ArcGIS Mobile - Using the ArcGIS Mobile Application

OK SCAUG User Group Meeting

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Pam Kersh

pkersh@esri.com

ArcGIS 10 — A Complete System

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Esri Mobile GIS Products

ArcGIS for Smartphones

- Find addresses & places
- Identify Locations & GIS features
- Query map layers & data
- Measure lines & areas
- Collect features and attributes

ArcGIS Mobile

- Field workforce
- Collect & Inspect
- Task-based workflow
- Server or Desktop management
- Create custom apps

ArcPad

- Accurate Data Capture
- GIS in your pocket
- Ad hoc deployment
- Desktop or Server management

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Benefits of the ArcGIS Mobile Application

- Quick and easy deployment of maps, apps and projects
- Task-based user experience
- Synchronization of data between field and office
- Local caching of data

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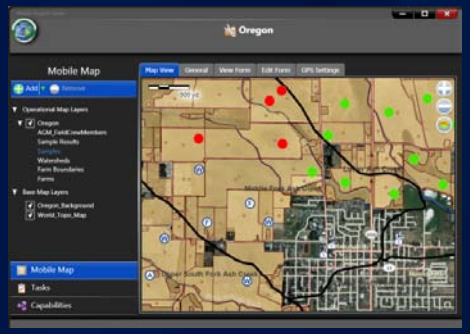
What's included in ArcGIS Mobile 10?

- Task-centric field applications
- Mobile Project Center
- Geoprocessing Tools
- .NET Software Development Kit



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Requirements and Licensing

- ArcGIS Mobile requires:
  - .NET Framework
  - Supported OS on the device
    - Windows Mobile 5.0 Pocket PC
    - Windows Mobile 6.0, 6.1 Classic/Pro
    - Windows XP SP3
    - Windows Vista SP1, SP2
    - Windows 7
- Licensing
  - Unlimited deployments with Server Enterprise Advanced
  - One deployment per Desktop license; can purchase additional bundles of five
  - Bundles of 50 available for Enterprise Standard and Workgroup Advanced

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Applications

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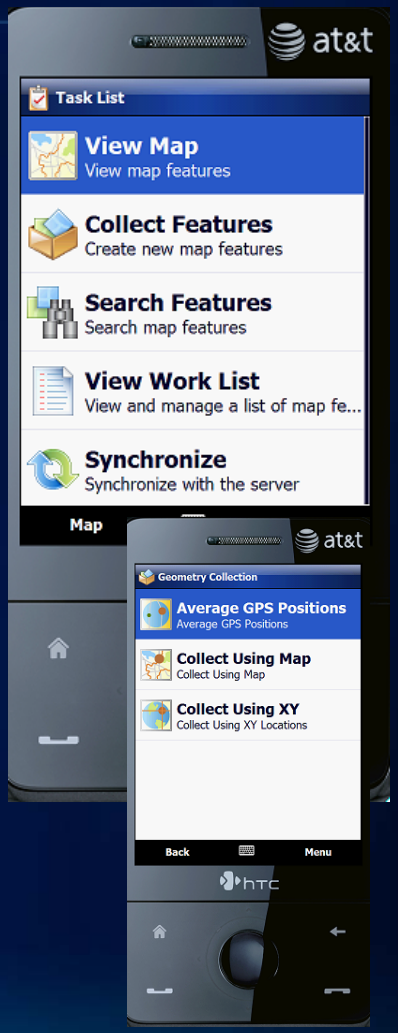
ArcGIS Mobile for Windows Mobile

- Designed for Windows Mobile touch and non-touch devices
- Page-driven flow
- Integrated SIP/numeric pad
- Leverage hardware keys to improve usability
- Gesture support



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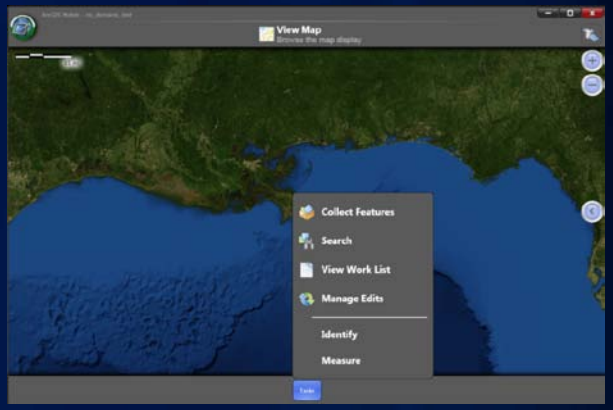
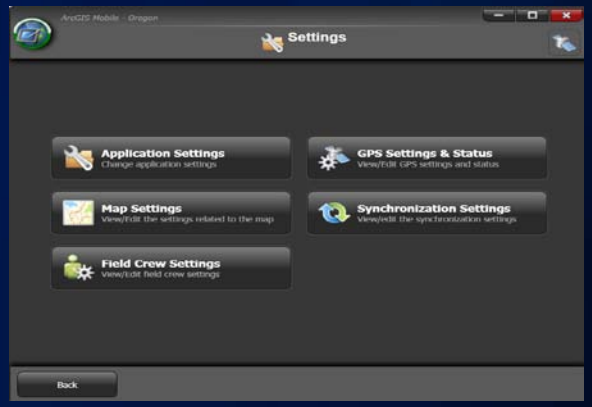
ArcGIS Mobile for Windows

- Designed for Windows “Touch” devices
- Day/Night skin
- Application Brightness
- Integrated keyboard
- Dim Basemap for contrast





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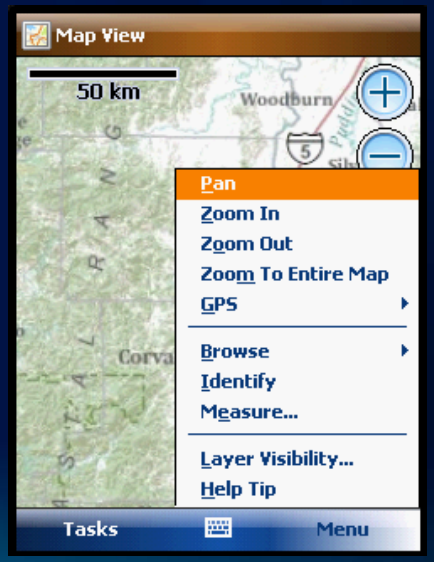
Working with Maps

- Maps consist of:
  - Operational Layers
  - Basemap Layers
    - Street Map
    - ArcGIS Server Map Cache
    - ArcGIS Online Map Service
    - ArcGIS Server Cached Map Service
- Map navigation
- Layer visibility
- Browse features
- Identify features
- Measure distance, area, features



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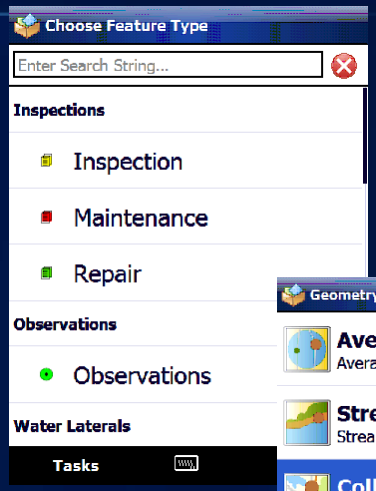
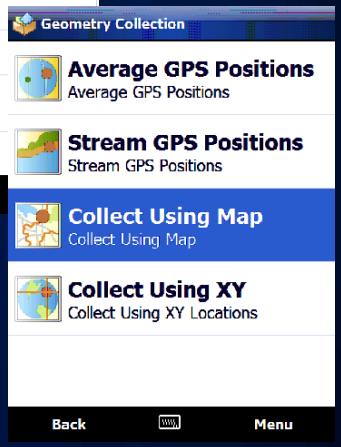
Collect Features

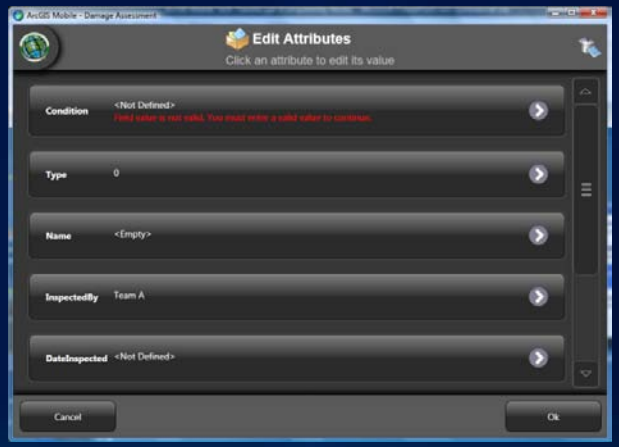
- Choose Feature Type
- Collect Geometry
  - Using Map
  - Using GPS (Averaging/Streaming)
  - Using XY
- Collect Attributes
  - Field captions
  - Edit controls
  - Photo Capture
  - Field validation
  - Repeat attributes



Feature Types



Collection Methods



Field Validation

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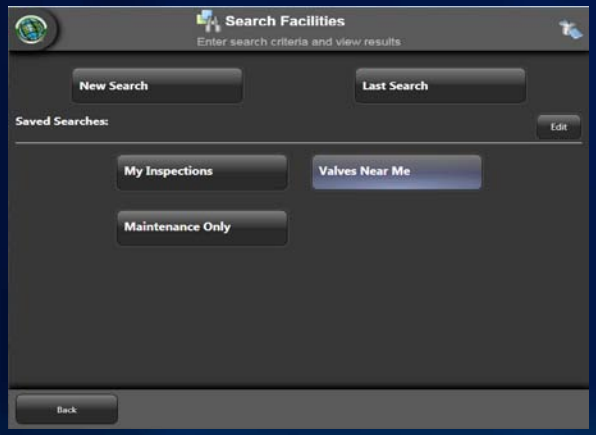
Query/Search Data and Work Lists

- Search based on feature types or layers
- Define attribute criteria
- Manage results in work lists
- Save searches
- Deploy searches to field workers



Pre-defined searches

Build advanced queries

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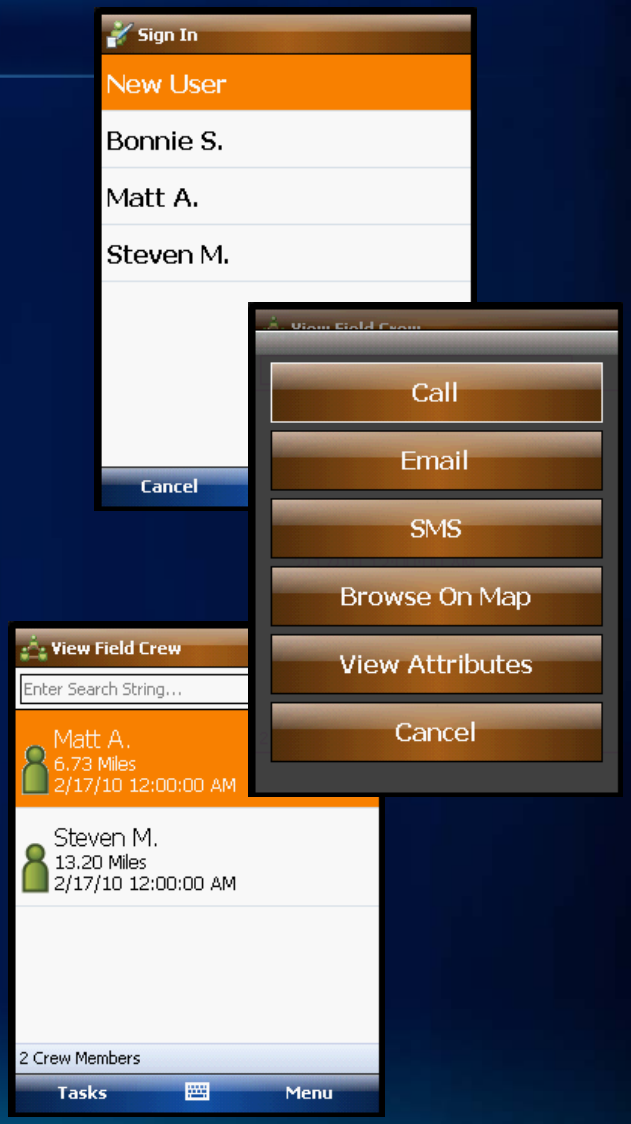
Field Crew Management

- **Field Crew Logging**
  - Log at set time or distance interval
  - Log GPS location with date/time stamp
  - Silent/invisible to field worker
- **Field Crew Task**
  - View crew by distance/time
  - Browse their location on map
  - Call, SMS, email crew members
- **Sign In**
  - Set user identity
  - Create new user identity



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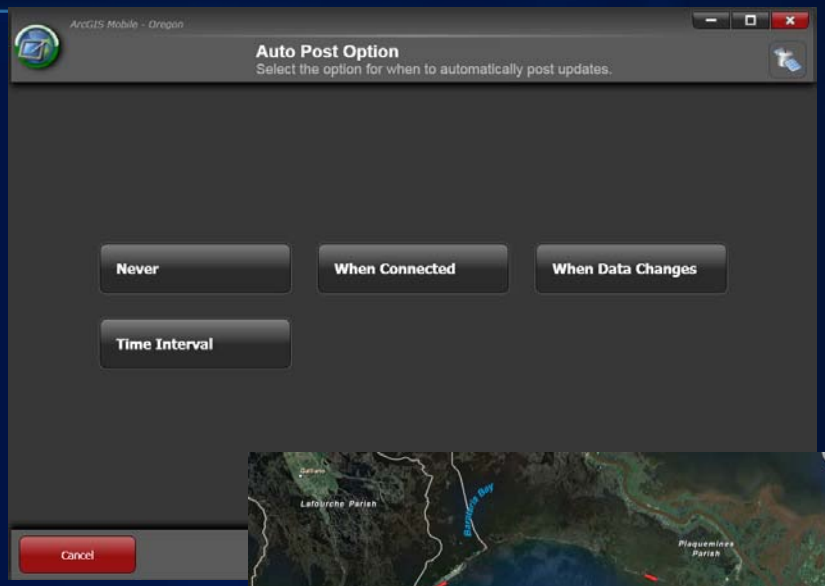
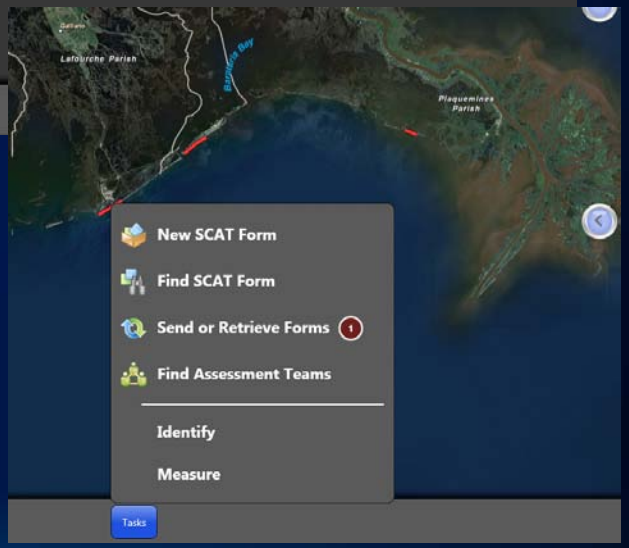
Synchronizing Data

- Get data
  - Choose layer(s)
  - Choose extent
- Post data:
  - Auto-sync options
    - When data changes
    - When cradled/connected
    - Time interval
- Alert in Task List
  - Shows number of edits yet to be synced





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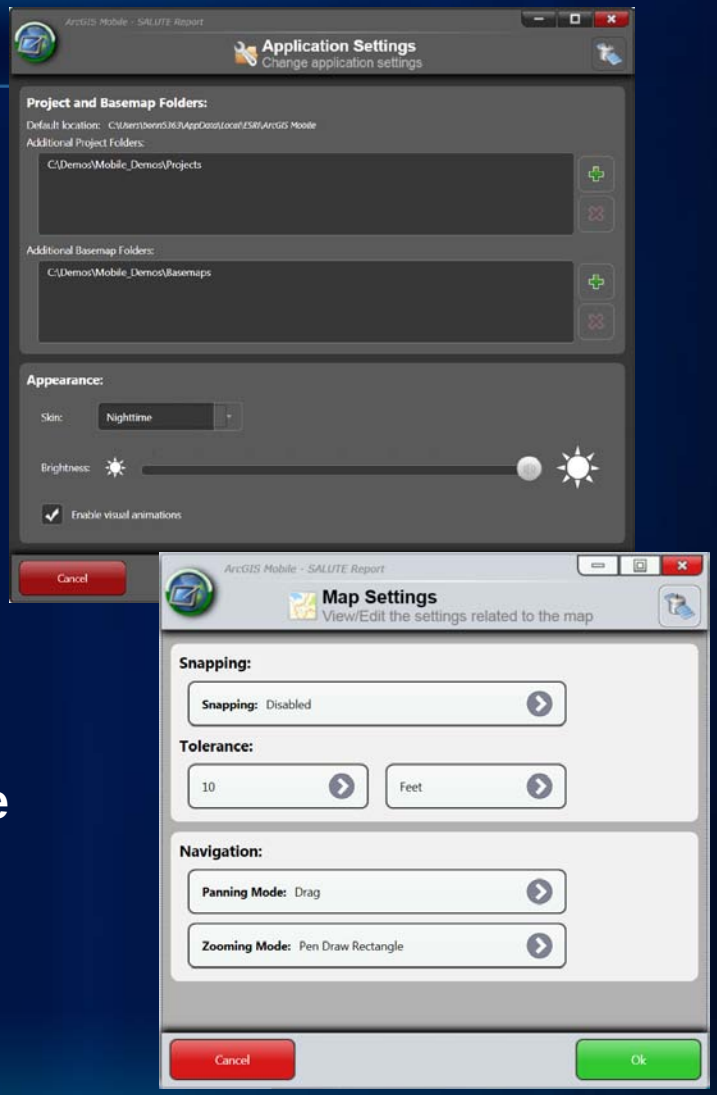
Settings

- Application
  - Project and Basemap folders
  - App skin and brightness
- Map
  - Snapping
  - Navigation
- GPS
  - Connection port and Baud rate
- Synchronization
  - Auto-post options



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Creating a Mobile Project

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Creating & Deploying a Mobile Project with Server

1. Understand field workflows
2. Design and build mobile geodatabase
3. Author your mobile map
4. Publish mobile service
5. Configure mobile project
6. Deploy mobile project and basemap

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Understanding Field Workflows

- What tasks need to be accomplished?
- What layers of information are required?
  - Operational (editable)
  - Basemap
- What type of device?
  - Capabilities (cellular, GPS, etc.)
  - Battery life
  - Size
- Need to synchronize in the field?
- How many deployments?
- Security?

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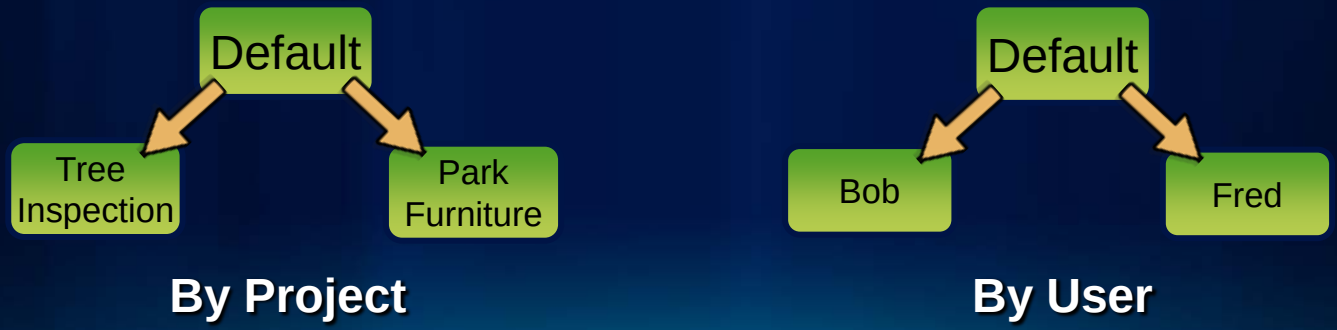
Designing the Geodatabase

- **Choose the right Information Model**

- **Choose the right Transactional Model**



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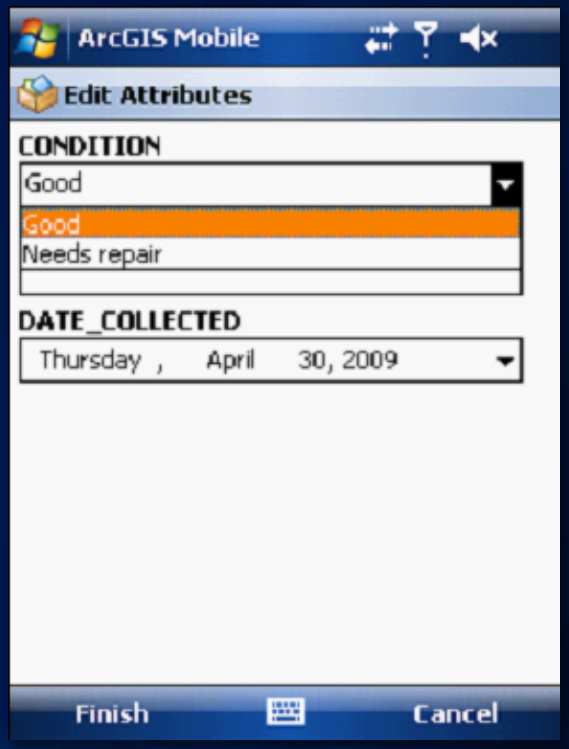
Designing the Geodatabase

- **Editable features must:**
  - **Be stored in a geodatabase**
  - **Contain global IDs**
- **Data model considerations**
  - **Domains**
  - **Subtypes**
  - **Default values**
  - **Empty text fields**
  - **Date field for timestamp**



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Authoring Mobile Maps

- **Design for purpose**
  - Remove unnecessary layers and labels
  - Set scale dependencies
  - Use unique value renderer

- **Design for environment**
  - Establish contrast
  - Reduce transparencies

- **Design for device form factor**
  - Set scale dependency and symbol width based on device resolution

320x240

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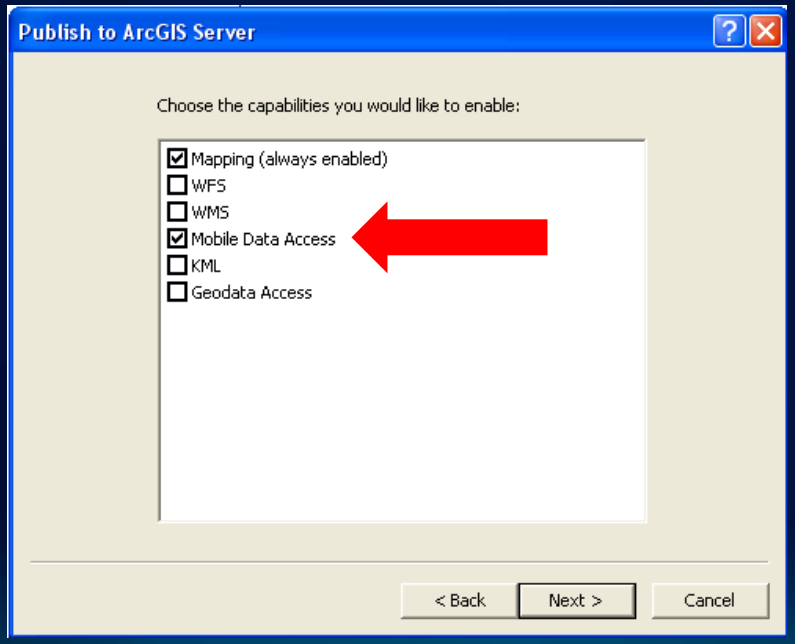
Publishing Mobile Maps

- Can publish through ArcCatalog or Server Manager
- Need to enable Mobile Data Access capability
- Make sure SOC has permissions on map and data



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Demo

- Creating and publishing a mobile map

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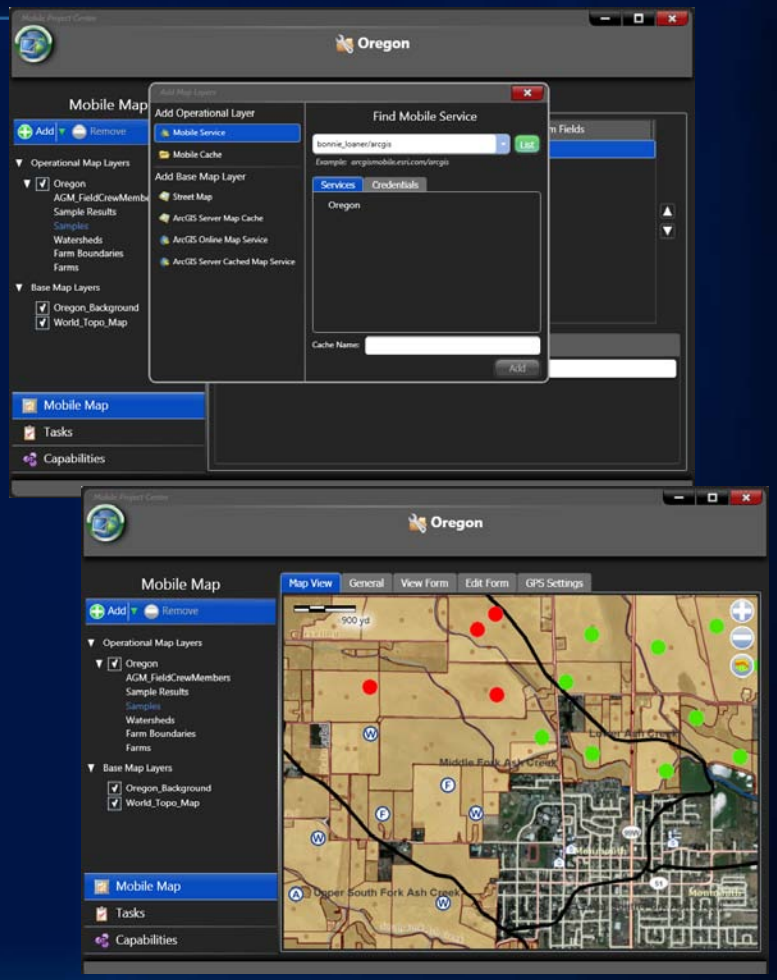
Mobile Project Center

- Application for Field Managers to create and manage mobile projects
- Projects contain mobile maps, tasks and capabilities
  - Add Operational and Basemap layers
  - Configure what is viewable, searchable, or editable
  - Configure GPS settings



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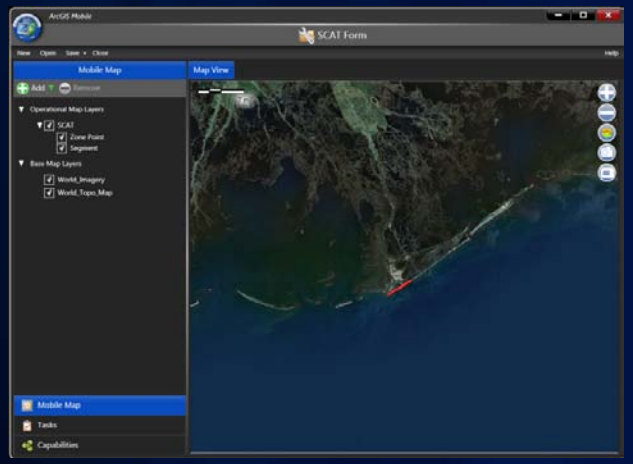
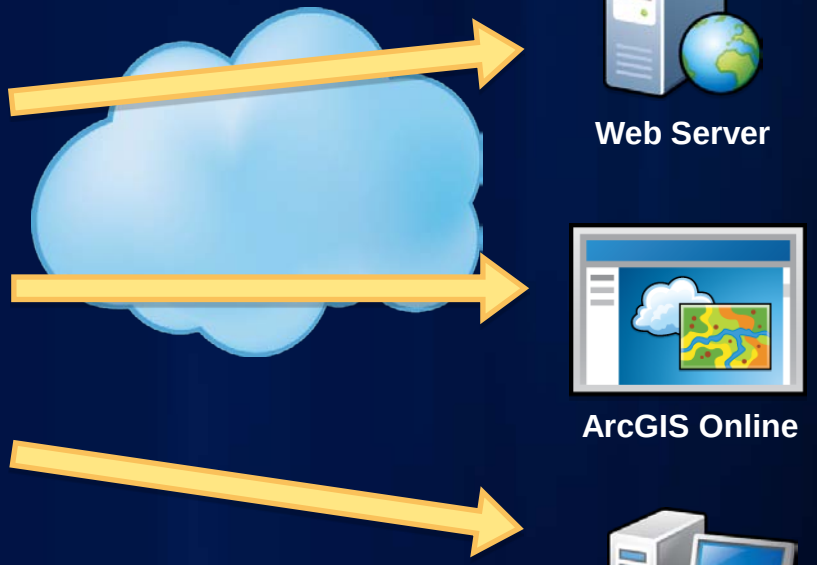
Storing Mobile Projects

- **Projects are stored on a web server, file system, or ArcGIS Online as a .wmpk (Windows Mobile Package)**



Mobile Project Center



Web Server

ArcGIS Online

File System

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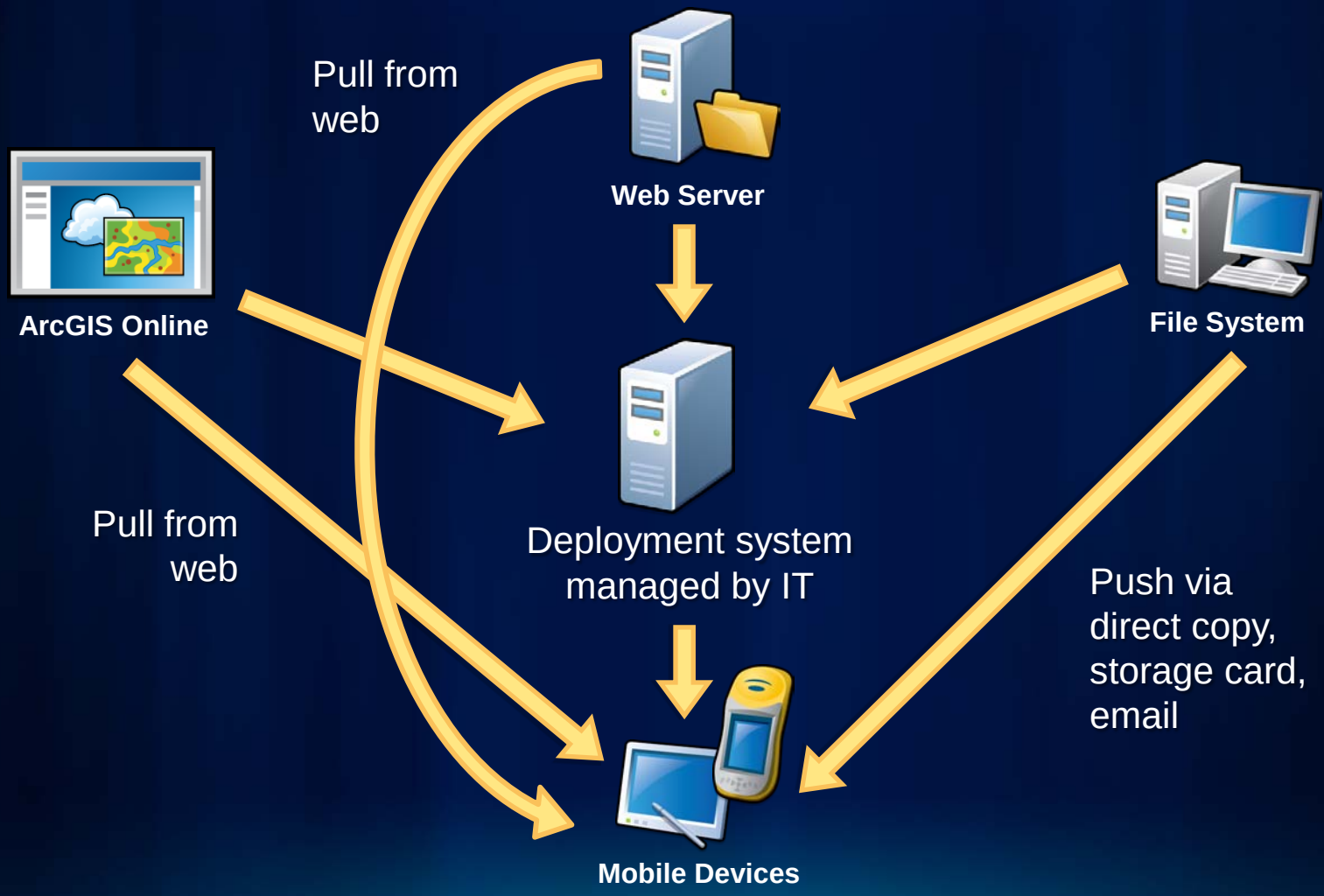
Deploying Mobile Projects



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Demo

- Configuring and deploying a mobile project (Server)

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Desktop Deployment

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Creating & Deploying a Mobile Project with Desktop

1. Understand field workflows
2. Design and build mobile geodatabase
3. Author your mobile map
4. Extract mobile cache
5. Configure mobile project
6. Deploy mobile project and cache/basemap

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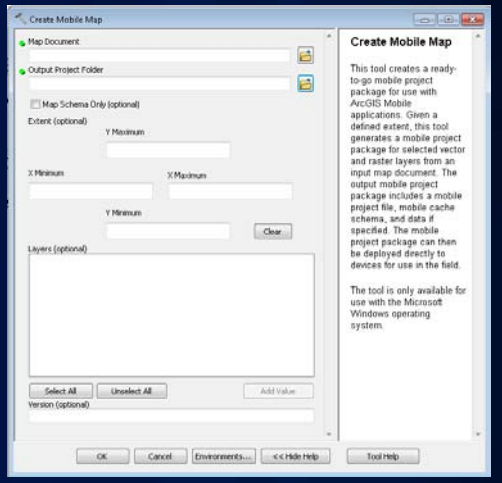
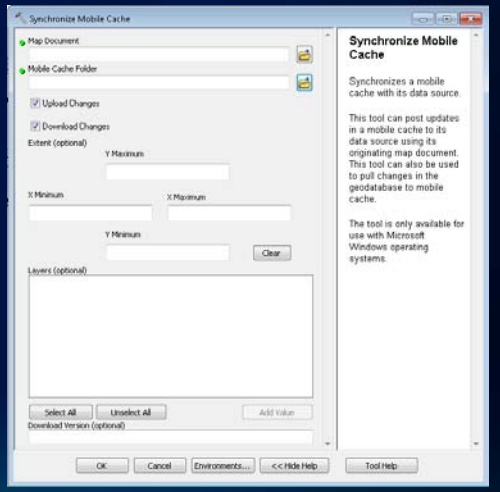
ArcGIS Mobile Geoprocessing Tools

- **Create Mobile Map**
  - Creates a mobile cache from an input map document
- **Synchronize Mobile Cache**
  - Uploads edits from a cache to your geodatabase via a Map Document
  - Downloads changes from geodatabase to mobile cache
- **No Server needed!**





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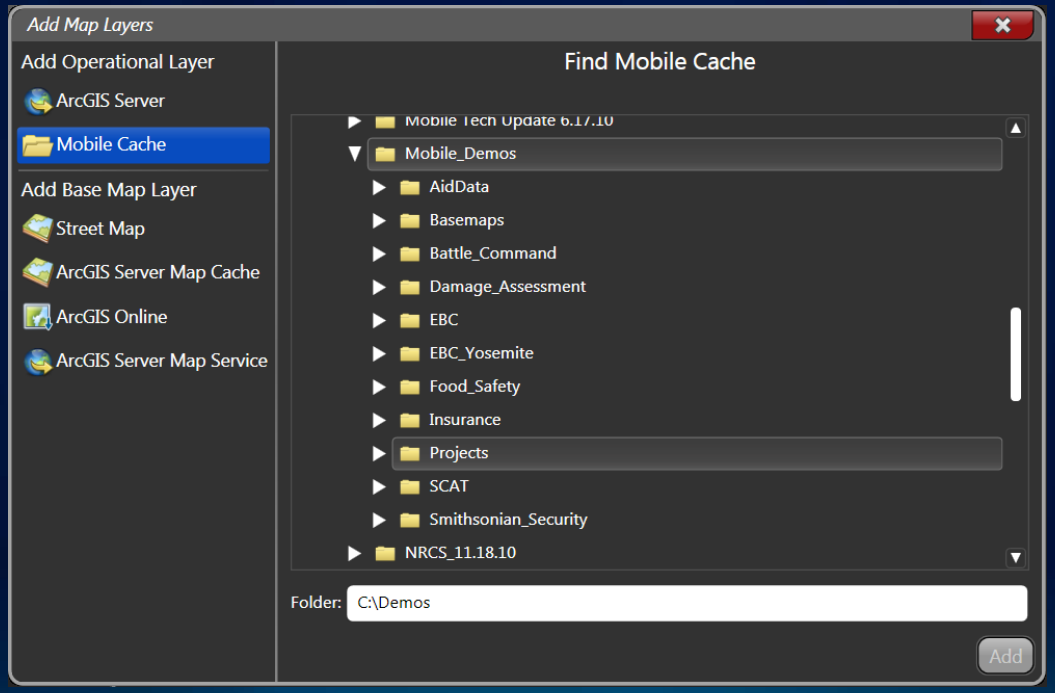
Configure Mobile Project

- **Instead of adding a service, add a reference to the cache created by the GP tool**



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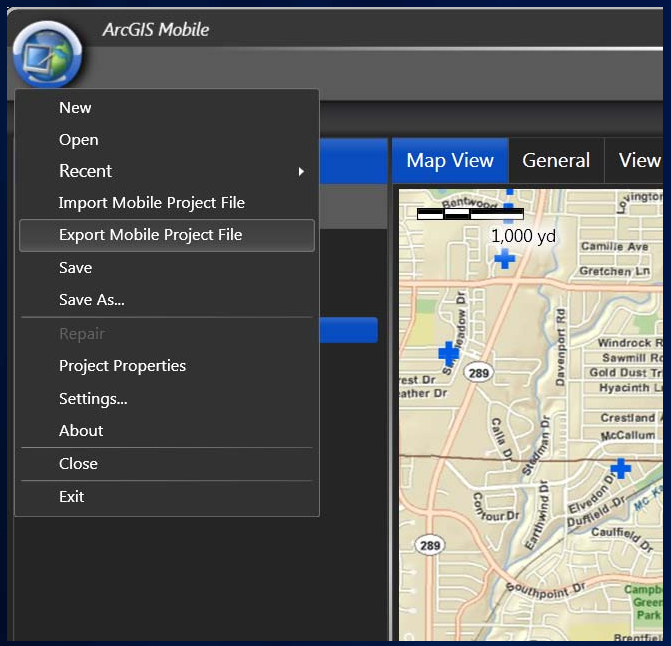
Export Mobile Project

- Export the project file (.amp) to the same output directory used for the GP tool



Mobile Project Center

Project folder

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Deploying Mobile Projects

- Push entire project folder to device (direct copy, storage card, email)
- Must go in Projects folder known to the application

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Demo

- Desktop deployment

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Resources

- http://resources.arcgis.com
  - Under ArcGIS Products, choose Mobile → ArcGIS Mobile
- http://training.esri.com
  - “Authoring and Serving ArcGIS Mobile Projects”
- http://arcgis.com
  - Gallery → Mobile Apps
- http://ideas.arcgis.com
  - Choose ArcGIS Mobile on the left

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