



THE GIS PRO'S PLAYBOOK

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# 11 Pitfalls to Avoid in Aerial Imagery Acquisition

When it comes to acquiring aerial imagery for your GIS projects, making informed decisions is crucial to ensure you get the most value for your investment. However, many professionals fall into common traps that can lead to suboptimal results, wasted resources, and missed opportunities.

Here, we'll explore eleven pitfalls to avoid when purchasing aerial imagery, so you can confidently navigate the process and make the best choices for your organization.

**Let's get started.**



## PURCHASING PITFALL

#1

### FAILING TO MANAGE “DATA FRESHNESS” EXPECTATIONS

Sometimes, the pressure to deliver a “cost-effective” solution may lead you to consider satellite imagery services. However, it’s crucial to be transparent about the limitations of this choice. Your team’s decision-making will be entirely dependent on the provider’s imagery capture schedule, which may not align with your project’s timeline or specific requirements. This lack of control can lead to significant setbacks and costly challenges down the line.

In a similar vein, partnering with a fixed-wing aerial imagery provider that requires a lengthy collection and processing timeline can be equally problematic, particularly in rapidly developing areas. Relying on imagery that’s even three to four months old can result in inaccurate assessments of current ground conditions, increasing the likelihood of encountering unforeseen obstacles and expenses.

*To mitigate these risks and avoid potential finger-pointing or blame, communicate the limitations of using outdated imagery clearly to management from the outset. Be upfront about the potential consequences it can have on the project’s success. By setting realistic expectations and advocating for the most suitable imagery solution, you can help your organization make informed decisions and eliminate the risks associated with purchasing outdated information.*

## PURCHASING PITFALL

#2

### FALLING INTO THE “HIGH-RESOLUTION” SATELLITE IMAGERY TRAP

In many cases, 30-centimeter resolution, the highest available with satellite imagery, can be a sufficient and powerful tool in your GIS capabilities arsenal. However, when tasked with securing imagery to drive precise and efficient planning, operations, and compliance efforts, satellite imagery may fall short – specifically, 4–5 feet short in positional accuracy.

These discrepancies between the locations shown in images and the actual positions on the ground can be highly problematic when dealing with planning minutiae. A prime example of this is addressing the questions and concerns of potentially hundreds of landowners during pipeline route planning. If the “on the ground” accuracy of the imagery can’t be trusted past a foot or two, a ground crew will need to be dispatched to address even the smallest of issues, resulting in additional time and money spent.

*How important is positional accuracy to what your teams are looking to accomplish with imagery? Can these efforts risk a 4- to 5-foot discrepancy?*



## LEANING TOO HEAVILY ON IN-HOUSE SOLUTIONS OR OUTDATED PARTNERSHIPS

In recent years, many companies have invested in drone capabilities to capture aerial imagery for their GIS projects. While utilizing in-house drone resources can be cost-effective and provide greater control over data collection, it's essential to recognize that drones are not always the optimal solution for every situation.



Drones have limitations in terms of coverage area, flight time, and weather conditions. For large-scale projects or areas with complex terrain, relying solely on drones may result in incomplete or inconsistent data. Additionally, drones may not be equipped with the most advanced sensors or cameras, which can impact the quality and resolution of the imagery.



On that same note, some companies may have long-standing relationships with imagery providers that they have relied on for years. While these relationships can be valuable, it's crucial to periodically assess whether these providers are still the best fit for your current needs. As technology advances and new players enter the market, there may be more suitable options available that offer better quality, resolution, or pricing.

**To side-step in-house and partnership pitfalls, consider the following:**

### **Evaluate your project requirements**

**objectively:** Assess the scale, complexity, and specific needs of each project to determine whether drones or your current imagery provider can meet those requirements effectively.

### **Stay informed about industry advancements:**

Keep up with the latest developments in aerial imagery technology, including new sensors, platforms, and processing techniques, to ensure you're making informed decisions.

### **Conduct regular vendor assessments:**

Periodically review and compare different imagery providers to ensure you're getting the best value, quality, and service for your investment.

**Consider a hybrid approach:** In some cases, having multiple imagery partners offering specific areas of expertise is the answer. For example, a subscription satellite service could be a good option for frequently flown metro areas where ground accuracy is not a top requirement. For projects requiring precise ground accuracy, an on-demand fixed-wing flyer may be the answer--especially if you need specialized maps built on top of the imagery (planimetrics, slope models, etc.).

By being open to exploring alternative solutions and carefully evaluating your options, you can ensure that you're utilizing the most appropriate imagery resources for each project, ultimately leading to better outcomes and more efficient use of your GIS budget.



## PURCHASING PITFALL

#4

### FAILING TO DEMAND VECTOR DATA ALIGNMENT

When ground crews gather detailed information about an area of interest, such as roads, fences, and road crossings, it is crucial to accurately match this vector data with the imagery in your GIS systems and programs. If you are considering satellite imagery, note that it often fails to align precisely with the preliminary data collected on the ground. Mismatches between satellite imagery and ground-level data can lead to incorrect assumptions about the feasibility of certain routes, the presence of obstacles, and the overall viability of the project. These errors can result in delays, increased costs, and potential conflicts with stakeholders.

## PURCHASING PITFALL

#5

### GETTING STUCK WITH INCONSISTENT QUALITY

When purchasing imagery from multiple sources or imagery that's been captured at different times, there is a risk of inconsistent quality. Define your quality requirements upfront to help ensure your imagery is consistent in terms of **resolution**, **color balance**, and **overall quality**. This helps avoid issues during analysis and interpretation.

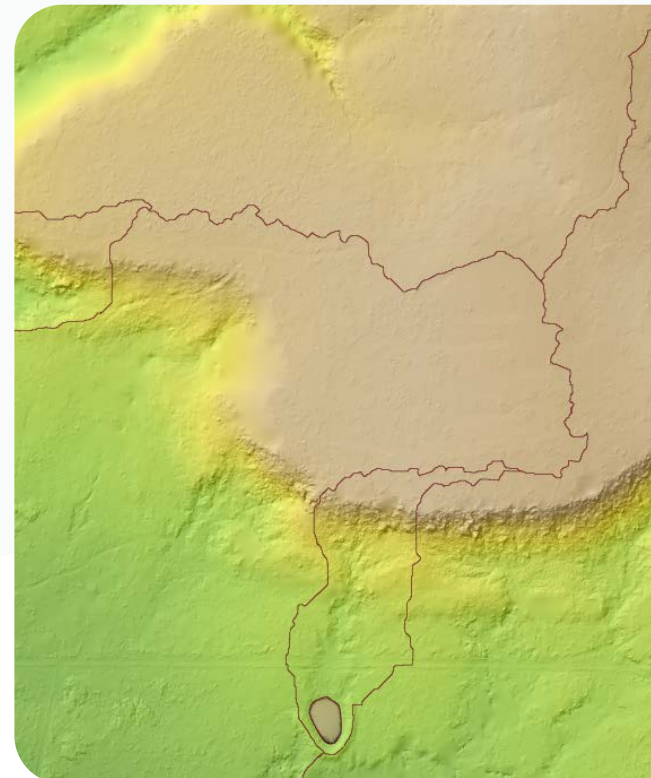
In addition to the above, **seam alignment** is another crucial aspect to consider. Seam alignment refers to accurate matching and smoothing of edges where adjacent aerial images join to create a seamless mosaic. Proper seam alignment ensures that the resulting mosaic is visually consistent and geometrically accurate, minimizing visible seams and creating a cohesive representation of the ground.

## PURCHASING PITFALL

#6

### BUYING TOO MUCH TECHNOLOGY FOR THE TASK AT HAND

Let's take LiDAR as an example. LiDAR is a powerful tool, no doubt, but it is also expensive and time-consuming to capture and process. So, ask yourself, is it necessary for what you are looking to accomplish? High-resolution RGB aerial imagery (10+ cm), which comes in at about a quarter of the cost of LiDAR, also facilitates the creation of accurate 3D models and digital elevation models (DEMs). If you need a comprehensive understanding of terrain, not sophisticated point clouds, RGB delivers that intelligence, quickly and easily. You also enjoy use of the underlying aerial imagery for mapping and oversight efforts--something you do not get with LiDAR.





## PURCHASING PITFALL

#7

### NOT ASKING QUESTIONS CONCERNING COMPATIBILITY

Consider the compatibility of the aerial imagery with your existing software and systems. Ensure that the imagery and data is provided in a format that is compatible with your GIS software or other tools to avoid additional processing or conversion efforts.

#### IMAGE, VECTOR, TABULAR?

Different users, such as planners, environmental scientists, or infrastructure managers, may require differing formats. By understanding their needs upfront, you can ensure that aerial imagery and data can be easily integrated into existing workflows.

## PURCHASING PITFALL

#8

### FAILING TO CONSIDER CUSTOMER SUPPORT

When purchasing aerial imagery, consider the level of customer support provided by your aerial imagery partner. Having access to knowledgeable support staff, especially on the GIS side, can be invaluable when questions or issues arise during the purchasing process or while working with the imagery and/or data.

## PURCHASING PITFALL

#9

### NEGLECTING TO READ THE FINE PRINT

Be aware of any hidden costs associated with purchasing aerial imagery, such as additional fees for processing, delivery, or usage rights. Ensure you understand the total cost and any limitations on how the imagery can be used.

## PURCHASING PITFALL

#10

### NOT CONSIDERING FUTURE NEEDS

When purchasing aerial imagery, consider not only your current project needs but also potential future requirements. Investing in higher-quality imagery and/or derivatives like elevation models or planimetric mapping upfront may save time and resources in the long run.





## FAILING TO ADVOCATING FOR IMAGERY'S VALUE AND DEMONSTRATING ITS IMPACT ON YOUR ORGANIZATION'S BOTTOM LINE

As a GIS professional, you understand the immense value that aerial imagery brings to decision-making processes. However, it's not uncommon for management teams to view imagery as merely a visual aid, failing to grasp its true potential. It's crucial to educate your management teams about the strategic importance of investing in high-quality aerial imagery, demonstrating how it can revolutionize the way your business approaches planning, monitoring, and problem-solving.

By leveraging cutting-edge aerial imagery, your organization can unlock a wealth of insights that drive innovation and success. Encourage your management teams to embrace aerial imagery as a catalyst for transformation, enabling them to make informed decisions about land use, resource allocation, and infrastructure development with unprecedented precision. Take the lead in advocating for its value and demonstrating its impact on your organization's bottom line, empowering your business to thrive in an era where data-driven decision-making is the key to success.



### LET'S GET TO WORK

## Unlock the full potential of your aerial intelligence assets.

Don't let these purchasing pitfalls hold you back from unlocking the full potential of aerial imagery in your GIS projects. Partner with Prius Intelli today and experience the difference that expertise, cutting-edge technology, and unparalleled customer support can make in your organization's success. Together, we can elevate your GIS capabilities, drive innovation, and position your organization for success in the ever-evolving landscape of geospatial technology.

**Book a call today.**  
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