Fast Tracking Management for GIS Census Projects

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Outlines

1. Fast tracking project management
2. Census project: Overview
3. Role of GIS in the census project
4. Census rules and constraints
5. Challenges affect project management
   - Management tips & tricks
   - Solution tips & tricks

Fast Traking Porject Management

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1. Ensure small duration projects can be finished within the shortest time possible
2. Census project:
   a. Data accuracy near 100%
   b. Live data production projects
   c. Census: decentralized data collection and centralized analysis
   d. Multiple software venders
3. Impacts on staff, scope, other projects, on quality, cost

Census Project: Overview

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Census overview

Role of GIS in the Census Projects

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GIS your census solution

- Minimum manual work,
- Accurate geographic location,
- Less error,
- Easy to reach buildings,
- Track your surveyors,
- Live data update,
- Automatic reporting,
- Less man power,
- Less need for data QA/QC

Census is all about locations & information

Census Rules and Constraints

Census as special project

1. All project phases to be managed in (4) months till production (Go-Live).
2. (29) Deployments at regional offices and one centralized data center, around (400) enumerators using handheld devices.

The project has fast paced timeline and large geographic scope

Challenges Affect Census Project Management

Management Tips & Tricks

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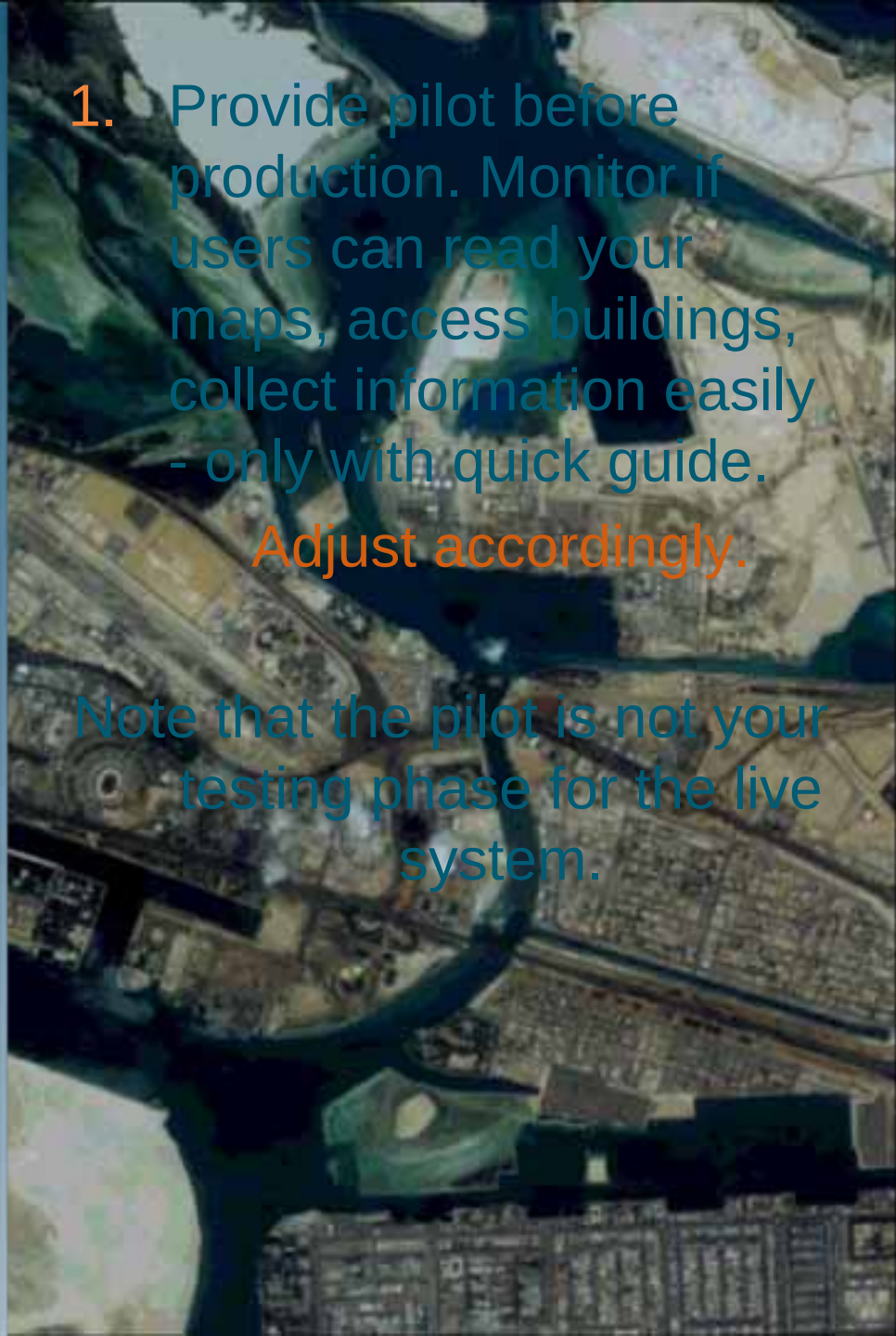
Tip and Trick #1: Planning

1. Plan your schedule carefully
2. Add additional lags into your schedule
3. Schedule all potential risks
4. Plan resources/parallel tasks
5. Resources efforts (not more than 80%)

Tip and Trick #4: Pilot

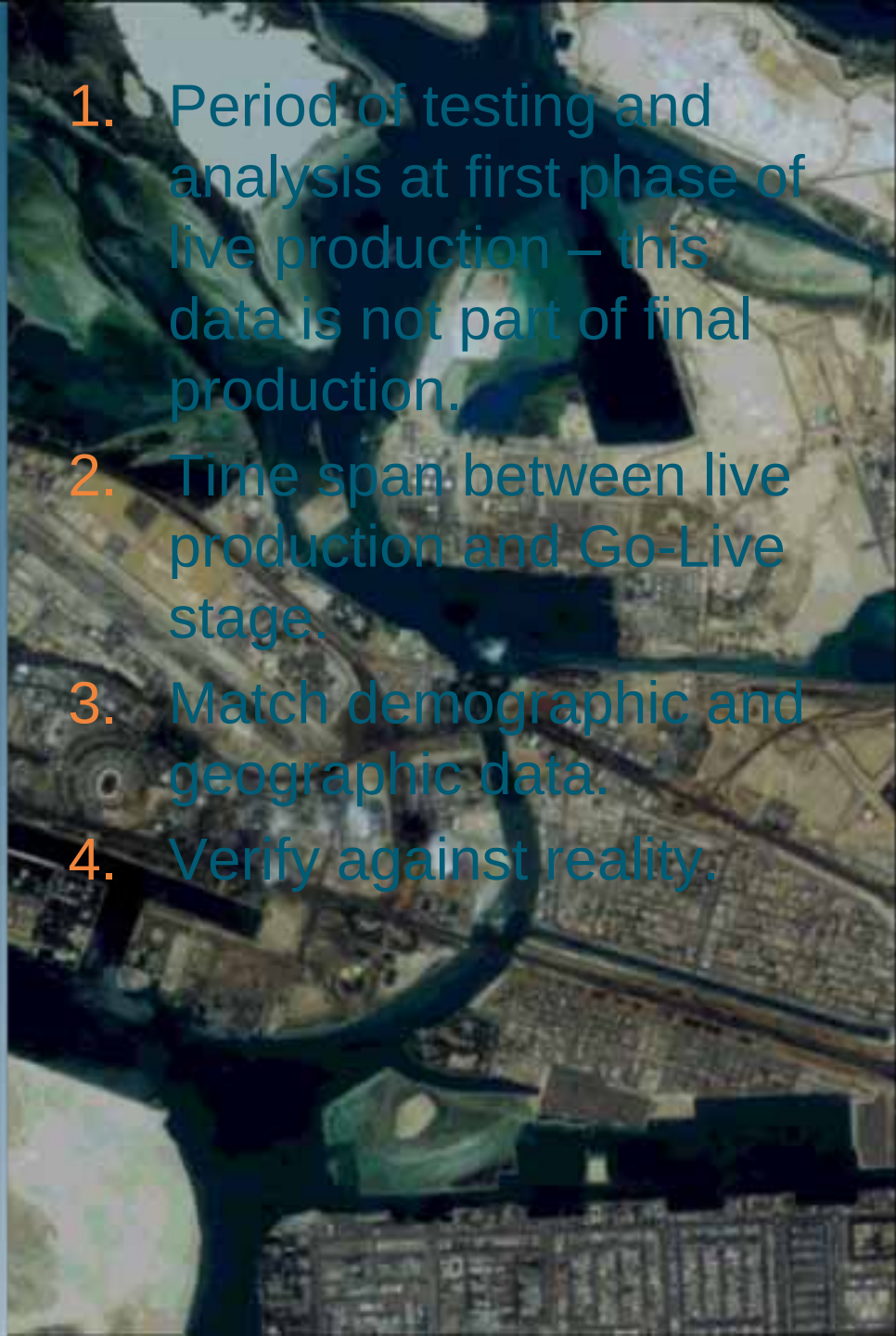


1. Provide pilot before production. Monitor if users can read your maps, access buildings, collect information easily - only with quick guide.

   Adjust accordingly.

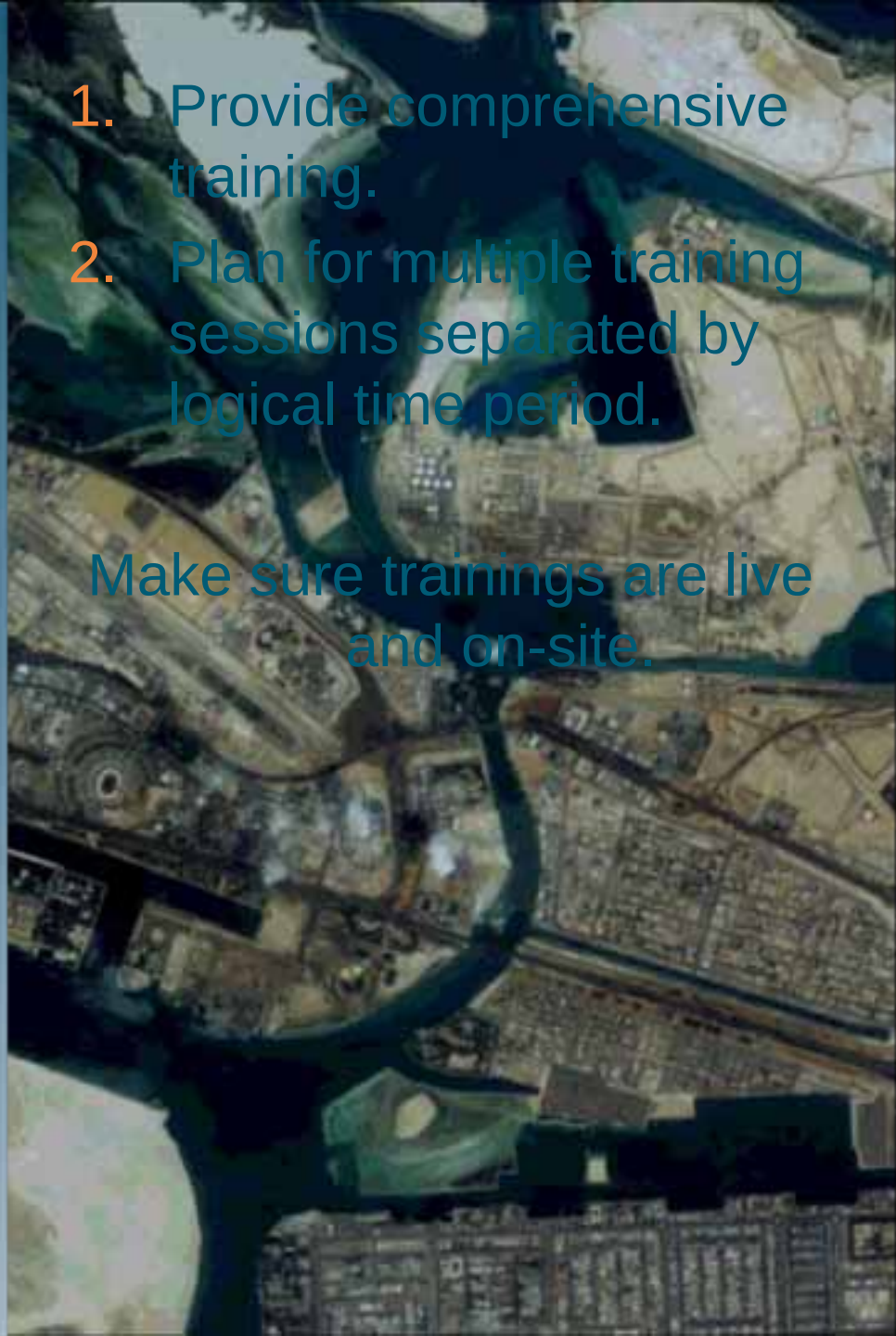
Note that the pilot is not your testing phase for the live system.

Tip and Trick #2:
Testing & Analysis



1. Period of testing and analysis at first phase of live production – this data is not part of final production.
2. Time span between live production and Go-Live stage.
3. Match demographic and geographic data.
4. Verify against reality.

Tip and Trick #3: Training



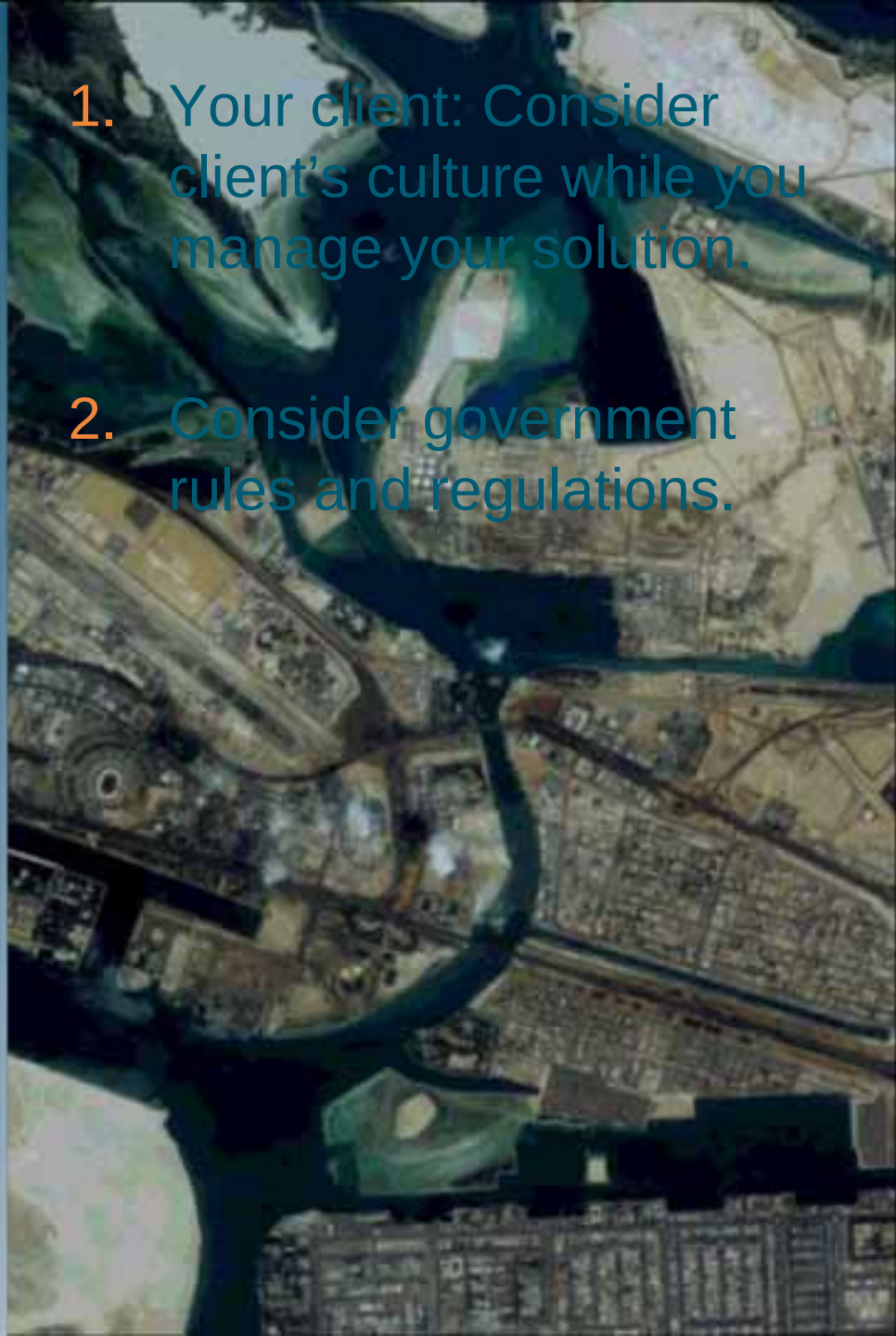
1. Provide comprehensive training.
2. Plan for multiple training sessions separated by logical time period.

Make sure trainings are live and on-site.

Tip and Trick #4:
Onsite Verification

1. Send expert technical supervisors to monitor work accuracy and progress for each team and (in each region).

Tip and Trick #5: Client Nature & Culture



1. Your client: Consider client's culture while you manage your solution.

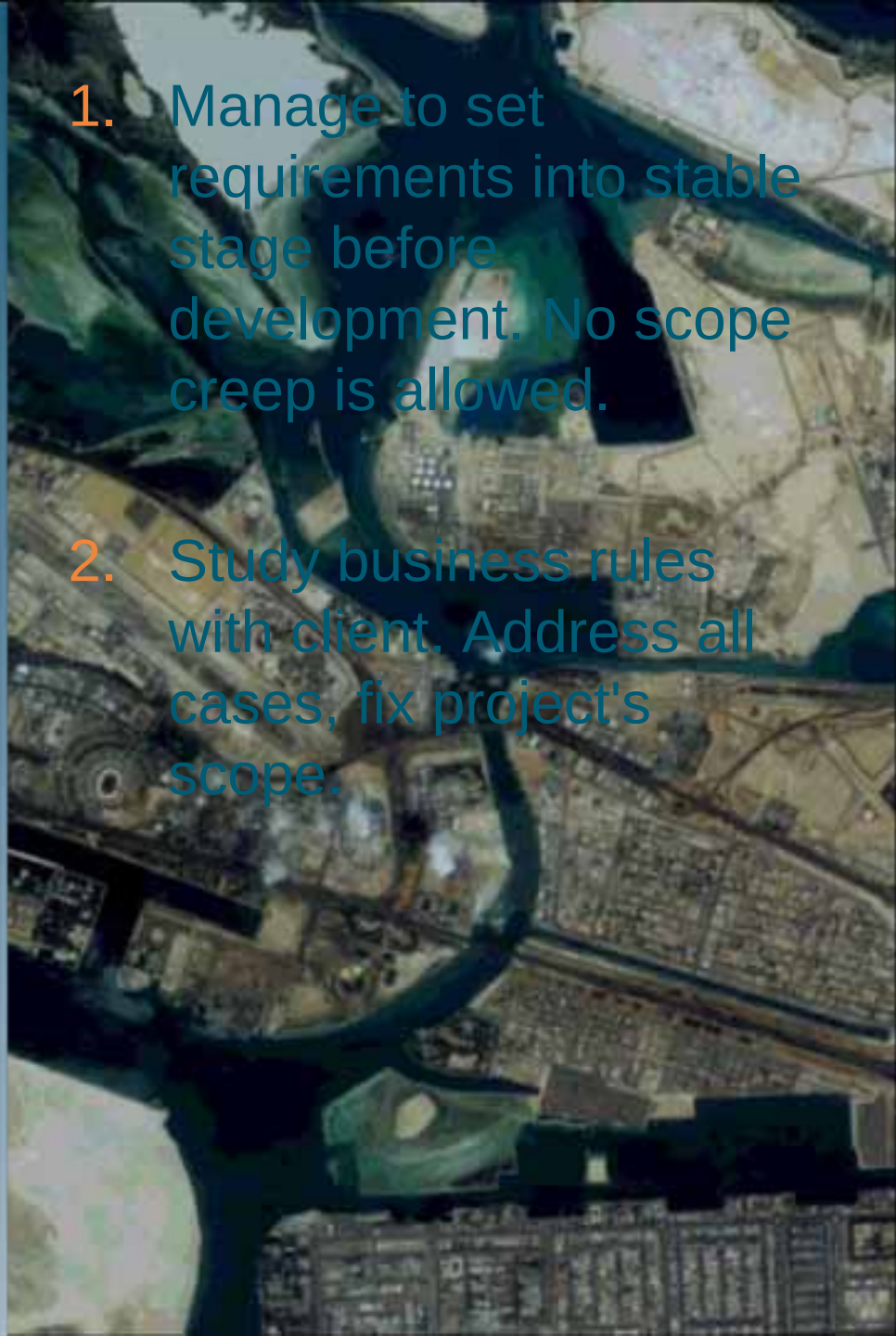
2. Consider government rules and regulations.

Tip and Trick #6:
Data synchronization

1. Plan to test data synchronization. Close monitor the process.

2. Analyze client's infrastructure and network speed - All affect synchronization process.

Tip and Trick #7: Requirements & Scope



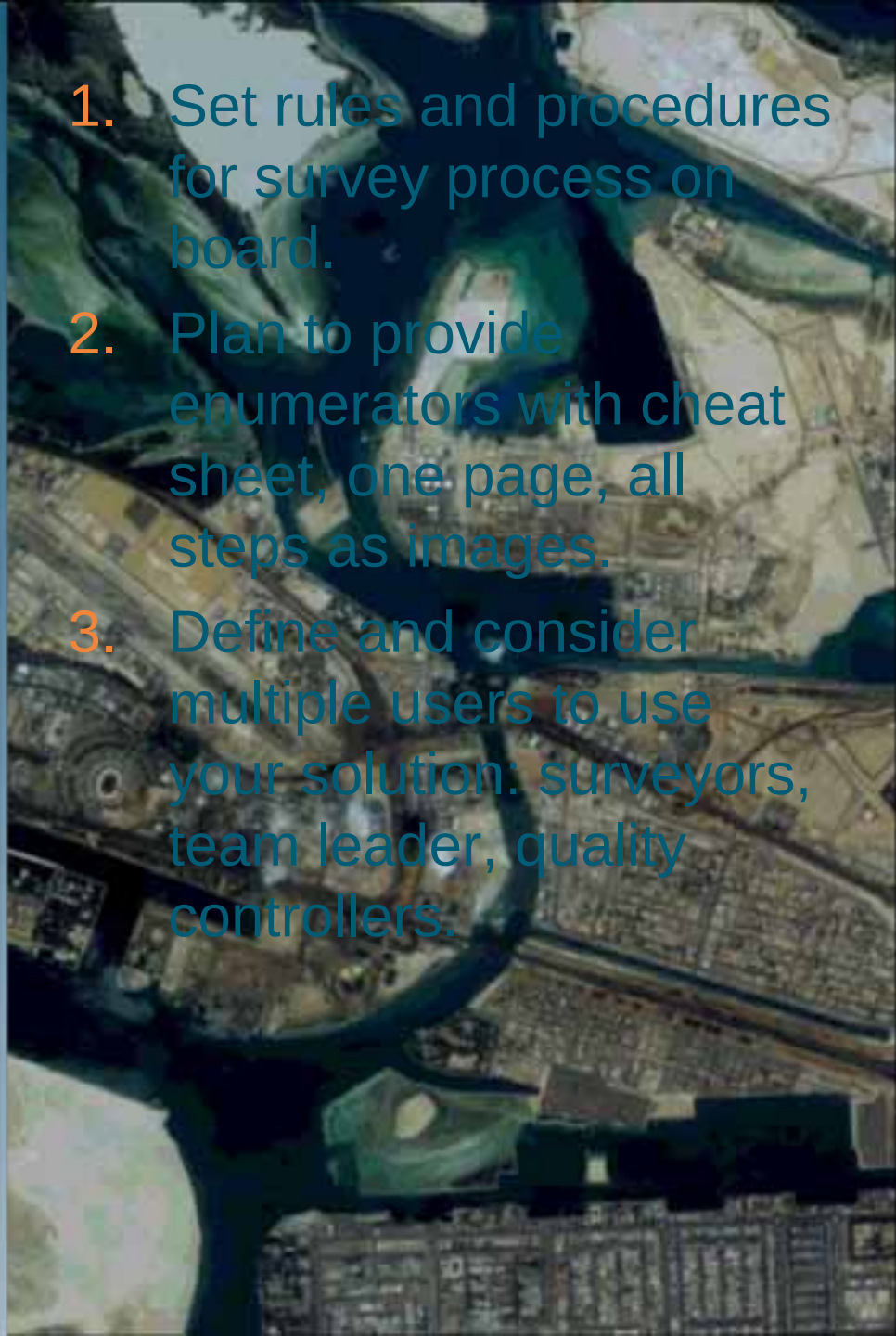
1. Manage to set requirements into stable stage before development. No scope creep is allowed.

2. Study business rules with client. Address all cases, fix project's scope.

Tip and Trick #8:
Delay

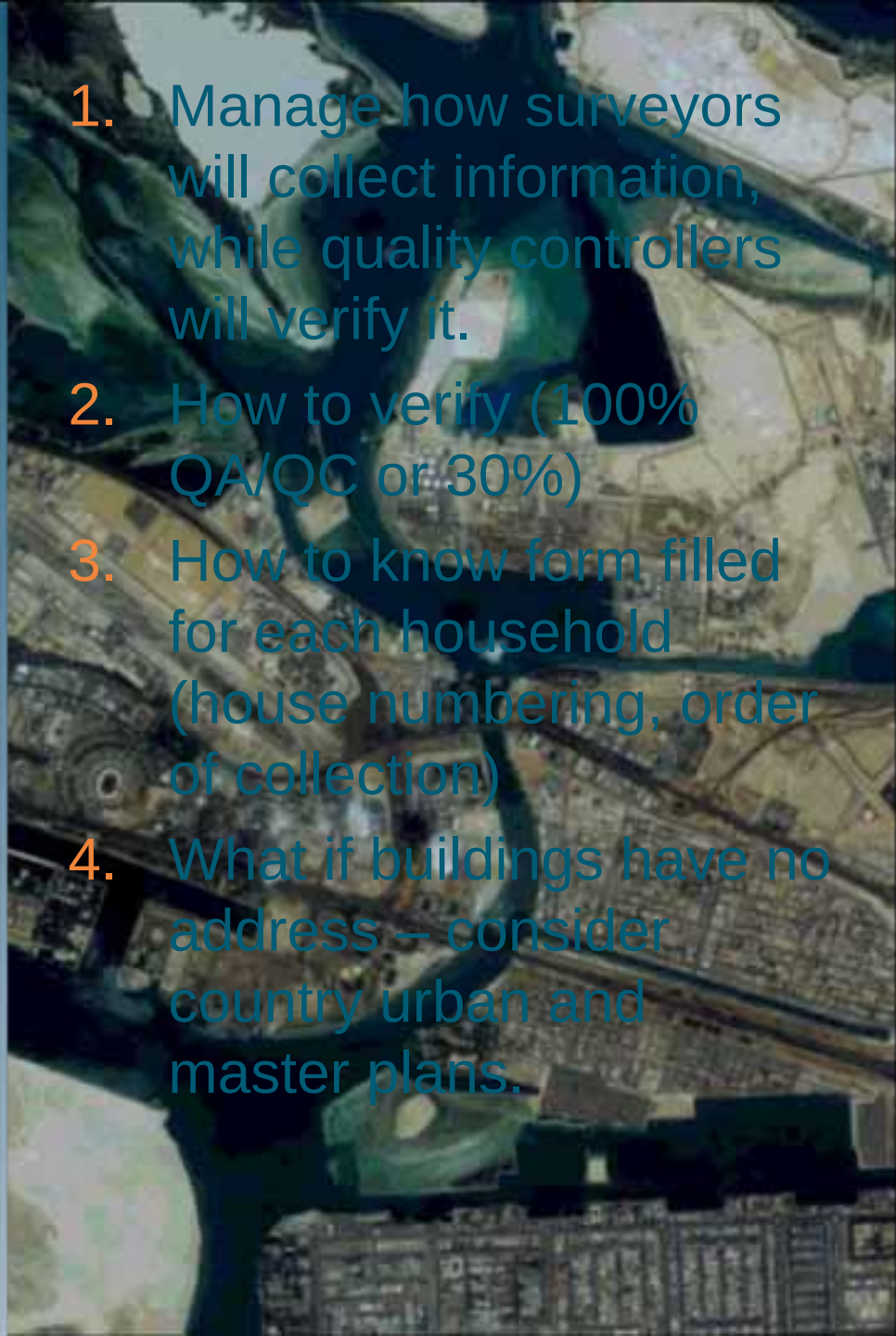
1. Highlight delay on weekly basis - if exists, mitigate with the client.

Tip and Trick #9:
Survey process



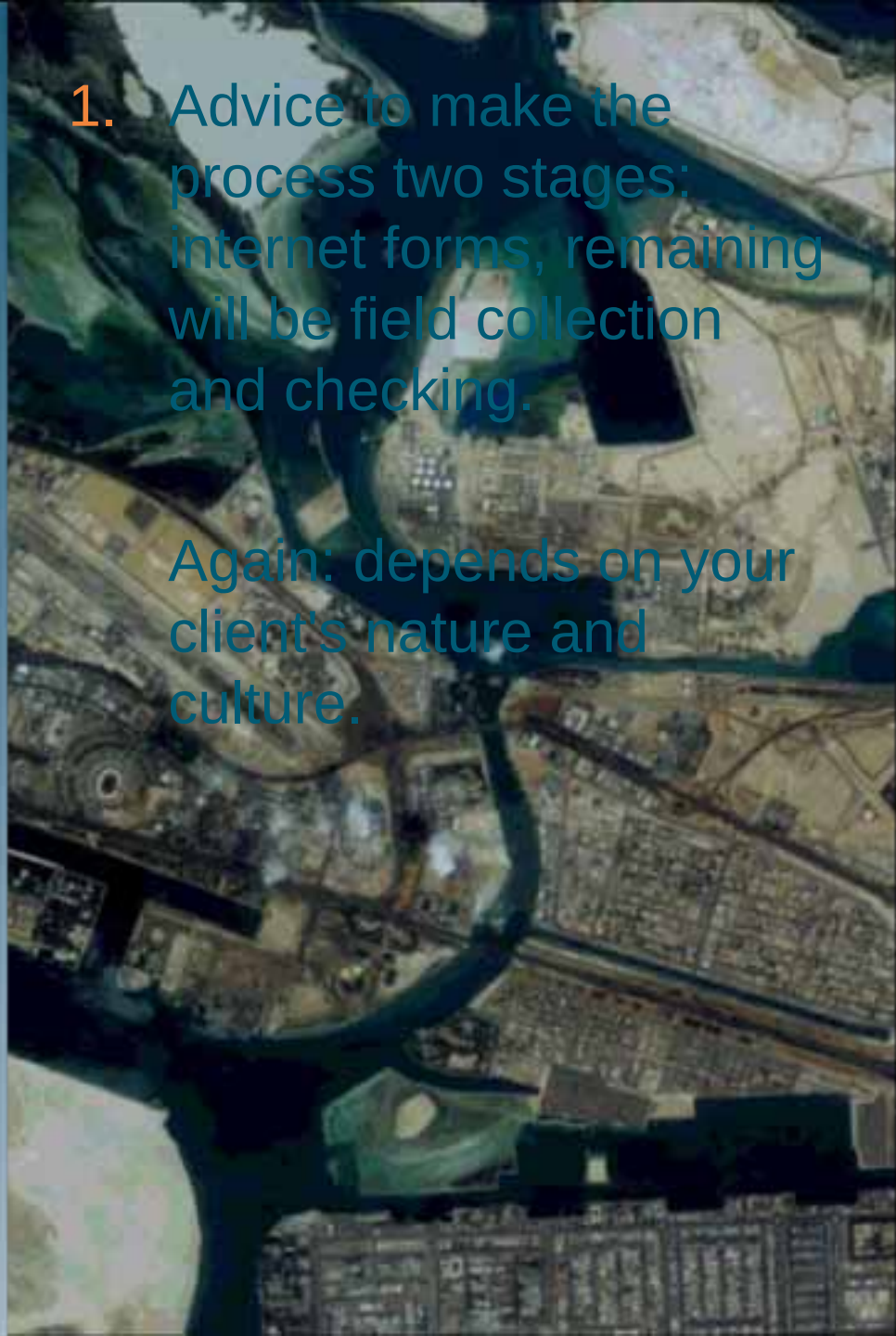
1. Set rules and procedures for survey process on board.
2. Plan to provide enumerators with cheat sheet, one page, all steps as images.
3. Define and consider multiple users to use your solution: surveyors, team leader, quality controllers.

Tip and Trick #10:
Survey process



1. Manage how surveyors will collect information, while quality controllers will verify it.
2. How to verify (100% QA/QC or 30%)
3. How to know form filled for each household (house numbering, order of collection)
4. What if buildings have no address – consider country urban and master plans.

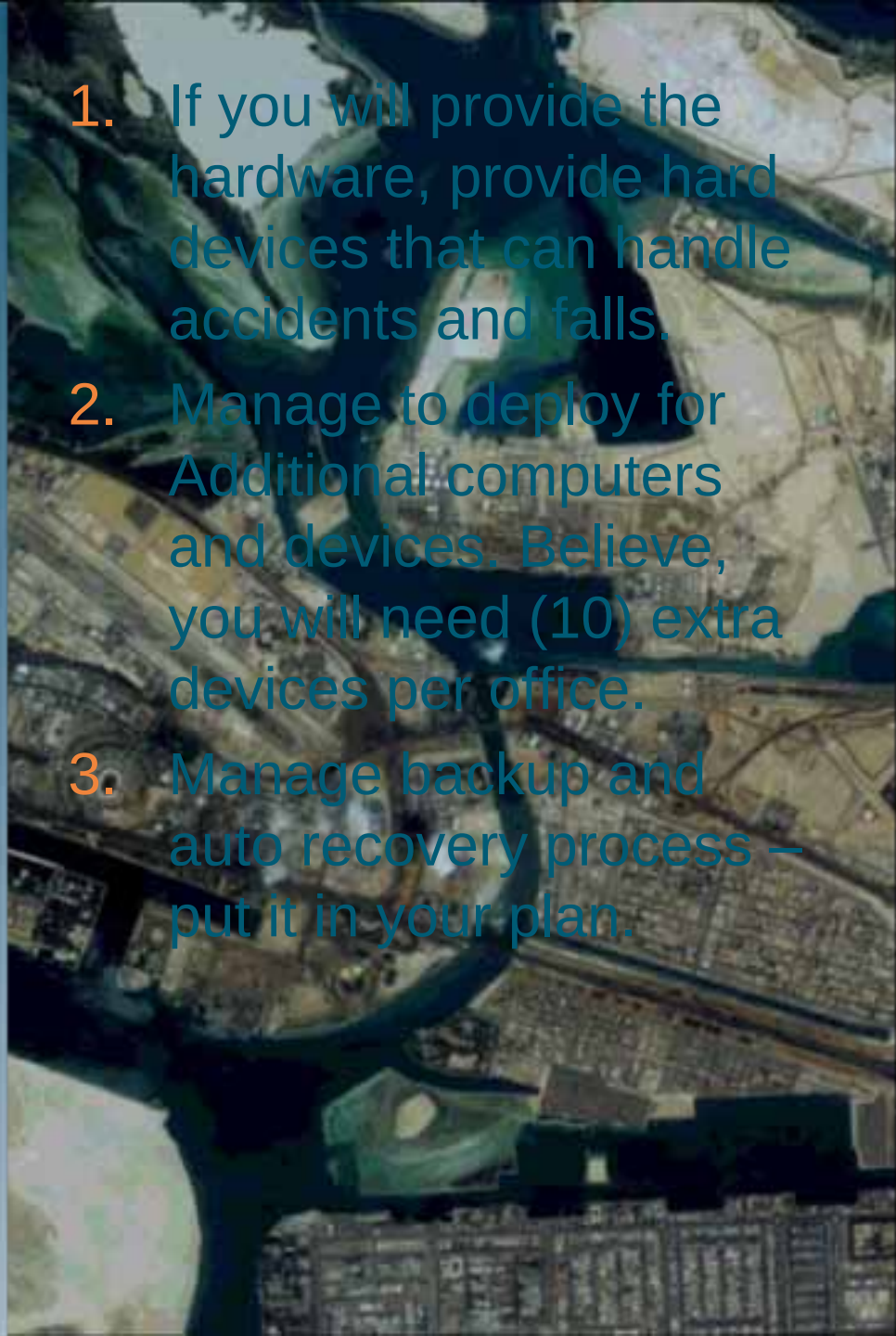
Tip and Trick #11:
Survey process



1. Advice to make the process two stages: internet forms, remaining will be field collection and checking.

   Again: depends on your client's nature and culture.

Tip and Trick #12:
Hardware & backup



1. If you will provide the hardware, provide hard devices that can handle accidents and falls.
2. Manage to deploy for Additional computers and devices. Believe, you will need (10) extra devices per office.
3. Manage backup and auto recovery process – put it in your plan.

Tip and Trick #13: Hardware/Software

1. Do the provided hardware/software work perfectly with languages such as (Arabic)?

Tip and Trick #13: Hardware/Software

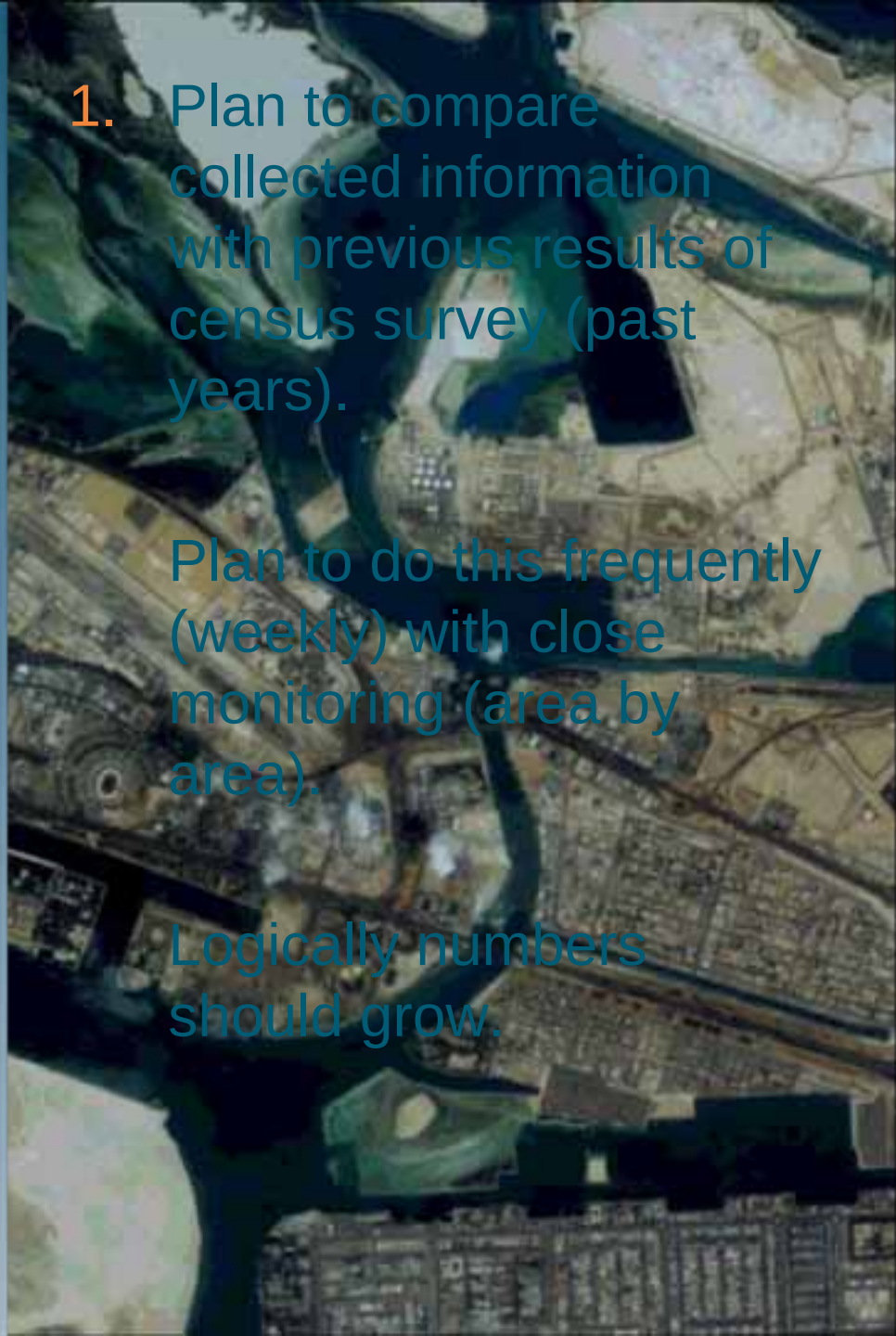
1. Plan shipment time, lag time…. Expect delay.

   Do not schedule shipment tasks on critical path.

Tip and Trick #14:
Marketing awareness

1. Make sure to advice your client to perform necessary campaign awareness before a year of surveying starts.

Tip and Trick #15:
Previous survey

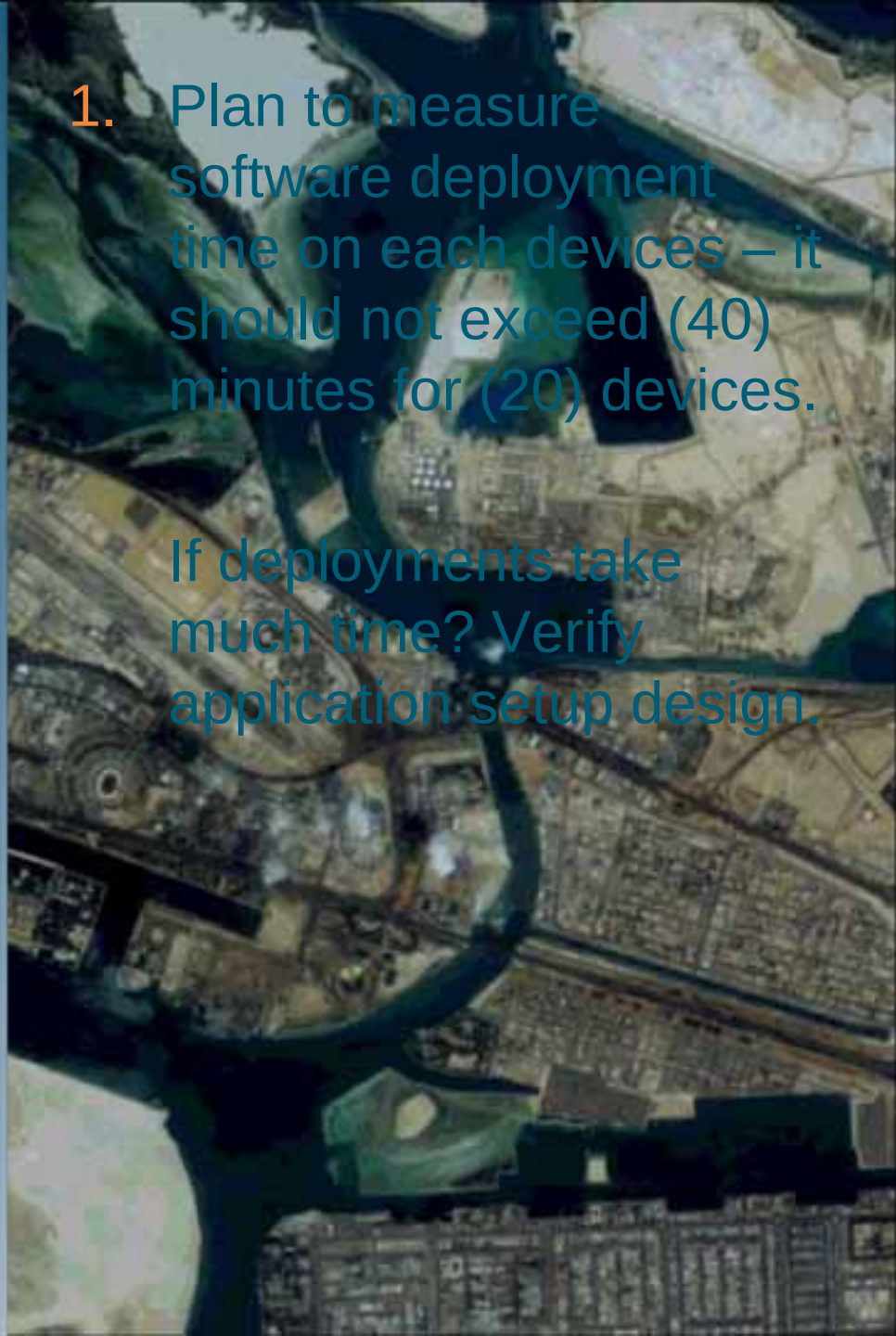


1. Plan to compare collected information with previous results of census survey (past years).

   Plan to do this frequently (weekly) with close monitoring (area by area).

   Logically numbers should grow.

Tip and Trick #16: Deployement



1. Plan to measure software deployment time on each devices – it should not exceed (40) minutes for (20) devices.

   If deployments take much time? Verify application setup design.

Challenges Affect Census Project Management

Solution Tips & Tricks

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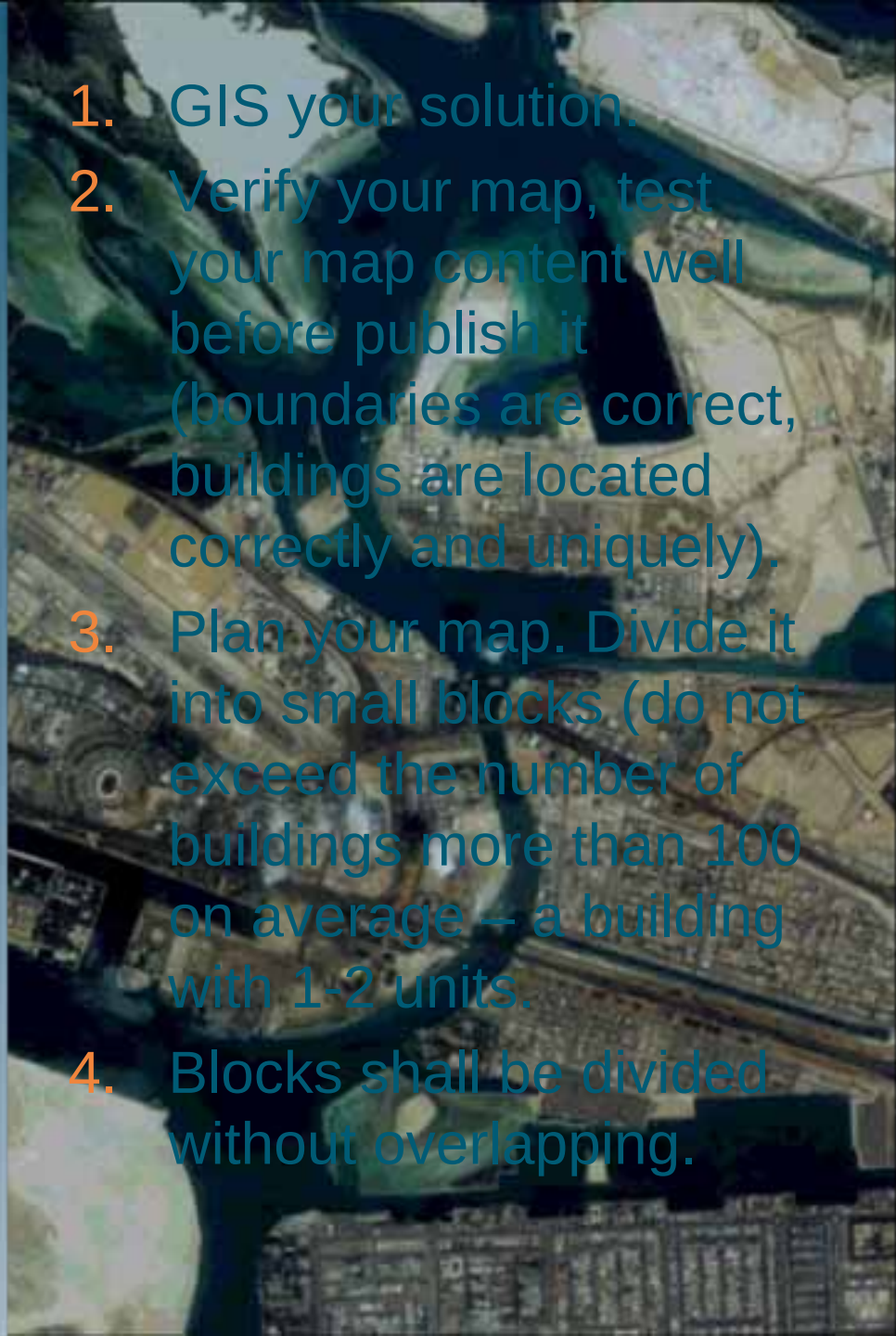
Tip and Trick #1:
GIS your solution



1. GIS your solution.
2. Verify your map, test your map content well before publish it (boundaries are correct, buildings are located correctly and uniquely).
3. Plan your map. Divide it into small blocks (do not exceed the number of buildings more than 100 on average – a building with 1-2 units.
4. Blocks shall be divided without overlapping.

Tip and Trick #2:
Job assignments

1. Each work assignment is one block.
2. Consider long distance travels while preparing work packages (set of assignments).
3. Design your solution for mutually disjoint work packages.
4. Make sure blocks are not spanned on other regional offices.

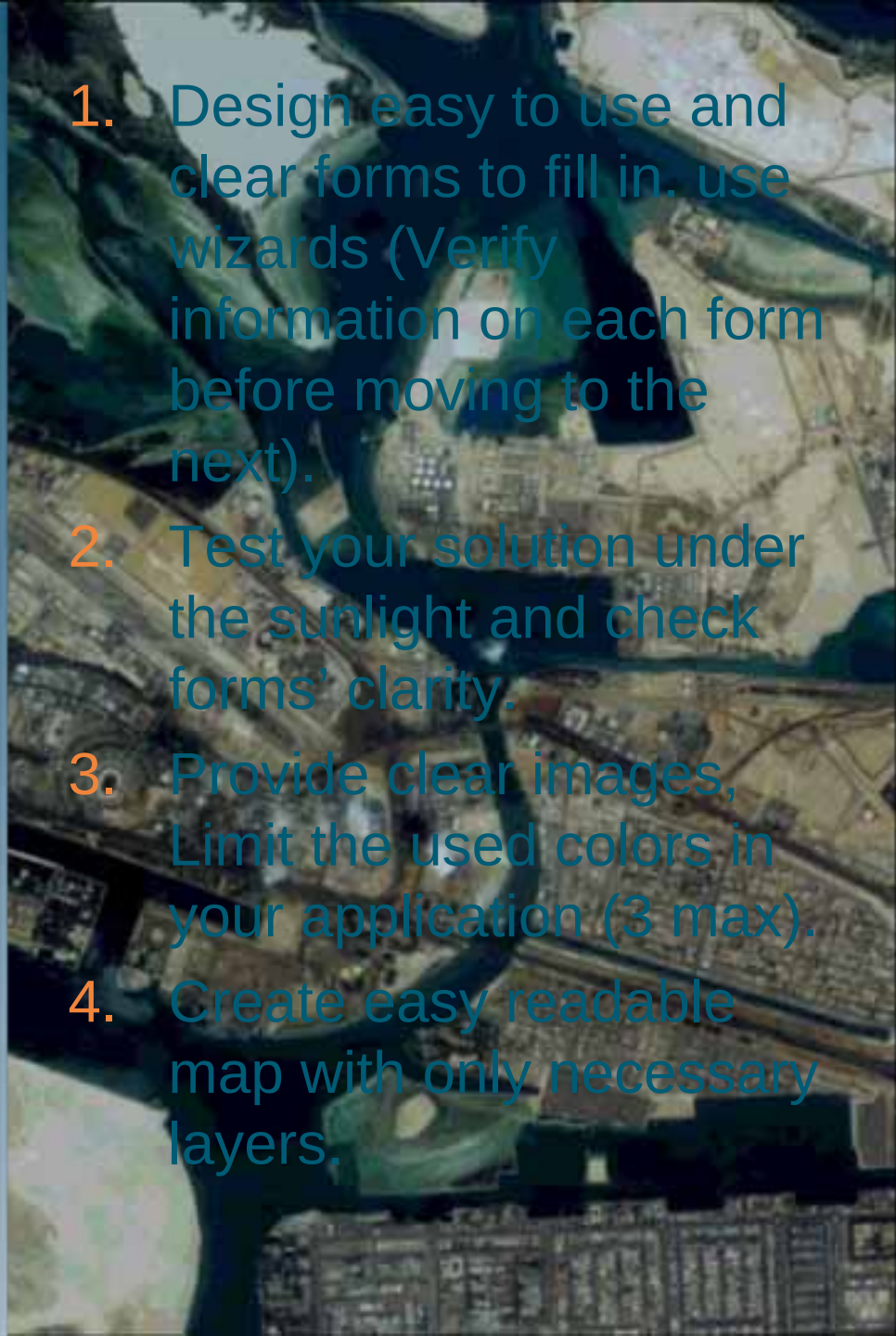
Surveyors' performance

Tip and Trick #3:
GPS to your solution

1. Provide your solution with the GPS to target buildings (show plan on map).

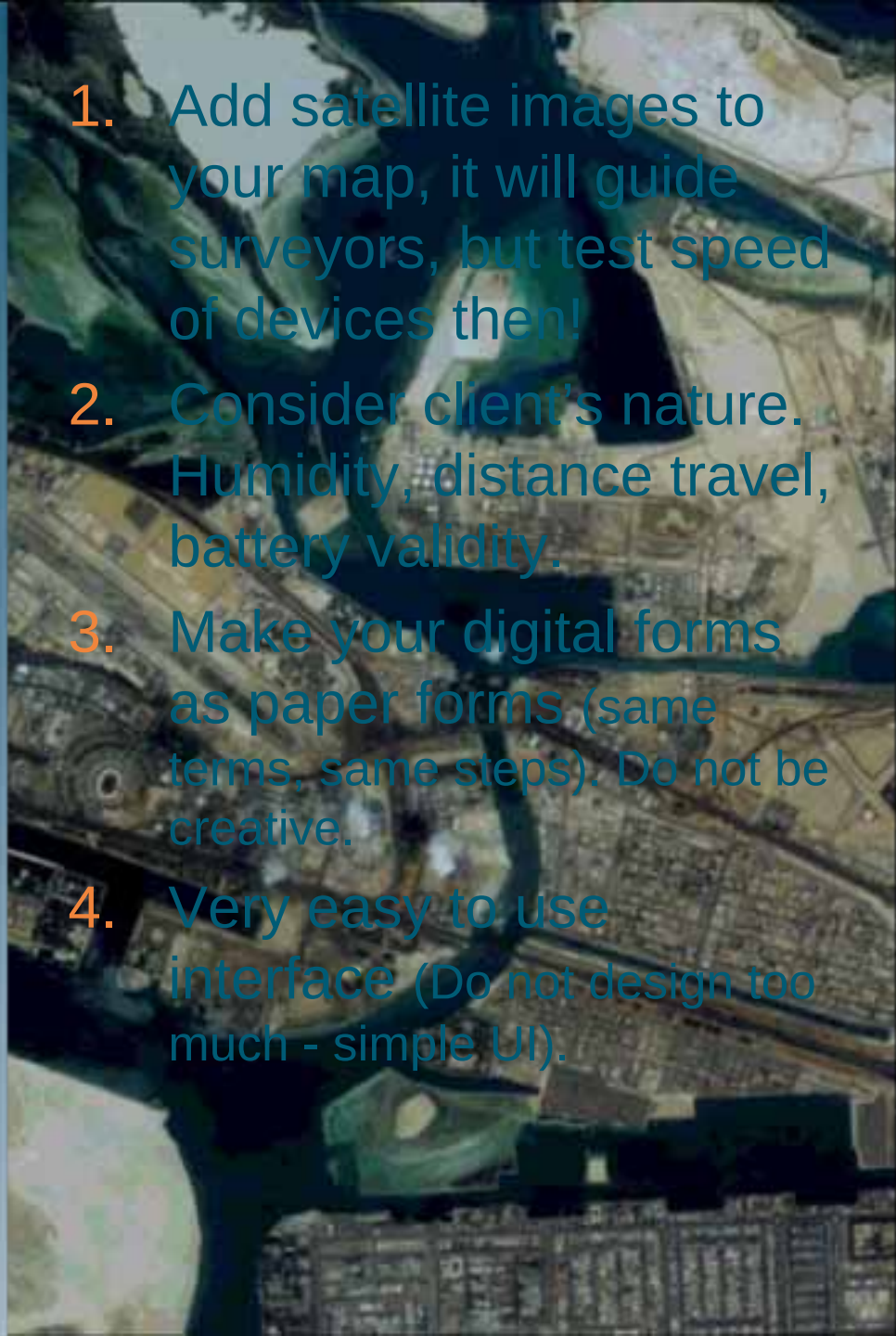
2. GPS to track enumerator's location (management to verify enumerator location while surveying).

Tip and Trick #4:
Easy & clear



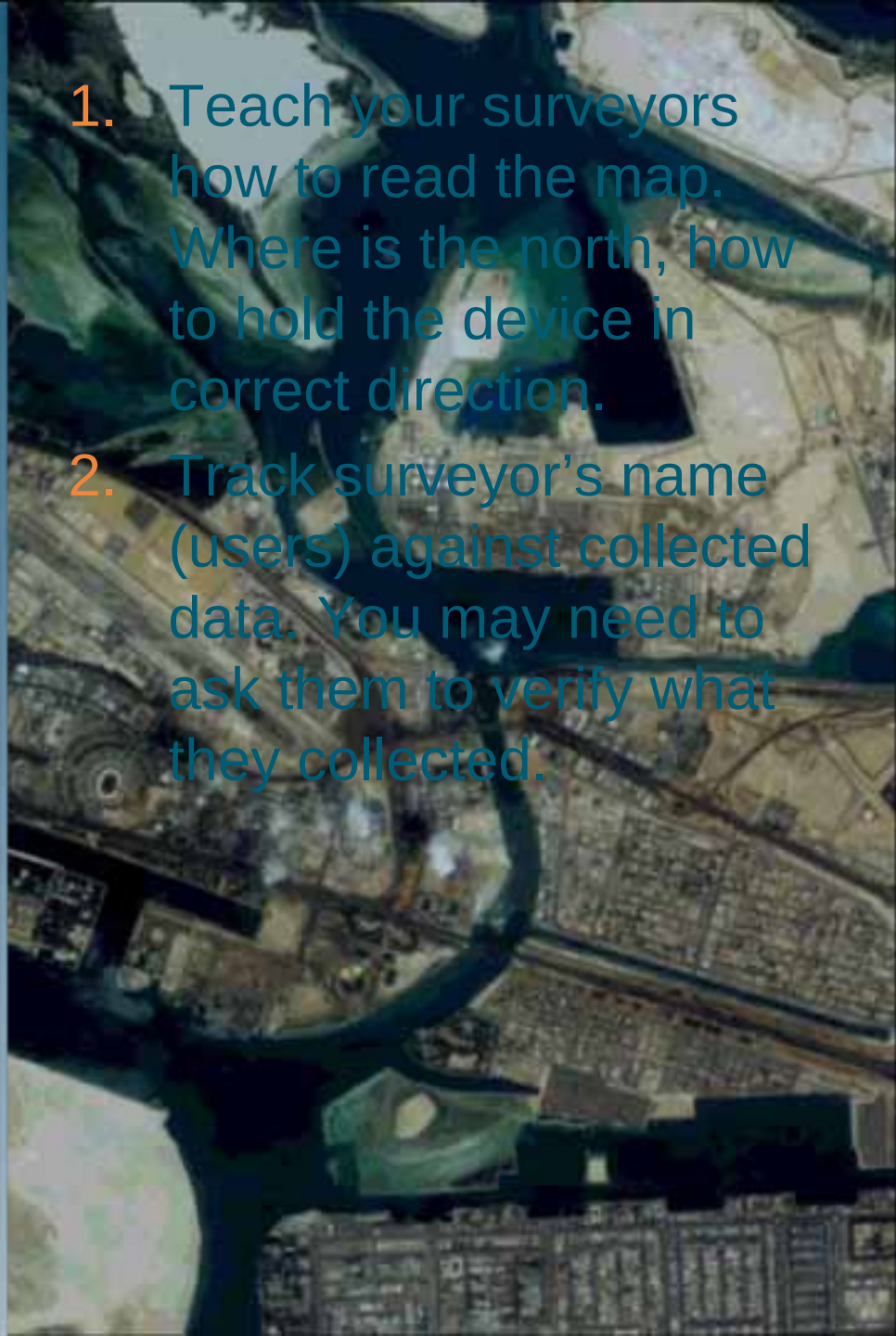
1. Design easy to use and clear forms to fill in. use wizards (Verify information on each form before moving to the next).
2. Test your solution under the sunlight and check forms' clarity.
3. Provide clear images, Limit the used colors in your application (3 max).
4. Create easy readable map with only necessary layers.

Tip and Trick #4:
Easy & clear



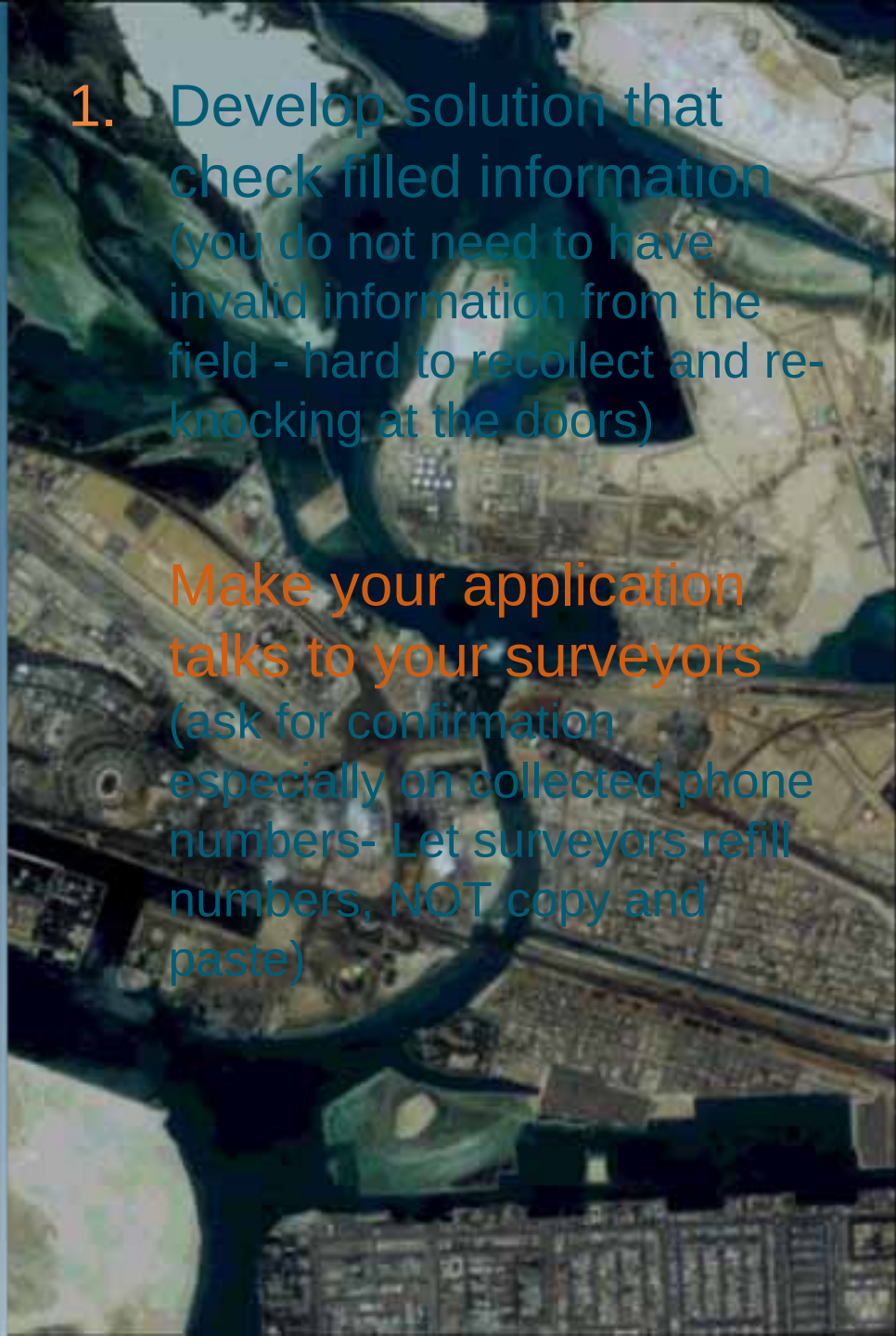
1. Add satellite images to your map, it will guide surveyors, but test speed of devices then!
2. Consider client's nature. Humidity, distance travel, battery validity.
3. Make your digital forms as paper forms (same terms, same steps). Do not be creative.
4. Very easy to use interface (Do not design too much - simple UI).

Tip and Trick #5: Surveyors/ enumerators



1. Teach your surveyors how to read the map. Where is the north, how to hold the device in correct direction.
2. Track surveyor's name (users) against collected data. You may need to ask them to verify what they collected.

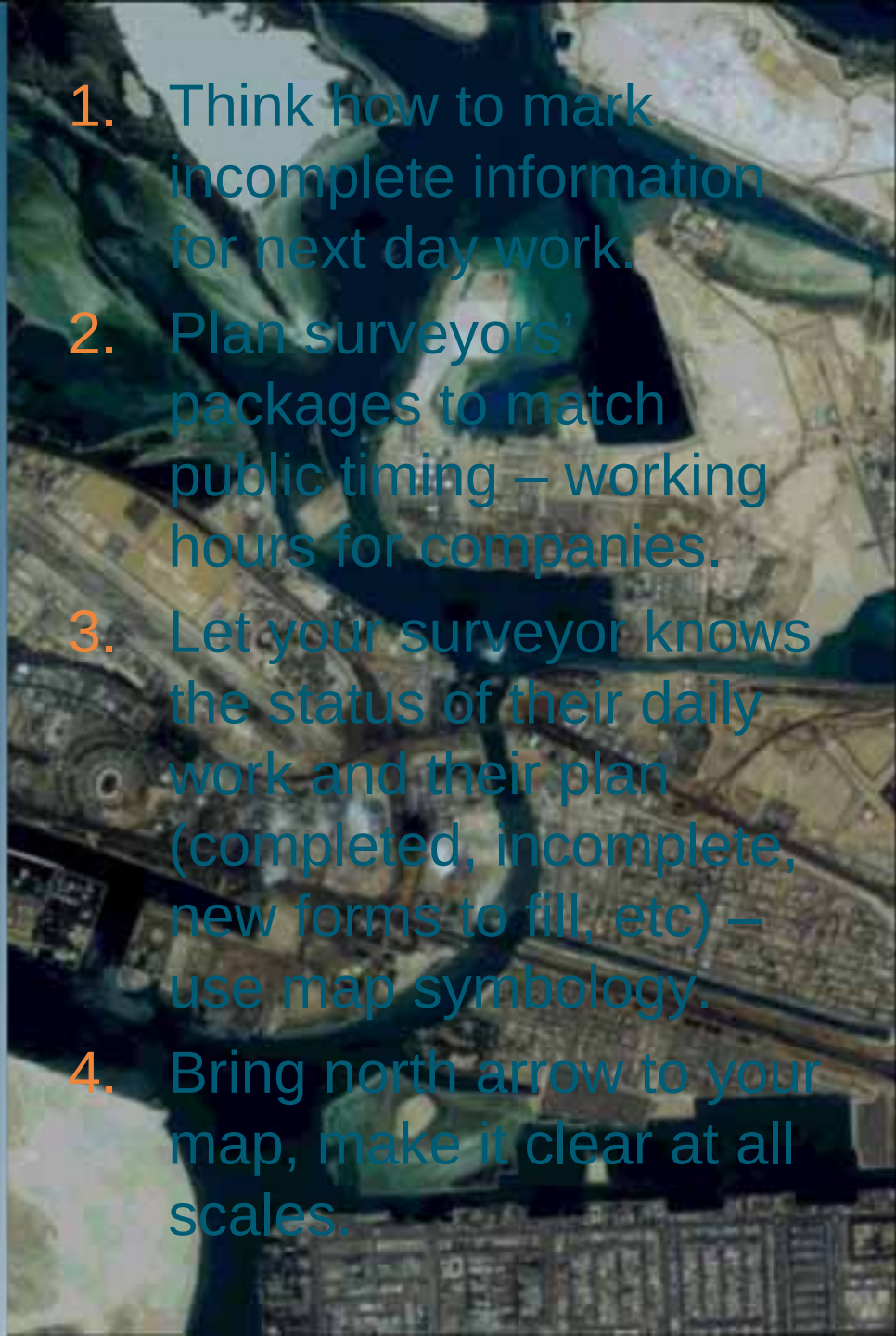
Tip and Trick #6:
Guide surveyors



1. Develop solution that check filled information (you do not need to have invalid information from the field - hard to recollect and re-knocking at the doors)

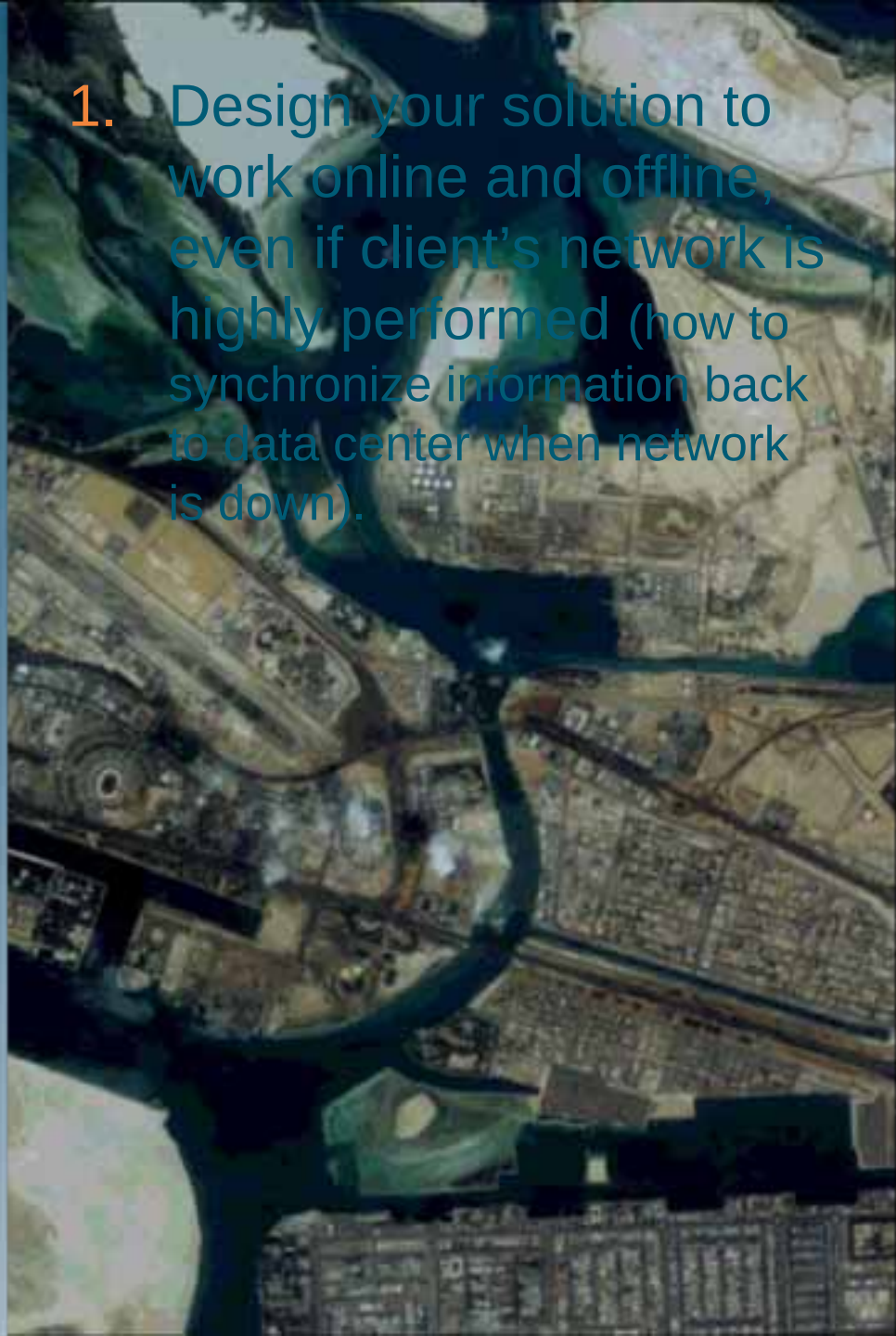
Make your application talks to your surveyors (ask for confirmation especially on collected phone numbers- Let surveyors refill numbers, NOT copy and paste)

Tip and Trick #6:
Guide surveyors



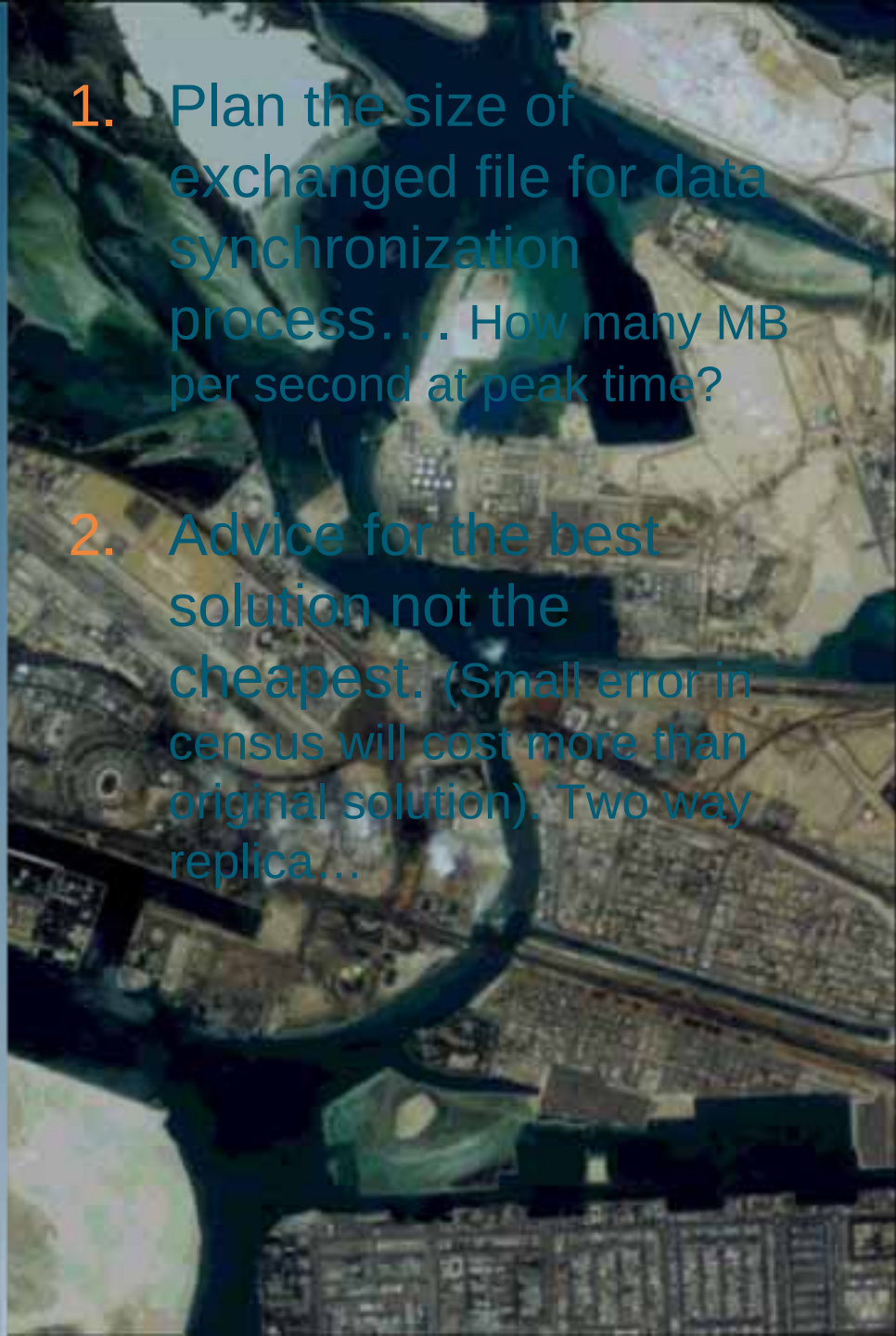
1. Think how to mark incomplete information for next day work.
2. Plan surveyors' packages to match public timing – working hours for companies.
3. Let your surveyor knows the status of their daily work and their plan (completed, incomplete, new forms to fill, etc) – use map symbology.
4. Bring north arrow to your map, make it clear at all scales.

Tip and Trick #7: Online-offline data exchange



1. Design your solution to work online and offline, even if client's network is highly performed (how to synchronize information back to data center when network is down).

Tip and Trick #7: Online-offline data exchange



1. Plan the size of exchanged file for data synchronization process…. How many MB per second at peak time?

2. Advice for the best solution not the cheapest. (Small error in census will cost more than original solution). Two way replica…

Do we adopt fast tracking project management for census projects?

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Thank you

Questions!

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