Uses For Your iPad Beyond Angry Birds

Spring NEARC 2012
What’s hot? / Hot!
GIS Technology is *(Still)* Evolving Rapidly

- Software Capabilities Still Growing
- Feed Data to “Any” Device in Any Location
- Strong Integration with Key Systems
<Result Of The Changes = (Even More) Choices/>
<This Evolution Opens Up New Opportunities...
Beyond Mapping/>

• **Access**
  – By Staff and the Public
  – To Office, Mobile, Home

• **Visualize**
  – System Condition
  – Project Status

• **Integrate**
  – Asset Management
  – CIP Programs
  – Telemetry
  – Emergency Preparedness
Many New Devices
Engineering and Planning
Operations Crews
Management Staff
The Public
<Hot GIS Trends – Supporting Asset Management/>

- Compile Asset Inventory
- Assess Condition
- Determine Criticality and Risk
- Visualize, Predict, Plan
• Analyze Project Viability
• Determine Project Locations
• Track Project Progress
• Manage Infrastructure Programs
Hot GIS Trends

- Work Order Tracking
- Real-Time System Status
- Public Alerts
- Online Editing
Hot GIS Trends

- Emergency Response
- Data Collection & GPS
- Condition Assessment
<What’s Hot - Summary/>

- **Mobile**
  - Inspections
  - Real-Time Data Feeds

- **It’s all about the APIs**
  - Maturing Business Systems are building their own APIs
  - Less and Less Custom Code

*GIS data can now be “pulsed” to devices and systems, regardless of location, customized for individual users*
Mobile Application Goals/

- Nimble
- Flexible

Hours, not Days
Development Options

- Custom Code vs. Templates
- Workflow vs. Ad Hoc
• Defined workflow
• One time visit or Multiple visits
• Usually outdoors
• Can use existing paper forms
• Use existing field crews
<Municipal Inspection/Data Access App>

- Existing GIS Datasets or Create New Features
- Points, Lines, Polygons
- Attach Photos & Videos
- Online or Disconnected *
- GPS Location
<Not-So-Distant History Lesson>

Mobile Project Workflows
<Not-So-Distant History Lesson/>
Lengthy Code Optimization falls on Developer
You really didn’t want these.....
ArcGIS Server APIs (Web & Mobile)

What makes “hot” possible?

No direct interface with ArcObjects
Primary consumer WAS Web Apps
• Set of rules ('code') and specifications
• Facilitates interaction between different software programs
• Feature Class Templates!!
• ArcSDE Coded Domain Values!!
• Legend Swatches!!
• For the first time EVER: *Forward Compatible* to AGS 10.1 Release
• Legend & Symbology Renderers
• Spatial Reference
• Spatial Reference Units
• **Domains**
• Definition Queries
• Default Visibility
• Extents
• Map Caches
• Supported Operations
• Etc....
<Mobile Workflow Barriers/>
<Mobile Workflow Barriers/>
Mobile Workflow Barriers
<*Whew* .......But How?>

- Create ArcSDE Feature Class
  - Enable Versioning
  - Enable Attachments (v10)
- Create Attributes
  - Domains
- Add Feature Classes to Map Document
- Publish Map Document to AGS as FS
- Edit Configuration File
XML Configuration

- Each Unique entity has an entry
  - Inspection Type
- The Basemap MapService URL
- The Feature Service REST URL (the one that’s edited)
- The Edit Fields from the Feature class in the Feature Service
- Geographic Extents
- The Quickmap Names and Layers
Need Another Inspection Type?  ---- Change The XML

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  <municipality>
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    <baseurl attribute="http://ags2.cdm.com/ArcGIS/rest/services/MANSFIELD_MOBILE_BASE_MS/MapServer"/>
    <featureurl attribute="http://ags2.cdm.com/ArcGIS/rest/services/MANSFIELD_MOBILE_POINT_FS/FeatureServer/0"/>
    <tileurl attribute="http://server.arcgis.com/arcgisrest/services/World_Street_Map/MapServer"/>
    <searchurl attribute="http://ags2.cdm.com/ArcGIS/rest/services/MANSFIELD_MOBILE_POINT_FS/MapServer/1"/>
    <extent attribute="710714.55,2813321.28,753162.47,2850092.12"/>
    <searchhint attribute="Enter Street Name or Address (e.g. Main)"/>
    <searchcolumn name="Location"/>
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    <gislayerlink attribute="GIS_ID"/>
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<PRASA ‘AquaPad’ App – Project Summary>

- Near Real-Time Data Feeds
- Puerto Rico Aqueduct and Sewer Authority
Mobile Development Architecture
• Telemetry – Location
• Telemetry – Current
• Telemetry – History
• Telemetry – Statistics
Mobile Development Architecture
<Mobile Development Frameworks> (AND APIs)

Who’s the Winner???
You’re asking the wrong question…
What is the right tool for the job?

- Microsoft/Apple/Android
- Intranet/Internet
- Ruggedized?
- Accuracy
- Users
- Plug-Ins
<Industry Shifts/>
Pros/Cons of Developing with iOS

Pros

– Hardware is ‘CHEAP’ compared to rigging out people with toughbooks or laptops
  • iPads/iPhones are almost “disposable”
– Polished user interface
  • Use Apple’s controls
  • Intuitive
– Instant Edits

Cons

– Do need ArcGIS Server
– iOS API only works on apple devices
– Security
– 3G / Wireless Connectivity (Unless you code for it*)
<Targeted Apps......../>
<...........Using Targeted Maps/>
<Templates – So you’re not a Developer>

- ArcGIS Mobile
- iOS
- Android
- Windows Mobile
ArcGIS Online
• Geoprocessing Tools
Thank you!!!

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