- What's your style? -

What type of fieldwork can your projects be described as? Not all projects are the same. Use these boxes to categorize your projects. Knowing the type of fieldwork you will be doing can help you plan what hardware, software, data, and other equipment you will need.

Capture	Validation
•••••••	

Inspection	Awareness

Planning data capture -

Use the following prompts to identify what materials you need to prepare.

Basemap

Aerial imagery | Street map | Topographic map

Structured data capture

ID | Name | Address | Observation date | Size | Condition

Complementary data

.....

Roads | Property boundaries | Building footprints | Trees | Fences

Plan B

Generic data layers | Paper notebook | Printed maps

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Park bench condition assessment -

Use the following chart to design a database suitable for capturing condition assessments for park benches. Some field names have been added to get you started.

Design a park bench database

Field type (string, integer, list)	Field name	Choice list values (if applicable)
Easting, northing	Location	n/a
	AssetID	
	PaintCondition	
	StructuralCondition	
	InspectionDate	
	FieldworkerName	

— Understanding inspection requirements

Inspection projects provide the most opportunity for advance planning, optimizing data capture methods for speed and accuracy, and informing next activities. Use the following prompts to identify the information you need to collect, what won't change, how often you need to collect, and for what kind of subsequent activity.

What information needs to be collected at each inspection? Condition | Obstructions | Hazards | Data | Time | Inspector ID | Next actions

How often are inspections required? Daily Weekly Monthly Annually Ad hoc				
•••••	••••••			
••••••	••••••			
	continued on next page			

What information typically won't change at each inspection?				
Location Structure type Make Model Material Size ID				

What kind of activities can result from an inspection?					
Regulatory reporting Infrastructure maintenance Infrastructure replacement					

- Who is in control, command, and coordination? -

Get to know the three critical Cs by answering the following questions. The word *team* may represent different agencies, many companies, or groups of people within a single organization.

Control is a cross-team activity that guides the overall direction of the field operation. What is the objective of your field operation?

.....

continued on next page

Command

Internal to each agency or team, command describes how activities are accomplished.

In the following chart, list all the agencies and teams that are involved in your field operation, what they are responsible for, and what their internal command structure is. Who is the ultimate decision-maker in each agency or team?

Team	Area of responsibility	Command structure

Coordination

Cross-agency coordination is the most critical element of a field operation. How will the teams work together toward the common goal, and who is ultimately responsible when decisions are required?

In the following cross-agency coordination diagram, enter the teams that are involved in your field operation and list the names of their key points of contact. Who will be responsible for critical communications between teams? Which team has the final say?

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Cross-agency coordination



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Plan a trial -

Answer the following questions to help plan your trial project. Knowing the answers to these questions can help you better group activities according to the resources-human and technological-that you have.

How many sites, features, or activities can be done in a day, week, or month?

How long does an activity take?

Days | Weeks | Months | Years

Do all activities consist of the same steps?

How do the activities need to be completed?

In sequence | In parallel

Who performs the activities at a specific location?

Same person | Different specialists

If fieldwork is to be broken into geographic areas, how do you define them?

Conventional street addresses | Custom-designed polygons

Perform a risk assessment –

Calculate the risks associated with one of your projects, and be sure to add mitigating factors to lower the value.

	rtcome		ikelihood	isk	litigated outcome	litigated likelihood	litigated risk
Potential hazard	Mitigation measure	0	3	2	Σ	Σ	Σ
Extreme sunburn	Hat, sunscreen, long sleeves	2	5	10	1	2	2

- Field office requirements

In each box, circle the options that best describe your field office and add your own details. Keep this list in mind when identifying a location, purchasing equipment, and planning site setup and ongoing maintenance.

Transport	Shelter
Truck Car Boat Foot Readily accessible Limited accessibility Frequent visits possible Infrequent visits	Roof only Complete enclosure Excessive heat Fire Cold Rain Wind
]
Power	Security
Main power 12-volt power	Entire office space lockable
Solar Petrol generator	Equipment only
Continuous Intermittent	Malicious people Curious animals

Playing solitaire is work –

Besides solitaire, list games				
that make use of double-tap,				
tap and hold, and tap and				
drag actions with a stylus or				
finger:				
•••••				

- Cascaded training of fieldworkers -

Think about the people on your team or teams, and in the diagram, identify who can be your field GIS champions, your subject matter experts, and those who are somewhere in between. Also list the field GIS lead.

Training fieldwork teams

	Field GIS lead		
	Team 1		
	Field GIS champion	Mixed-experience workers	Subject matter expert
	Team 2		
	Field GIS champion	Mixed-experience workers	Subject matter expert
	Team 3		· · · · · · · · · · · · · · · · · · ·
	Field GIS champion	Mixed-experience workers	Subject matter expert
L	Team 4		
	Field GIS champion	Mixed-experience workers	Subject matter expert

Assign project tasks

Knowing how much time and resources to allocate to a project is learned from experience. Keep a record of how your estimations turned out so that you can better estimate next time.

Project 1

Project description	Office-based testing
	One record takes <u> min</u> to complete
	Complete <u>records in a day</u>
	[
Pilot testing	Actual project times
Pilot testing One record takes <u>min to</u> complete	Actual project times One record takes min to complete
Pilot testing One record takes min to complete Complete records in a day	Actual project times One record takes min to complete Completed records in a day
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Project description	Office-based testing
	One record takes <u> min</u> to complete
	Complete records in a day
	· · · · · · · · · · · · · · · · · · ·

Pilot testing	Actual project times
One record takes <u> min</u> to complete	One record takes mi complete
Complete <u>records</u> in a day	Completed <u>records</u> i a day
	••••••
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C c	One record takes <u> min</u> to complete																																												
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Choose a device -

Circle the best option in each box to help describe the characteristics of the device that best suits your project.

Device requirements

Battery / power

Most common smartphones

Device with hot swappable battery or external battery attachment

Data / memory

Most common smartphones

Device with large internal memory or SD card

Device that can be connected to computer with cable or has SD card

Screen display

Most common smartphones

Device with high resolution and good color differentiation

Device with large screen

Device with good brightness adjustment

Location measurement

Most common smartphones

Device with built-in dedicated GNSS receiver or external GNSS receiver

Choose an app

Web apps versus native apps

The following table lists some of the most common pros and cons of web and native apps. Circle the features that are important to your project to help you choose which type of app is best for you.

	Web app	Native app
Pros	Allows direct editing of	Typically designed to work
	information contained in	offline. Data can be captured
	connected databases.	and synchronized later.
	Doesn't require installing an app	Can use sensors on the
	on the device.	device (location, compass,
	Web browser version dependent	accelerometer, camera).
	but not operating system	Can use connected
	dependent.	equipment, typically
	Not installed on the device, but	Bluetooth location sensors.
	can be launched by clicking a	Can use operating system
	button on the home screen.	security features.
Cons	Must be connected to the	Requires app installation files
	internet (some caching of single	to exist and be deployed for
	responses possible).	each operating system.

continued on next page

Types of fieldwork

Think about the type of fieldwork you do, and create a list of the activities you do or functionality you use most of the time. This requirement list will point you to the web or native app that you can configure for frequent use.

Activities I do often:
Functionality I use often:
The app that does this the best for me is:

One-off projects

What about one-off projects? Projects that may be bigger than normal or have different data capture requirements? There's no need to compromise on functionality because it's out of the ordinary. Instead, it's a great opportunity to try new tools and technology.

New functionality I need to use or try out:
The app that does this the best for me is:

GNSS receiver log

Keep a log of the GNSS receivers you have used, tested, or evaluated and save for future reference.

		Co	mpati OS	ble		Comments Accuracy, battery life, project suitability					
Make	Model	ios	Android	Windows	Proprietary app required? Name						

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Memory requirement estimates -

Consider the following questions when estimating your own project memory requirements:

- How regularly can you check in, sync, or upload collected data?
- Do you have the network bandwidth to transmit the data you need to send?
- Do you need to consider doing backups in the field (USB sticks, memory cards, external hard drives)?

	Scenario
,	Assumptions
ł	How much/many?

continued on next page

Project 1

Project 2

Scenario
Assumptions
How much/many?

Rangefinder and other accessories log

Keep a log of the rangefinders and other accessories you have used, tested, or evaluated and save for future reference.

		Co	mpat OS	ible								
Make	Model	ios	Android	Windows	Proprietary app required? Name	Comments Accuracy, battery life, project suitability						
				· · · · · · · · · · · · · · · · · · ·								
			• • • • • • • • • • • • • • • • • • •									
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- Location measurement terminology -

Record additional terms that you come across that are important in your industry or projects.

Term	Description
•••••••••••••••••••••••••••••••••••••••	

– Coordinate system terminology –

Record additional terms that you come across that are important in your industry or projects.

Term	Description

Designing effective dashboards -

The best dashboards are informative and clear. Consider the following elements when designing a dashboard that communicates real-time situational awareness.

Determine your audience

Who? | Important questions | Dashboard location

Avoid information overload		
Necessary information Images or videos Too distracting?		
·····		

Provide context when needed Types of values | Target or historical | Selection-based information filters | Criteria for automatic reformatting

Make good design choices Organization Size Color	