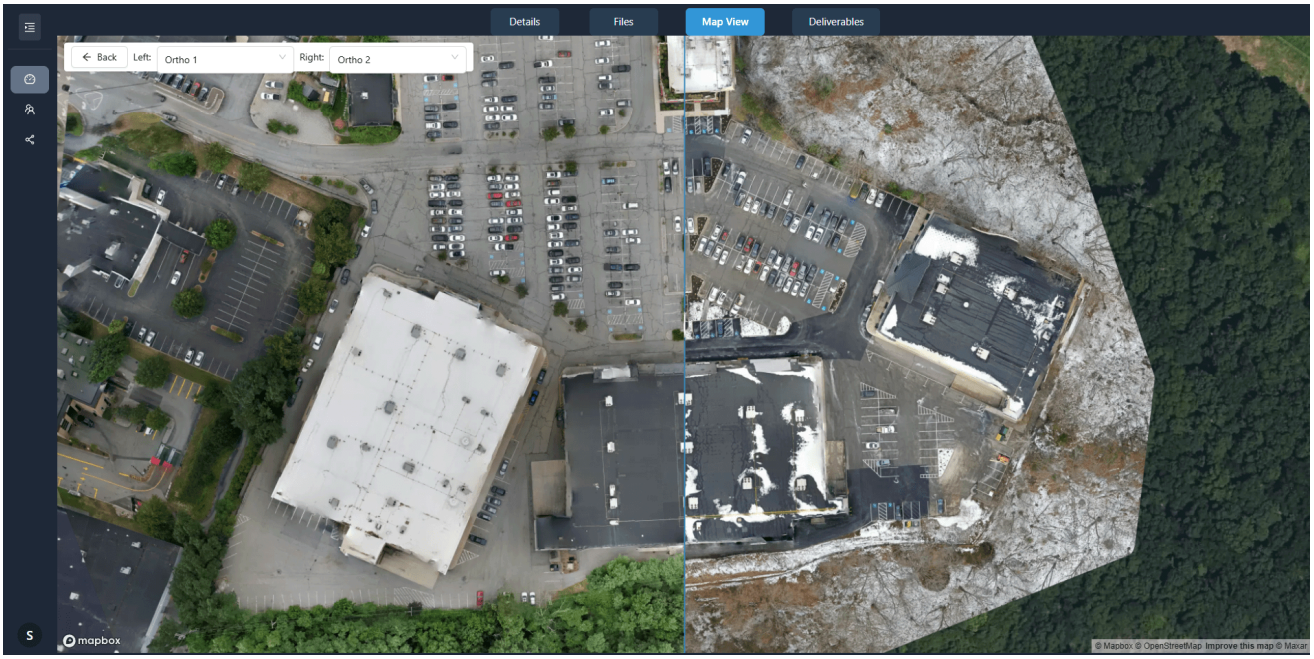
Share Through a Central Platform

Emailing large orthomosaics or PDFs creates version control problems. Instead, upload the outputs to a platform that keeps every month's data in one place. Project managers, site supervisors, and clients can log in and compare months side by side. They can also add their own site annotations to flag concerns or mark completed milestones. National Drone Services provides a delivery workflow that keeps all monthly surveys organised and accessible.

Monthly Maintenance of Your Drone and Gear

Your survey quality depends on your equipment. A monthly check prevents small problems from ruining a flight day.

Inspect the drone's propellers for nicks and cracks. Clean the camera lens with a microfiber cloth before every flight. Check that the gimbal moves freely and that the battery holds full charge. Update the flight-control firmware if a new version has been released, but test it on a practice flight before using it on a live survey. A few minutes of maintenance each month saves you from discovering a broken part while the drone is 50 meters up.



Review and Adjust the Checklist

After the first few months, review the checklist itself. Did any step feel unnecessary? Was there a recurring issue that the checklist did not catch? Adjust the items based on what you actually need. The goal is a living document that gets shorter and more efficient as you learn what matters for your site and your team. A good checklist for drone progress tracking is not a static list; it is a tool that improves with use.

By following a repeatable monthly routine, you build a reliable record of the project timeline. Each flight adds a layer of data that can be compared, annotated, and shared. The process becomes second nature, and the reports become a trusted source of truth for everyone involved in the construction project.