

Cadastre 2.0

technology vision for cadastre of the future

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Land Administration

Land administration is the process of determining, recording, and disseminating of information about ownership, value and use of land when implementing land management policies.

Source: UN/ECE Land Administration Guidelines 1996

Ownership

Value

Use



LIS

Planning

Development

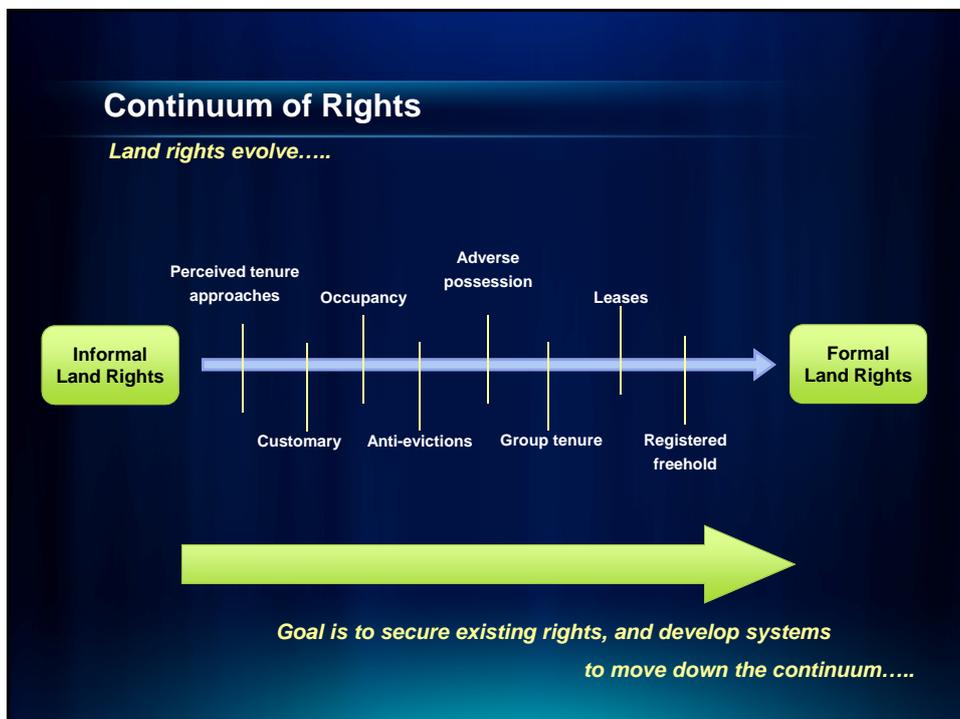
Sustainability

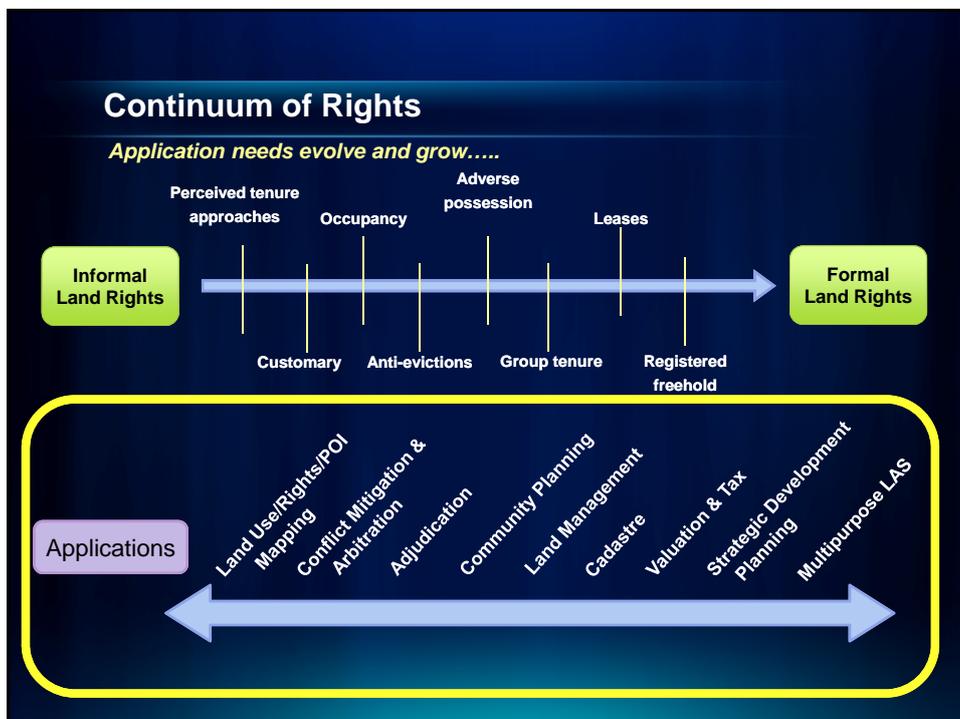
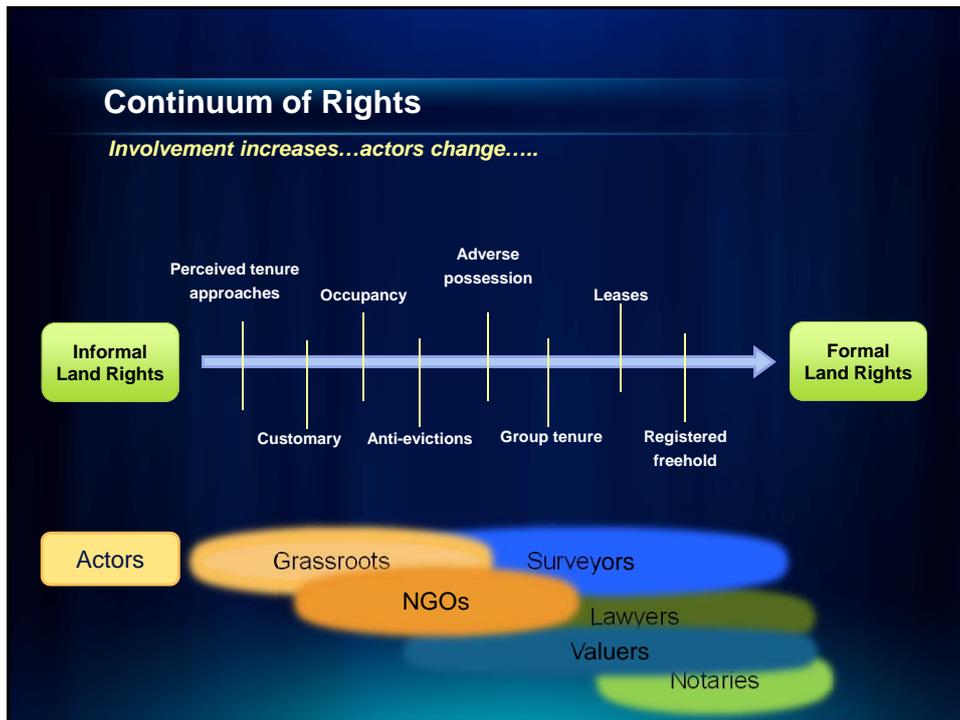
Tenure Security

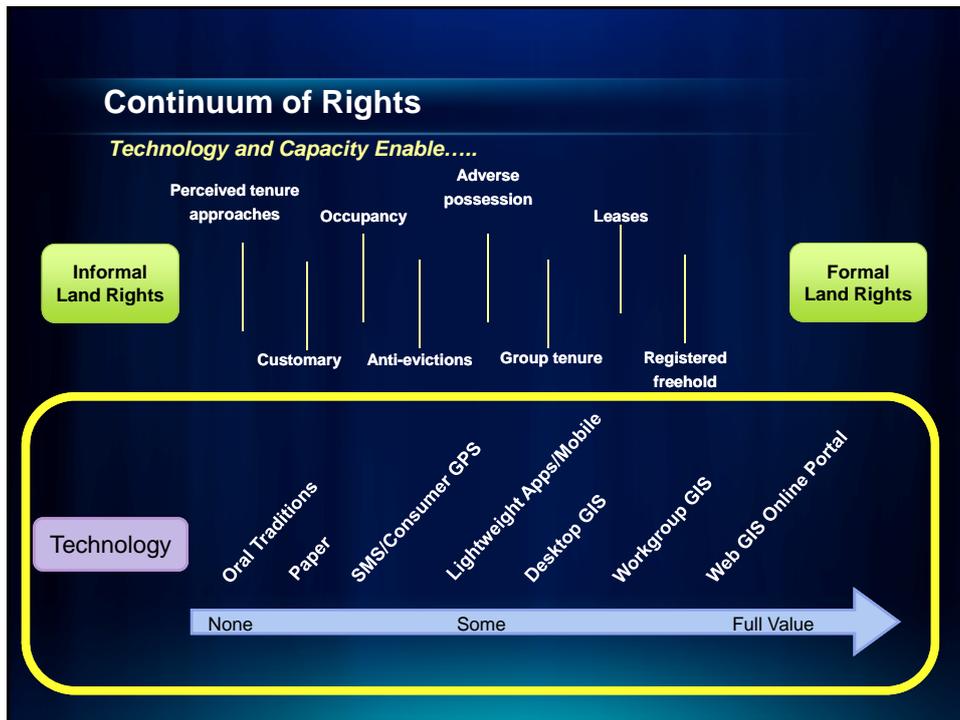
Spatial Data Management

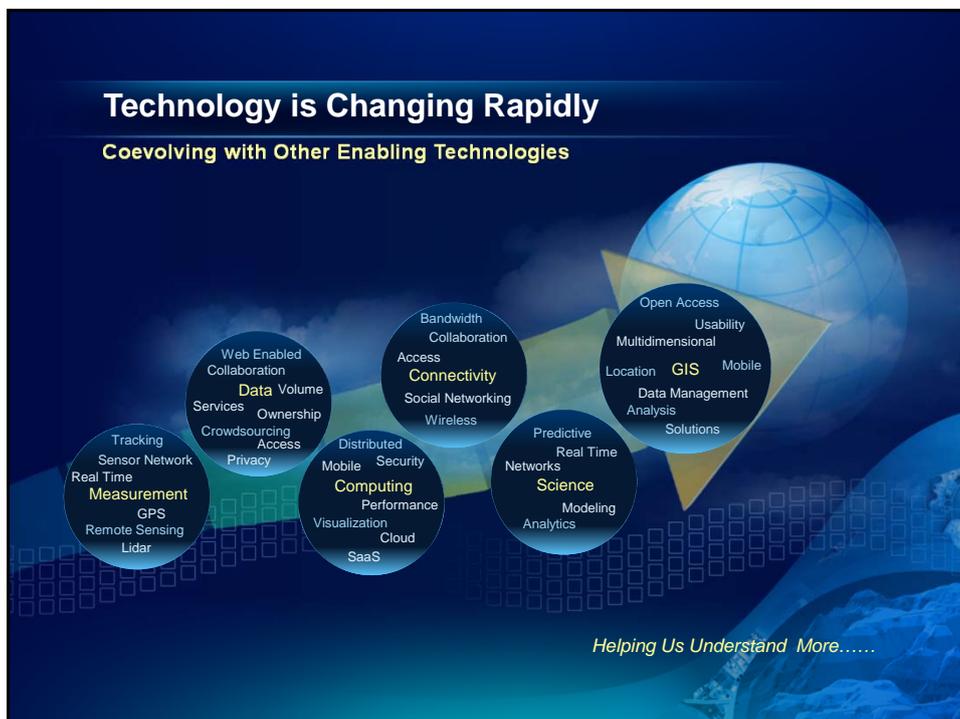
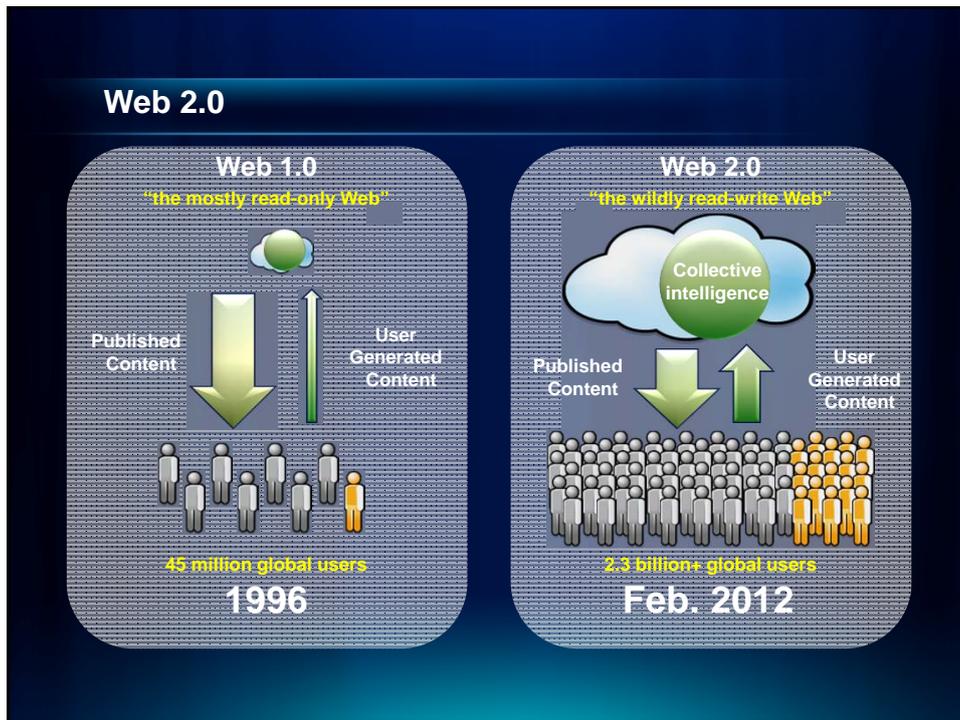
Land Administration

GIS is key to good Land Administration.....





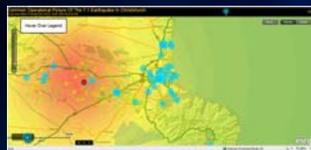




VGI

Volunteered Geographic Information.....

- Mapping
- Proving Use/Value
- Sharing Information
- Deed Wiki
- Encroachment
- Post Conflict/Disaster
- Occupancy/Validity

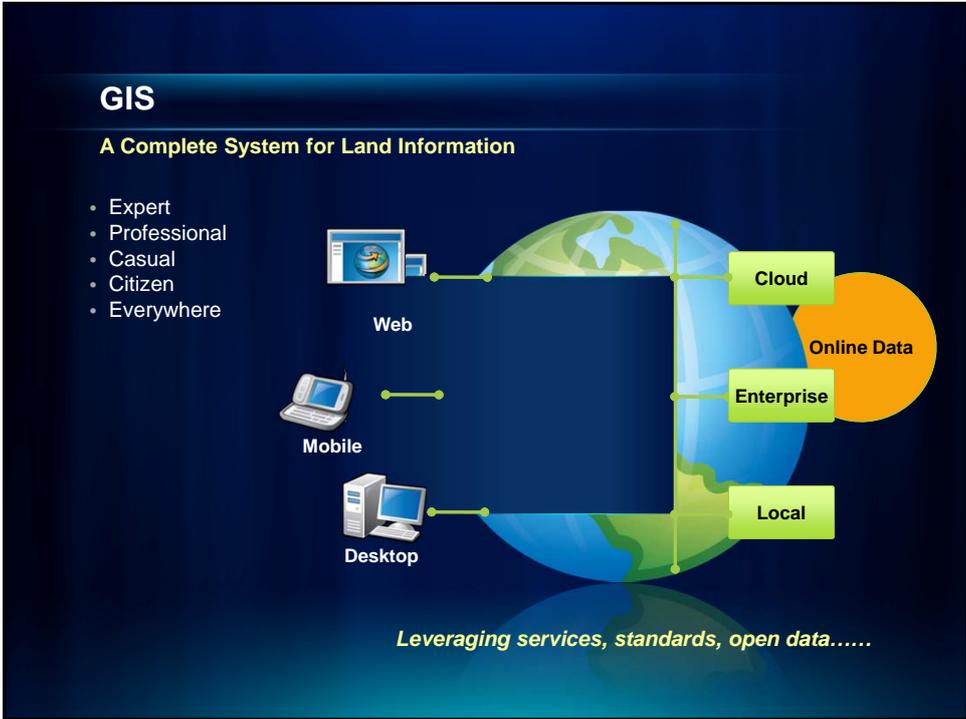


Mobile Computing

- Device independent
- Multiple platforms
- New types of users
- Full connectivity to office/cloud data
- Cache when not connected



Requires flexible technology framework.....



Build with End Goal in Mind

We Need a Broader Approach



Land Management
Development
Planning



Valuation
Survey
LIS



Sustainability
SDI
Citizen Engagement



Cadastre provides value to countless activities.....

Technology Has Evolved, and Will Continue

1989–2012

Hardware

```

graph LR
    A[Mini Computers] --> B[Workstations]
    B --> C[PC/Client/Server]
    C --> D[Web/Cloud]
        
```

Software

```

graph LR
    A[Tools and Data] --> B[Database + Custom Apps & Workflows]
    B --> C[COTS Solutions Workflows & Data Models]
    C --> D[Web Services Access]
        
```

Skills

```

graph LR
    A[Technical Specialists] --> B[Domain Professionals]
        
```

*... It Is Now Possible to Deploy a Countrywide System
... And Make Maps and Apps Available to Everyone*

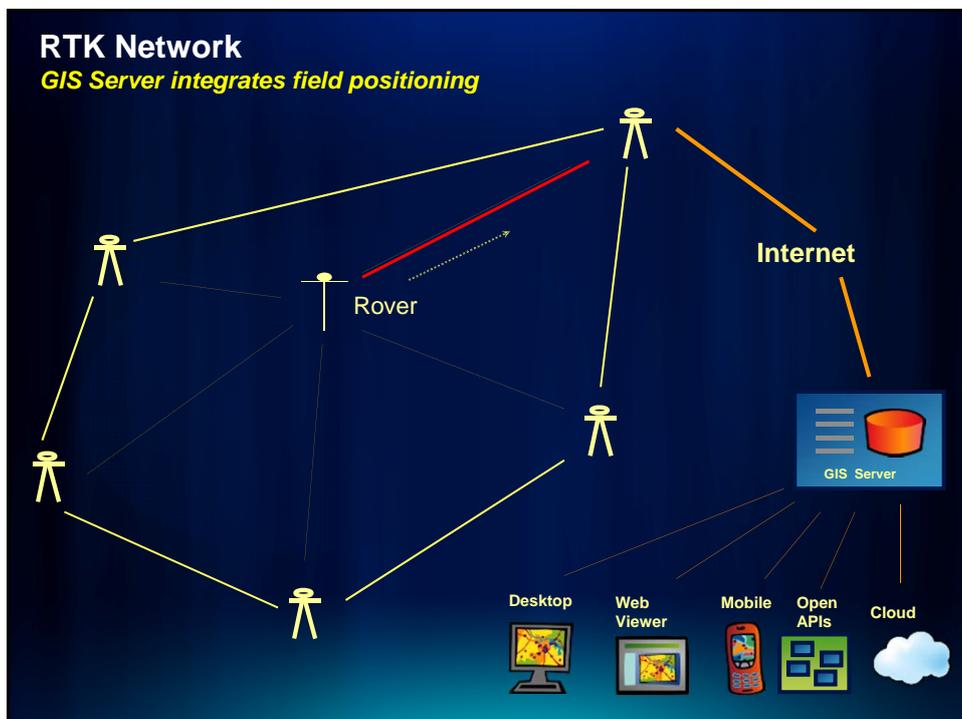
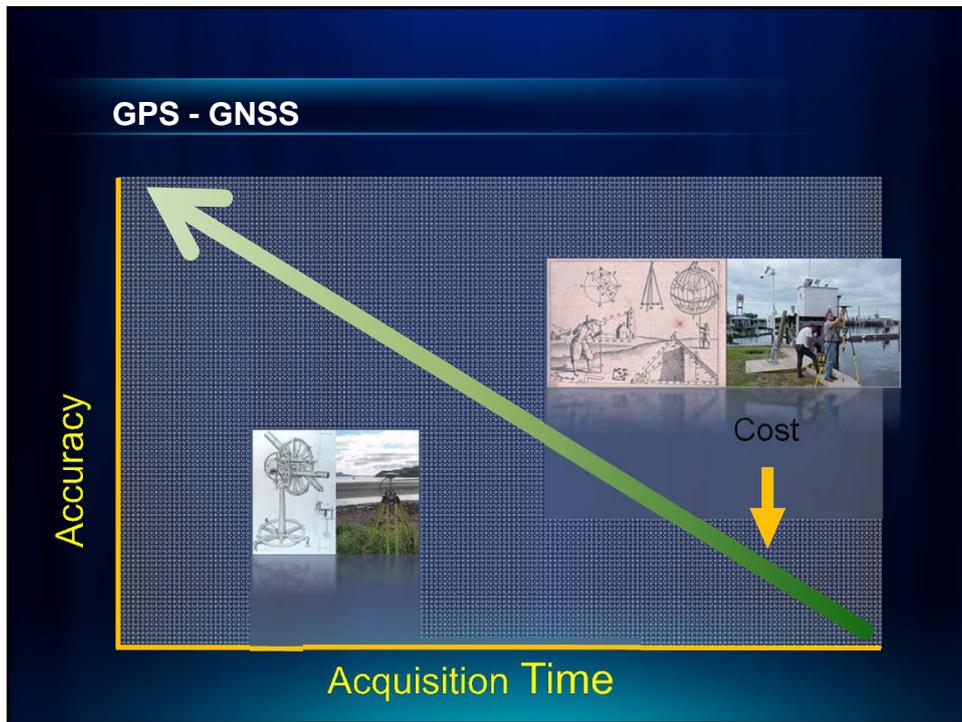


Types of Data Accuracy

Measures of data correctness

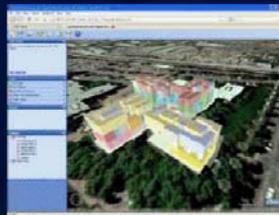
- **Topological** – how features relate to each other
- **Attribute** – non-graphical information about features
- **Absolute Spatial** – nearness to the true position
- **Relative Spatial** – how accurate relative to each other
- **Temporal** – how current is it
- **Feature Identification** – is it what we say it is

. . . not all from the same place, not all have equal importance on the continuum.....



3D Cadastre

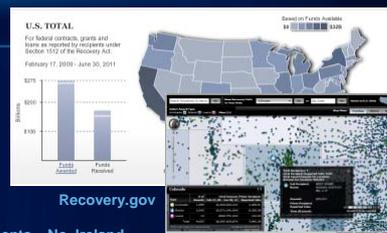
- Urbanization
- New forms of ownership
- New requirements
- Easements
- Mineral Rights
- Physical/Legal space



Transparency

Definition: *Easy to perceive or Detect....*

- Open
- Accessible
- Current
- Accurate
- Useful
- Complete



Recovery.gov
Government Investments - No. Ireland



Government Portals



Cultural Sites - Norway



Economic Development
South Korea



Lombardy, Italy

Data.gov, USA

Geodata.gov

Accountability

Definition: *Responsible for Actions....*

- Accessible
- Current
- Meta data
- Relevant
- Complete
- Feedback

Stimulus
and Jobs
Creation

Florida



Dam Failure



Luzon, Philippines

Government
Expenditures



Maryland

TARP Mapping



United States

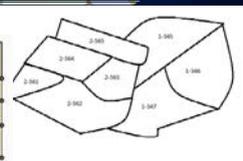
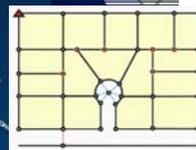
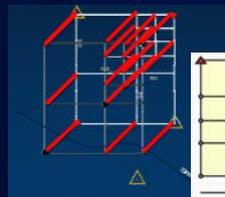
School Evaluation



Abu Dhabi

Ongoing Data Quality Improvement

- Parcel Fabric
- Feature-level Meta data
- Structured Workflow
- Begin with What You Have

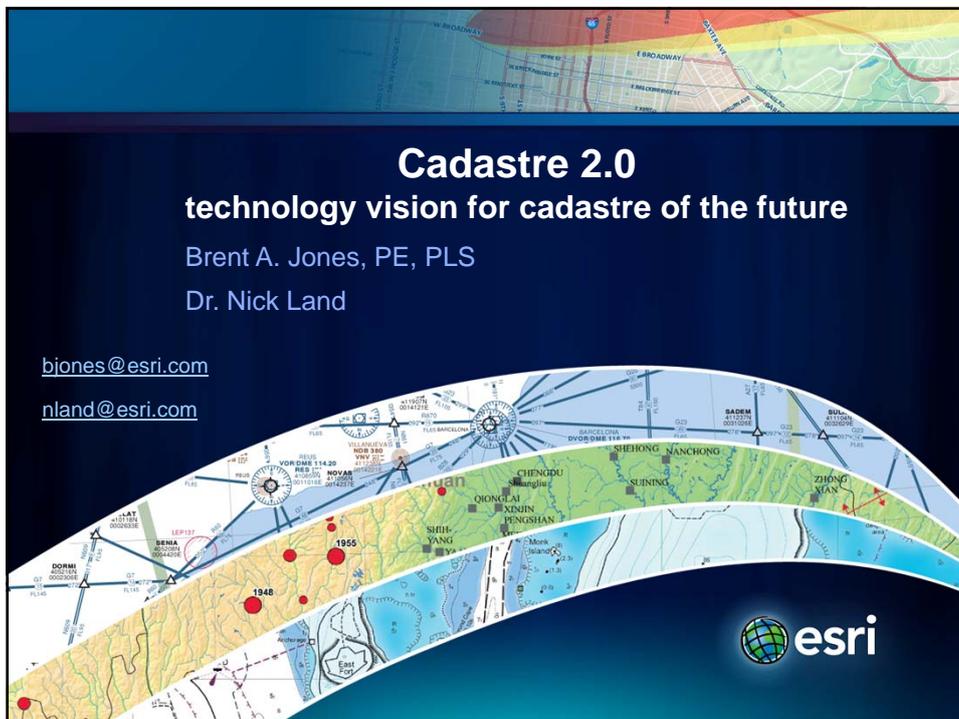


Cadastre 2.0

Evolving Demands, Evolving Requirements, Evolving Technology

- Multipurpose
- Transparent
- Accountable
- Citizen Engagement - VGI
- Mobile
- Spatial Data Infrastructure - SDI
- 3D
- Cloud Computing
- Online Data
- Ongoing Data Quality Improvement

... Leveraging technology, open standards and open data.....



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