

**Regional Workshop on
Strengthening Multi-Hazard Risk Assessment and Early Warning System with
Applications of Space and Geographic Information Systems in Pacific Islands Countries**

26th – 27th April 2018

Nukualofa

Kingdom of Tonga



ArcGIS Tools for DRM Household Surveys

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COOK ISLANDS

Discussion

- HOUSEHOLD SURVEY
- WHAT IS GIS?
- WHY ARCGIS?
- ARCGIS PRO & ARCMAP
- QUESTIONS



BEFORE I GO ON

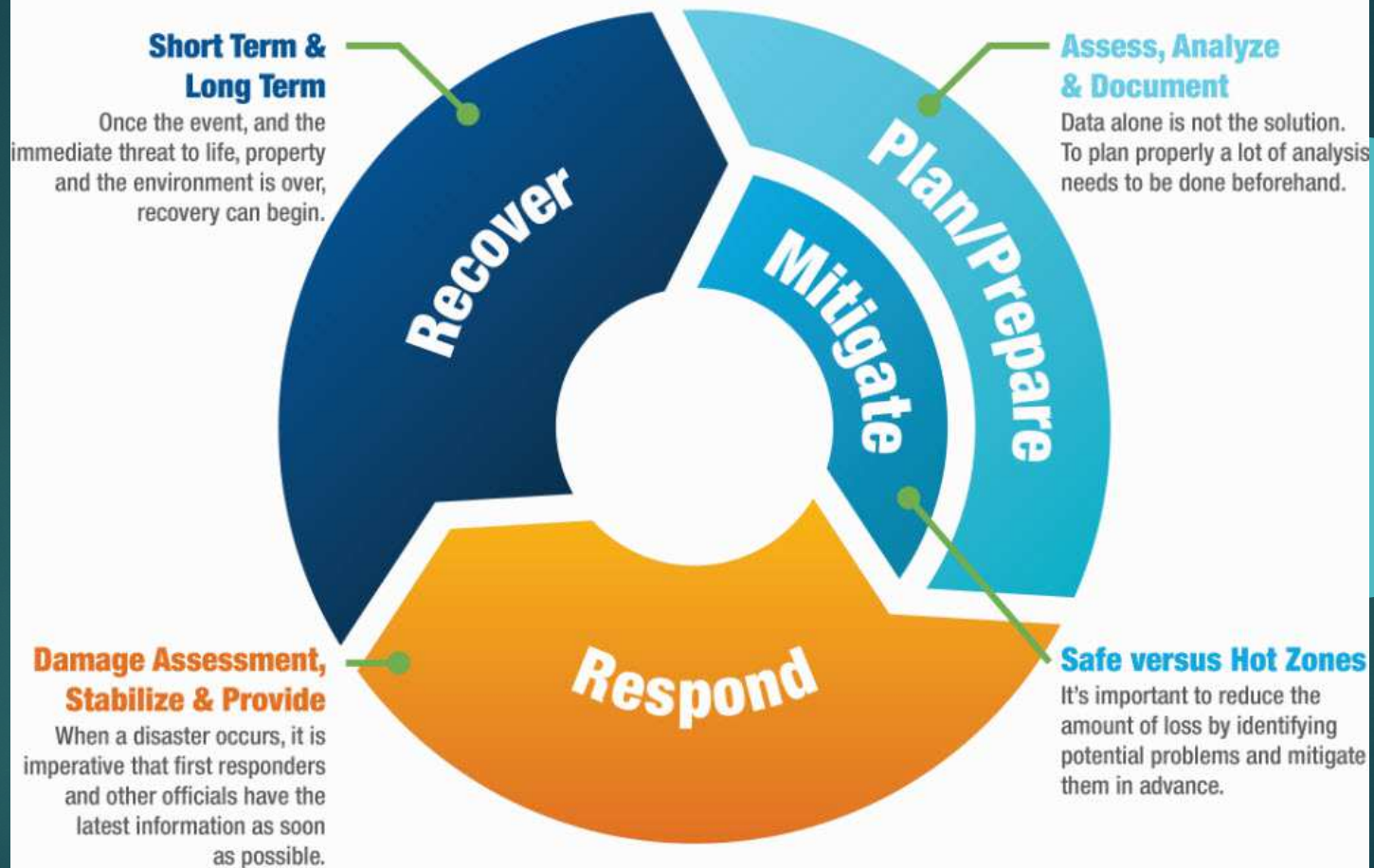
- ▶ ArcGIS Software was donated to the Cook Islands government by ESRI in 2013.
- ▶ This was donated as a contribution to the spatial data management of the Marae Moana, our Marine Park

PURPOSE OF SURVEY



1. Strengthen/Update Disaster Risk Management Plans
2. Collect/Update Household information from previous surveys
3. Transfer of Knowledge and Capacity

Disaster Management Workflow



RATIONALE— WHY ARE WE DOING THIS?

- ▶ Disaster Risk Management
 - ▶ Identify vulnerable buildings
 - ▶ Identify vulnerable people
- ▶ Climate Change
 - ▶ Minimize the negative impact of Natural Disasters – Droughts, Cyclones, Tsunami, etc



RATIONALE – HOW ARE WE DOING THIS?

- ▶ Stocktaking - Household Survey
 - ▶ Household Details
 - ▶ Population – and identification of vulnerable groups (Disability, Elderly, Children)
 - ▶ Building Structure/Strength
 - ▶ Water & Sanitation for Drought situations
 - ▶ Climate Change

WHAT IS GIS?

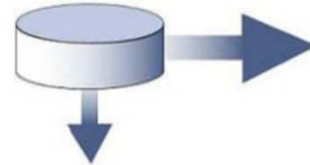
- GIS - Geographic Information System
- A system designed to capture, store, manipulate, analyze, manage, and present (mapping) all types of geographical data.
- The key word to this technology is **Geography** –the data is spatial related, or say, in some way the data is referenced to locations on the earth
- An optimized platform to enable data management sharing via online, especially for government organizations
- It has been used for all sorts of spatial related projects effectively
- All sort of different software: ArcGIS, MapInfo, GeoMedia...

WHAT IS GIS?

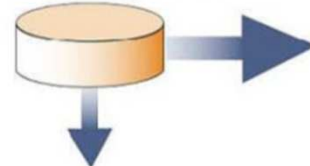
- Separated GIS Layers
 - Integrated GIS Database
 - Various formats
 1. ArcGIS Shape file
 2. ArcGIS Feature class
 3. ArcGIS Raster file
 4. MapInfo Tab file
 5. Bentley dgn file
-

Data source

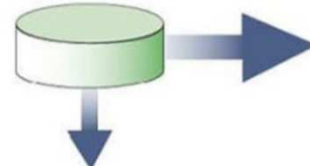
Street data



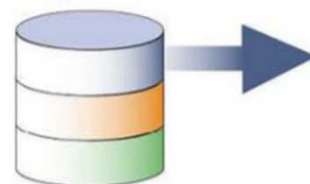
Buildings data



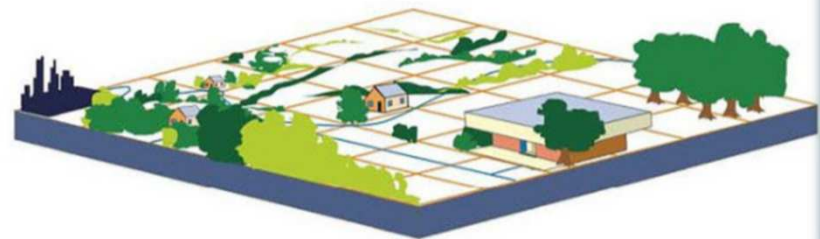
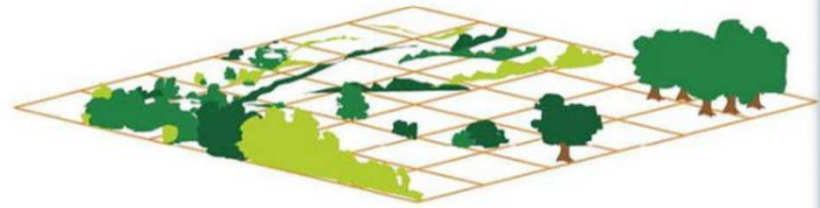
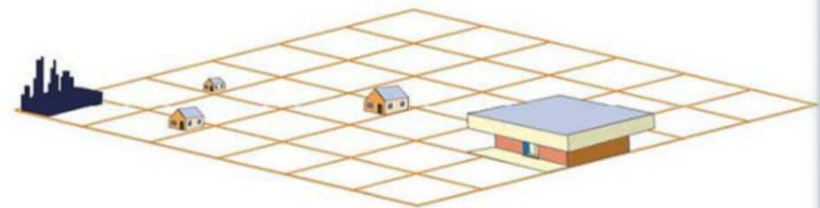
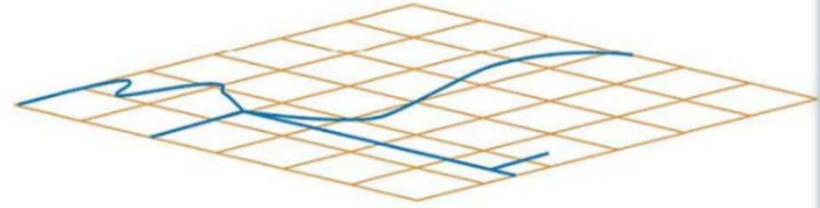
Vegetation data



Integrated data



Data layers



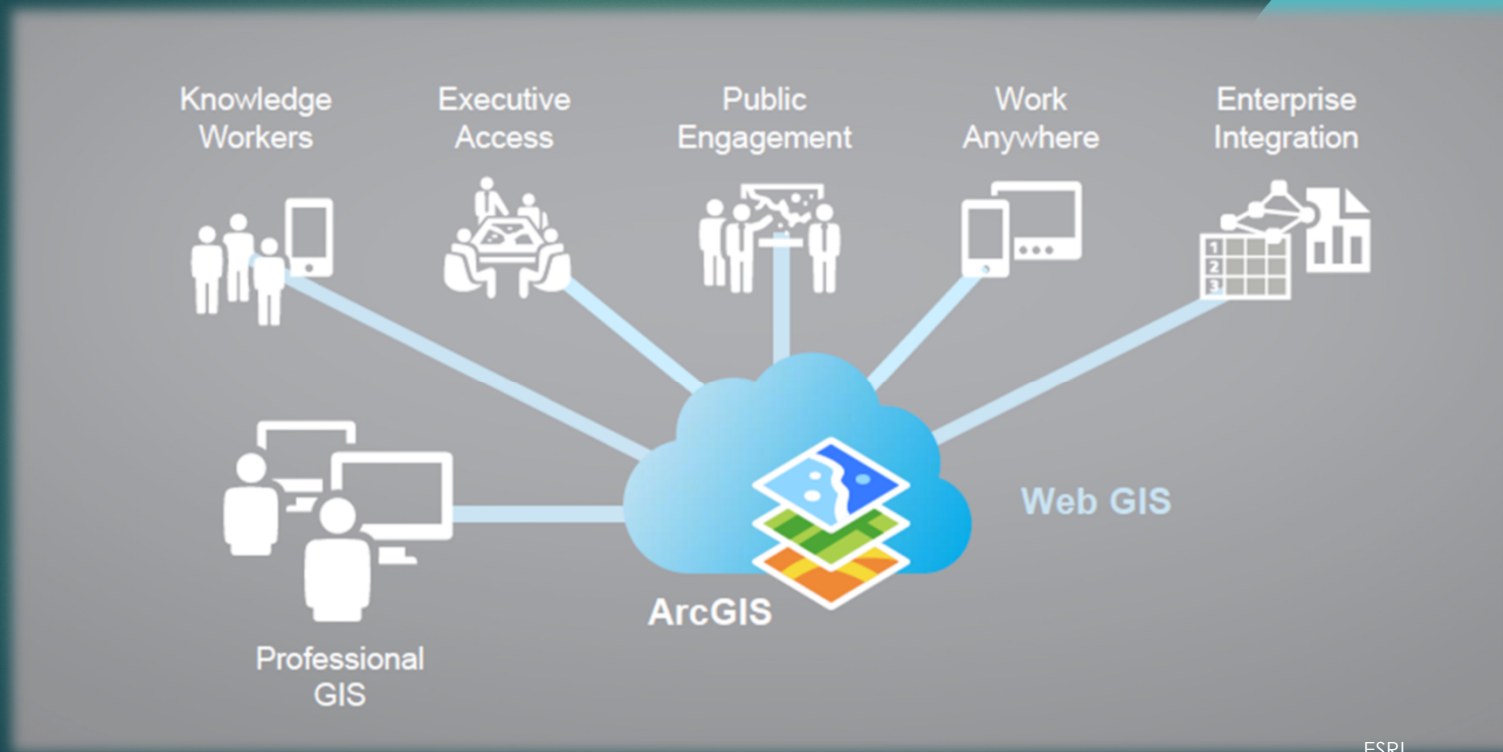
WHY ArcGIS?

- ArcGIS has been developed by ESRI (Environmental Systems Research Institute), founded in 1969 as a land-use consulting firm. Most used in GIS Users.
- It offers a unique set of capabilities for applying location-based analysis to all business practices.
- Gain greater insights using contextual tools to analyze visualize the data, and sharing them smoothly.
- *Great support globally*
- *Active ArcGIS User communities*
- *Technical Trainings*
- *Interface user friendly*
- *700-900 tools*



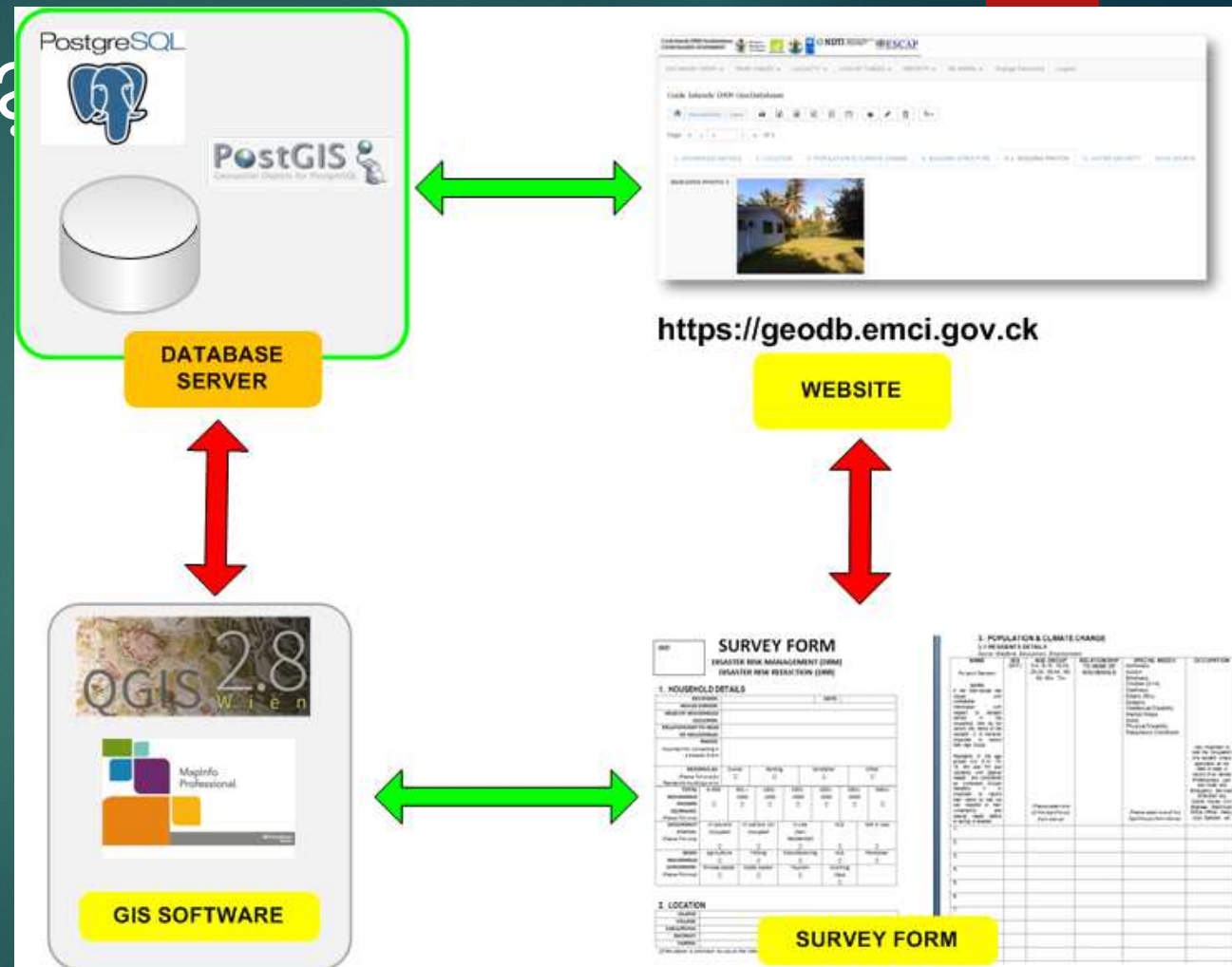
WHY ArcGIS?

- The products suit all different purpose



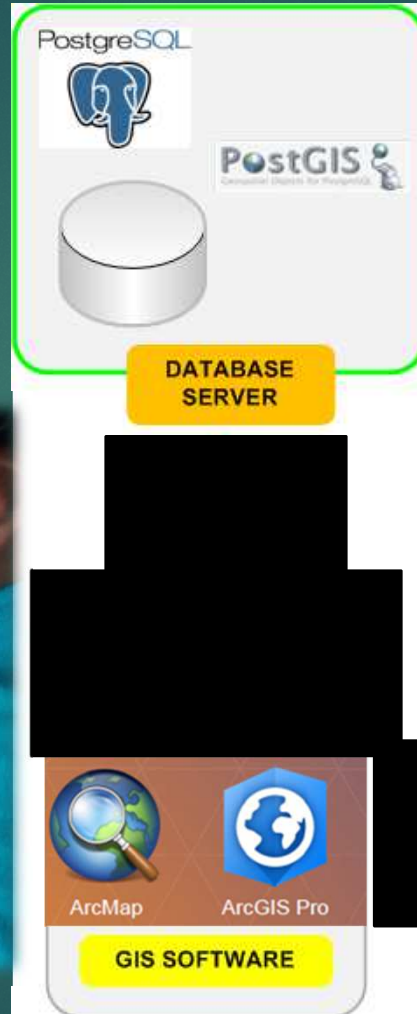
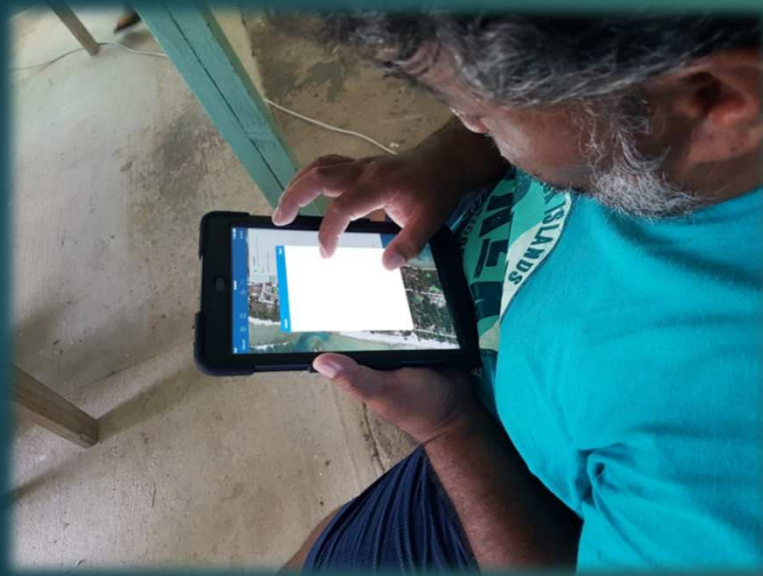
WHY ArcGIS?

- In the Old days
 - 2014 – 03/2018



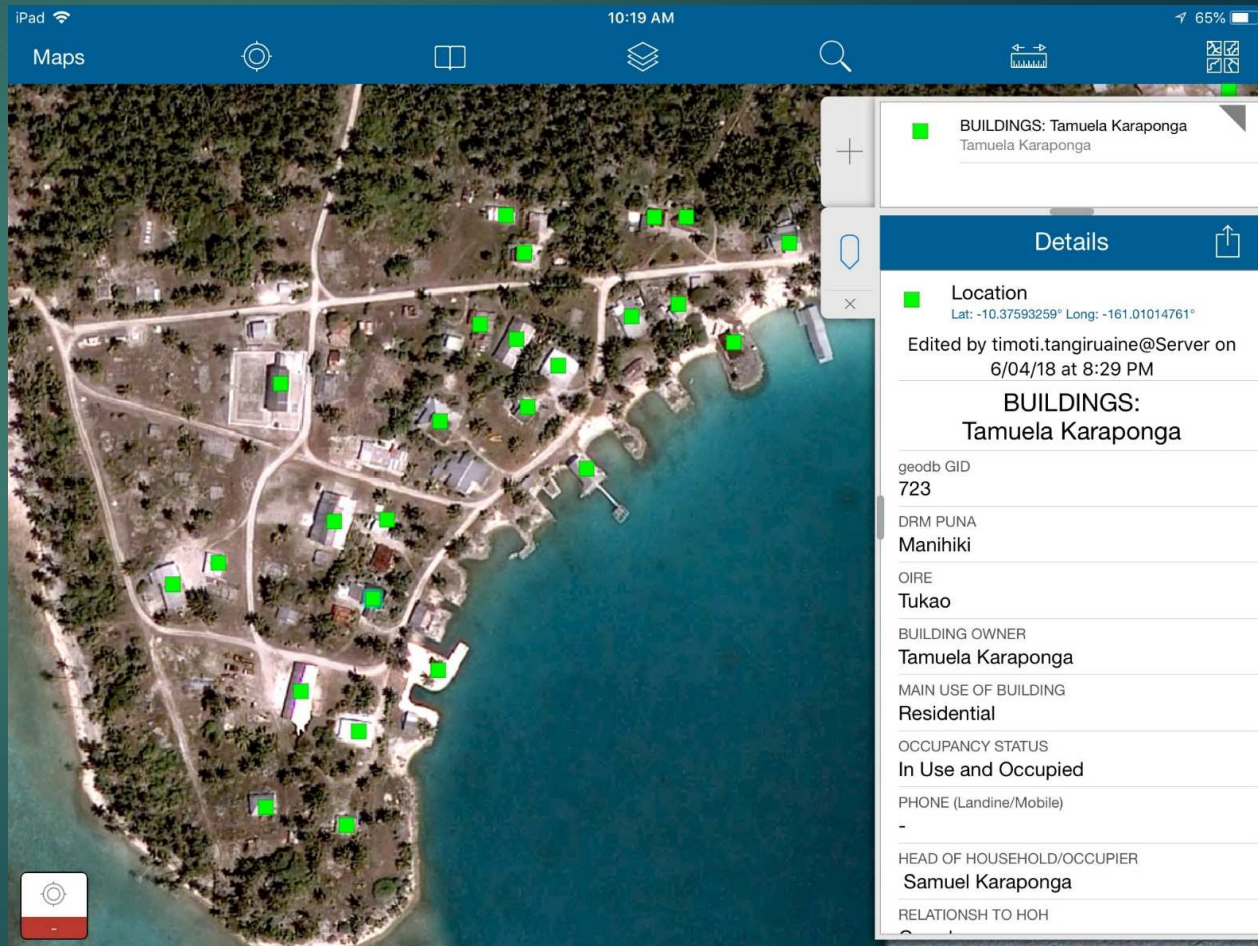
WHY ArcGIS?

- Now
 - Collector for ArcGIS

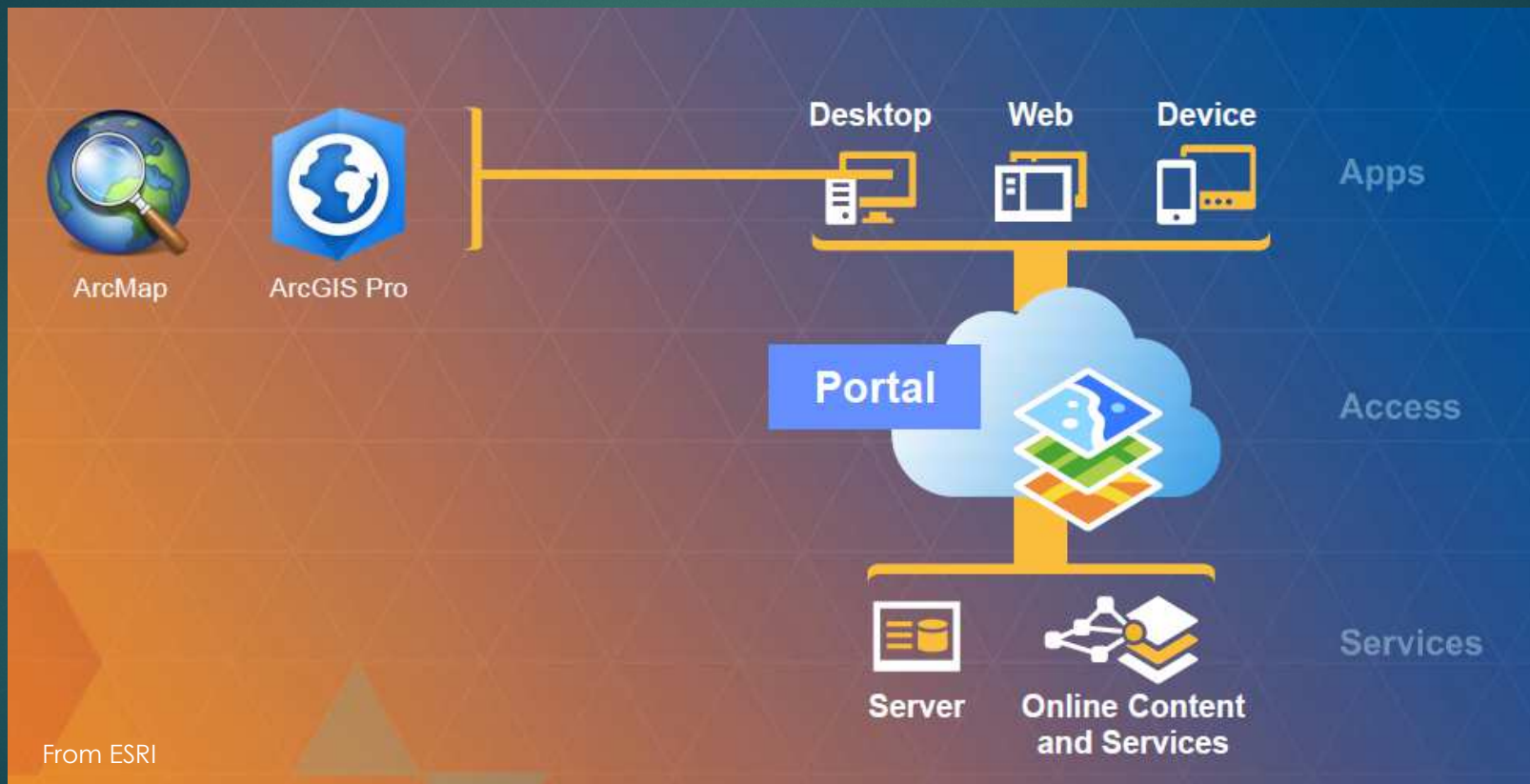


WHY ArcGIS?

- Data collection tools
 - Survey Form



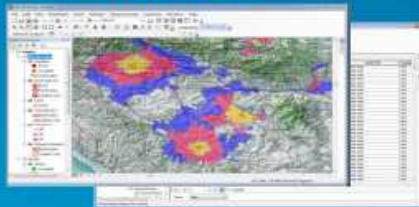
ArcMap & ArcGIS Pro



ArcMap & ArcGIS Pro

ArcGIS Pro combined all components into ONE, and slow down the process, and requires more RAM (increase RAM if you have lots of GIS jobs, 32GB Min.)

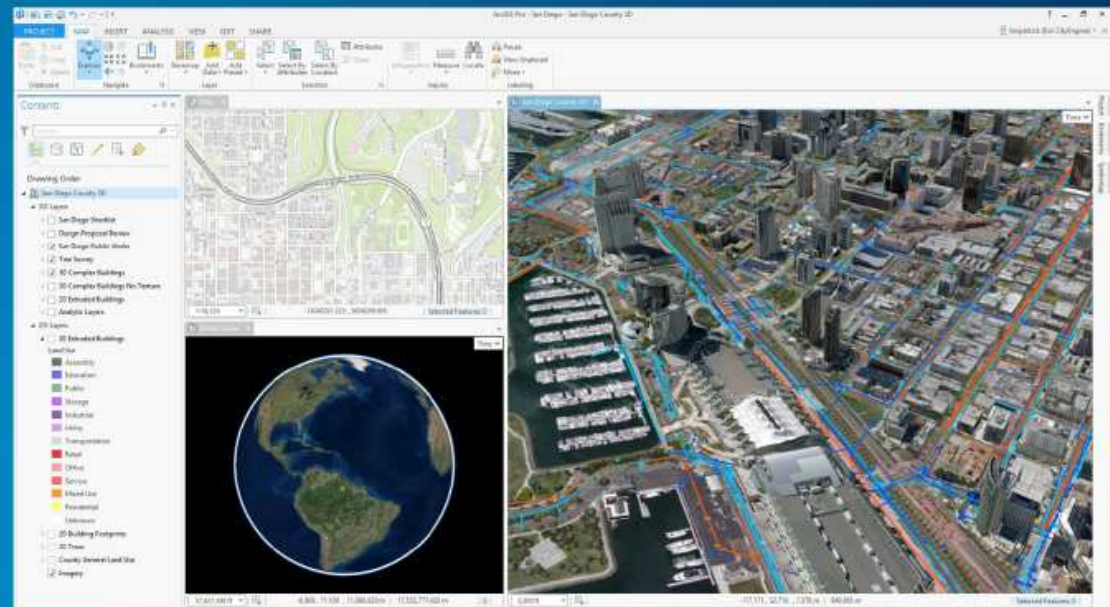
ArcMap / ArcCatalog



ArcGlobe / ArcScene



CityEngine



From ESRI

ArcGIS Pro



ArcMap & ArcGIS Pro

Toolboxes not available in ArcGIS Pro

The following toolboxes and all tools contained within them are not available in ArcGIS Pro. These toolboxes and tools continue to be available in the other ArcGIS Desktop applications.

- Coverage Tools
- Data Interoperability Tools
- Parcel Fabric Tools
- Schematics Tools
- Tracking Analyst Tools

In addition to the tools contained within the toolboxes above, there are many tools in various toolboxes that are not available in ArcGIS Pro. They are listed below by the toolbox you would find them in other ArcGIS Desktop applications. These tools continue to be available in the other ArcGIS Desktop applications.

3d Analyst Tools

- Export To 3D Web Scene

Cartography Tools

- Add Representations
- Calculate Adjacent Fields
- Calculate Central Meridian And Parallels
- Calculate Grid Convergence Angle
- Calculate Representation Rule
- Calculate UTM Zone

ArcMap around 900 tools
ArcGIS Pro around 700 tools

- **ArcGIS Pro is a new part of Desktop**
- **ArcMap and ArcGIS Pro run side by side**
 - **Separate install**
 - **Imports MXDs, SXDs, and 3DDs**
 - **Models and Scripts (Python)**
- **Basic, Standard, and Advanced Levels**

- **Simplified user interface**
- **Integrated with ArcGIS Online**
- **Combined 2D/3D experience**
- **Multiple maps and map layouts**



Meitaki

Any
Questions

