

GeoImagery : *A New Paradigm for GeoInformatics*

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We Live in a Rapidly Changing World

Increasingly Driven by Population Growth & Human Action

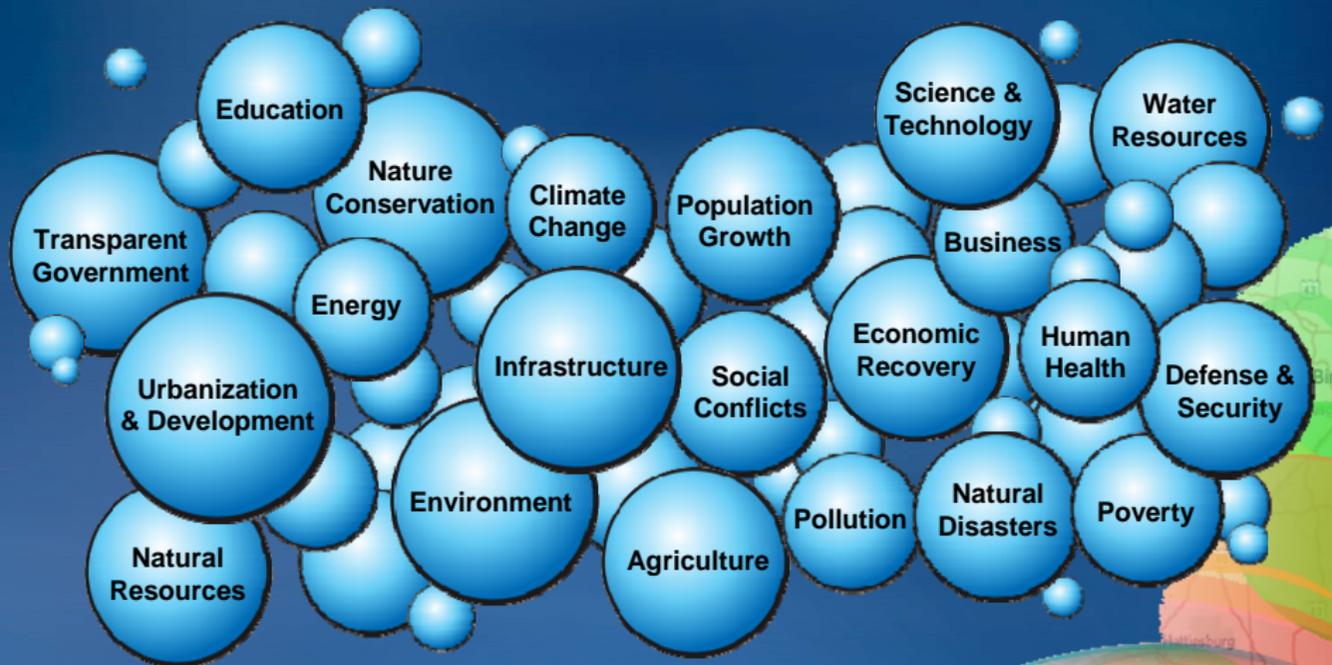
Impacting the Natural World

- Climate - Global Warming
- Biodiversity
- Natural Resources
- Energy
- Economy
- Security



*Challenges Sustainability . . .
. . . For All of Us*

The Challenges We Face Are Numerous and Complex :



... Requiring an Information Infrastructure
... For Creating a Sustainable Future

GIS Is Providing an Integrated System

For Working with Maps, Imagery and Geographic Information . . . Changing

How We Collaborate . . .



Shared Geographic Knowledge

How We Communicate . . .



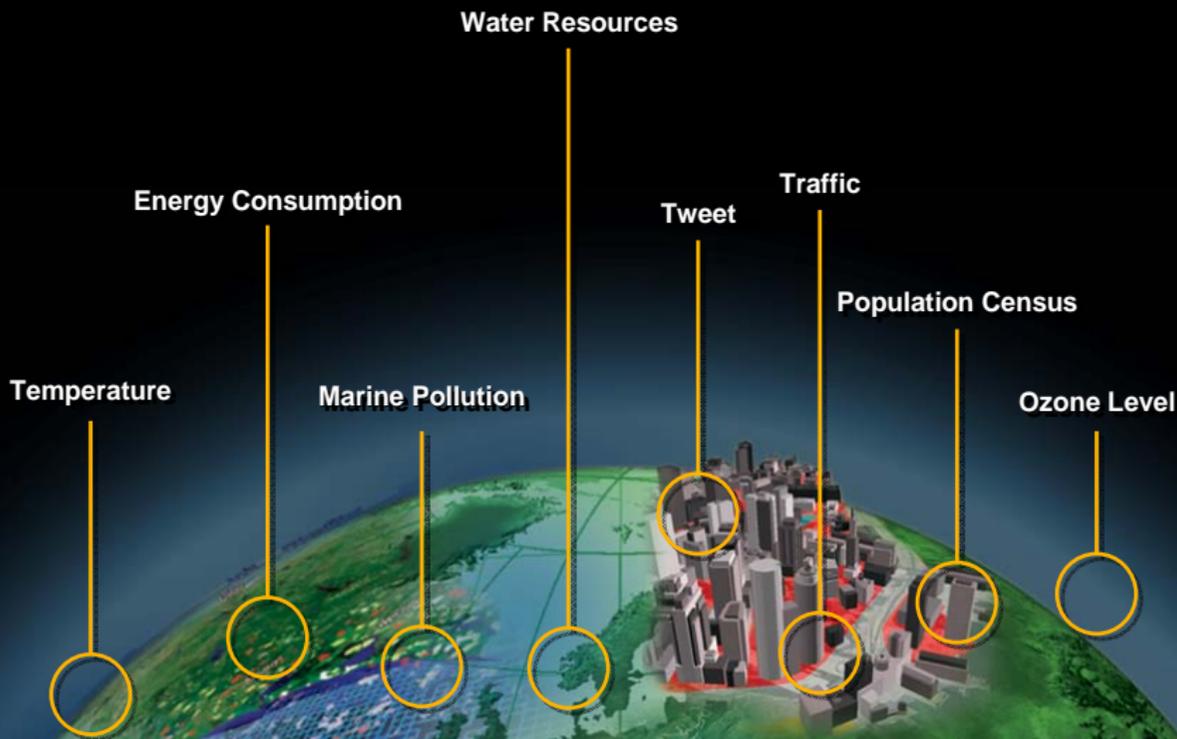
A Geospatial Language

How We Organize & Reason . . .



Spatially Integrated Thinking

. . . Providing a Platform for Integration And Management



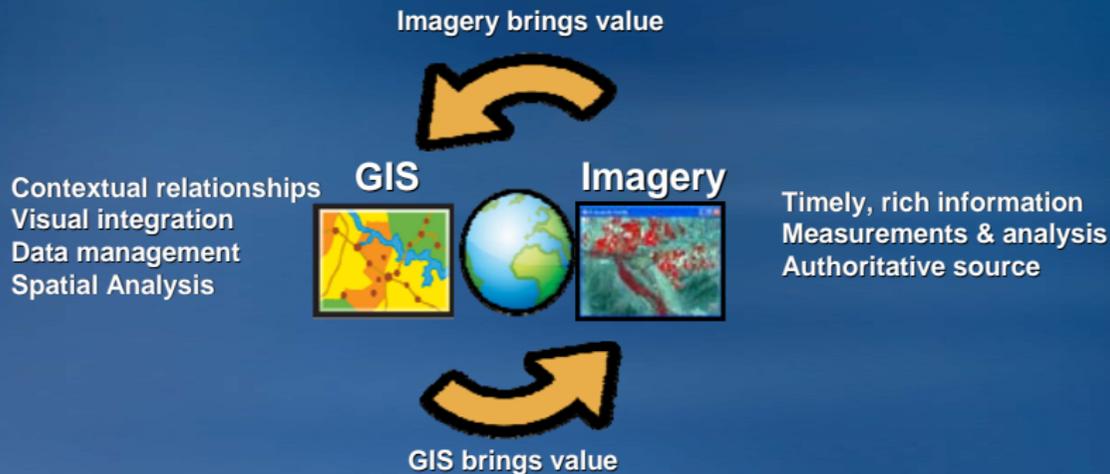


Applications Demonstrate The Value Of Geospatial / GIS



Imagery is Core to GIS

Two Sides of the Same Coin

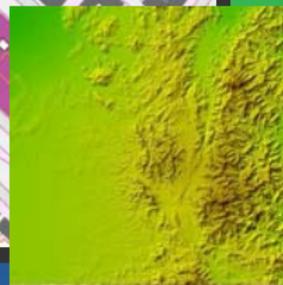


Increasing the value of Imagery

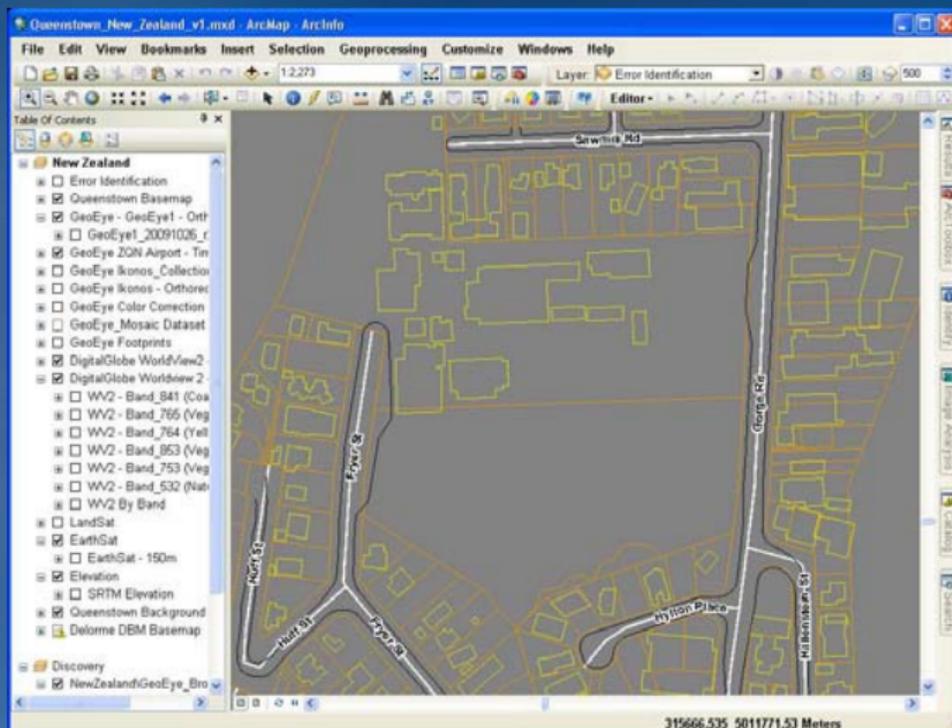
The Importance of Imagery

Many uses:

- Natural background
- Direct interpretation
- Statistics and analysis
- Source of most vector maps
- Verification of analysis results
- A near real-time data source

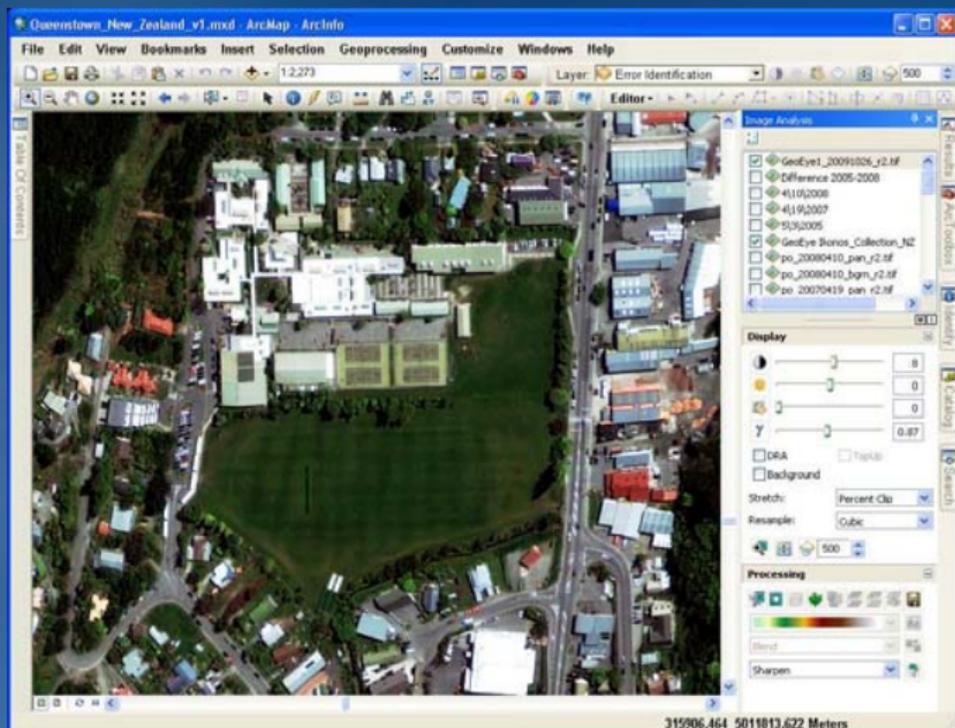


Queenstown Parcels, Buildings, Streets



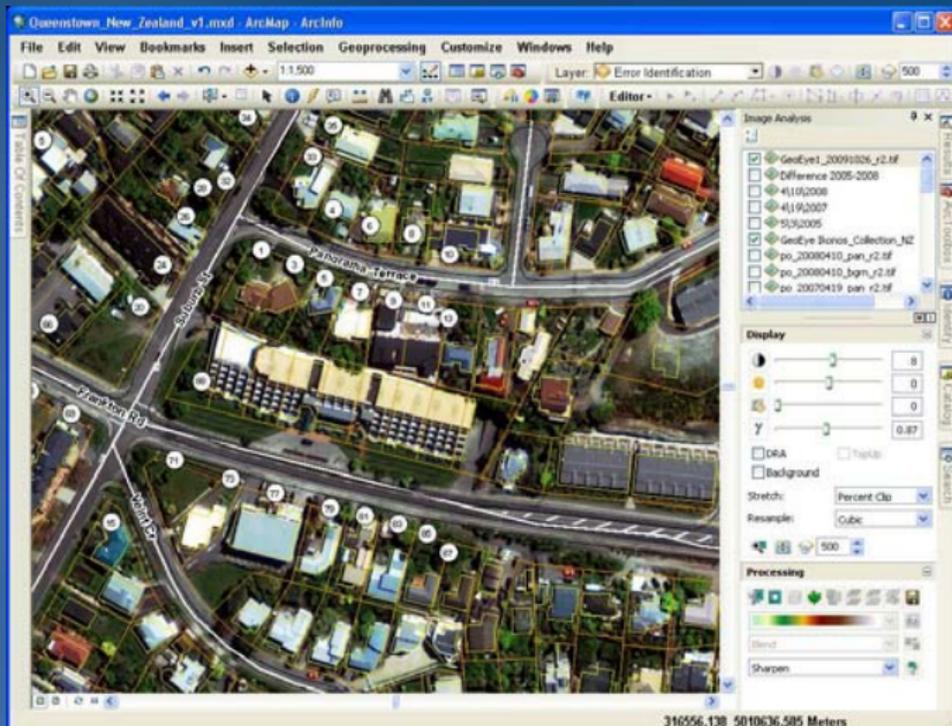
GeoEye 1 Imagery

Contrast Adjusted



GeoEye 1 Imagery

Accelerated Roaming Performance with Vector Basemap



Applications

Outdated Building Footprints

The screenshot displays the ArcMap interface for a project named "Queenstown_New_Zealand_v1.mxd". The main map area shows an aerial view of Queenstown, New Zealand, with yellow outlines highlighting building footprints. The Table of Contents on the left lists the following layers:

- New Zealand
 - Error Identification
 - Queenstown Basemap
 - GeoEye - GeoEye1 - Orth
 - GeoEye1_20091026_r
 - GeoEye ZQN Airport - Tin
 - Difference 2005-2008
 - 4/10/2008
 - 4/19/2007
 - 5/3/2005
 - GeoEye Ikonos_Collection
 - GeoEye Ikonos - Orthorec
 - GeoEye Color Correction
 - GeoEye_Mosaic Dataset
 - GeoEye Footprints
 - DigitalGlobe WorldView2
 - DigitalGlobe Worldview 2
 - W/2 - Band_B41 (Coa)
 - W/2 - Band_765 (Veg)
 - W/2 - Band_764 (Yell)
 - W/2 - Band_853 (Veg)
 - W/2 - Band_753 (Veg)
 - W/2 - Band_532 (Nat)
 - W/2 By Band
 - LandSat
 - EarthSat
 - EarthSat - 150m
 - Elevation
 - SRTM Elevation
 - Queenstown Background

The status bar at the bottom indicates the coordinates: 317545.457 5011250.297 Meters.

Applications

Identification of Parcels to Re-Assess

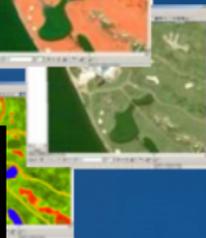
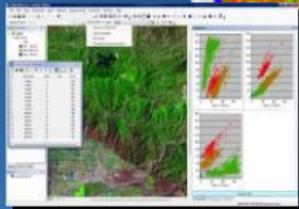
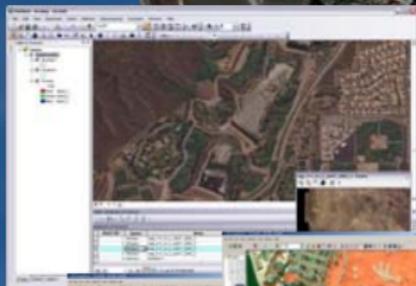
The screenshot displays the ArcMap interface for a project titled "Queenstown_New_Zealand_v1.mxd". The main map area shows an aerial view of a residential area with parcel boundaries overlaid in orange. The Table of Contents on the left lists the following layers:

- New Zealand
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 - GeoEye ZQN Airport - Tin
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 - W/2 By Band
 - LandSat
 - EarthSat
 - EarthSat - 150m
 - Elevation
 - SRTM Elevation
 - Queenstown Background

The status bar at the bottom right indicates the coordinates: 317789.636 5011251.094 Meters.

Maximizing the Value of Imagery

- **Providing Image Accessibility:**
 - **Timely**
 - Value is highest when new
 - **Quickly**
 - Fast display
 - **Accurately**
 - Correct location and metadata
 - **Collectively**
 - To all users that need it
- **Exploiting Rich Information Content:**
 - **Resolution**
 - Use full spatial content with maximum quality
 - **Temporal change**
 - Enable time control
 - **Spectral range**
 - Utilize multiple bands
 - **Dynamic range**
 - Utilize sensor sensitivity

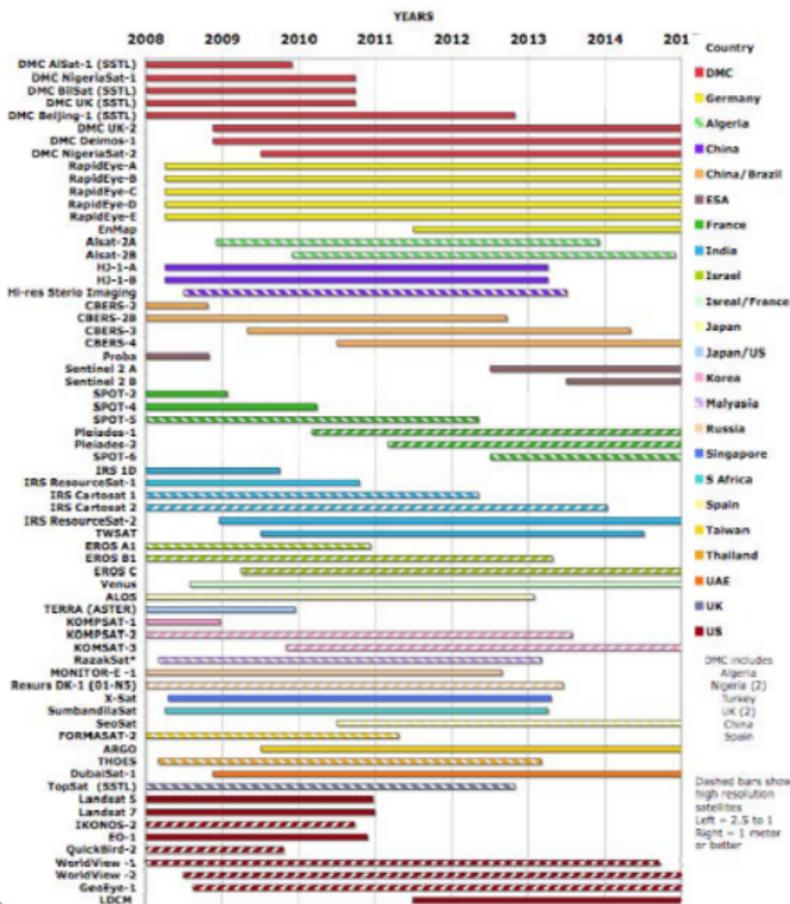


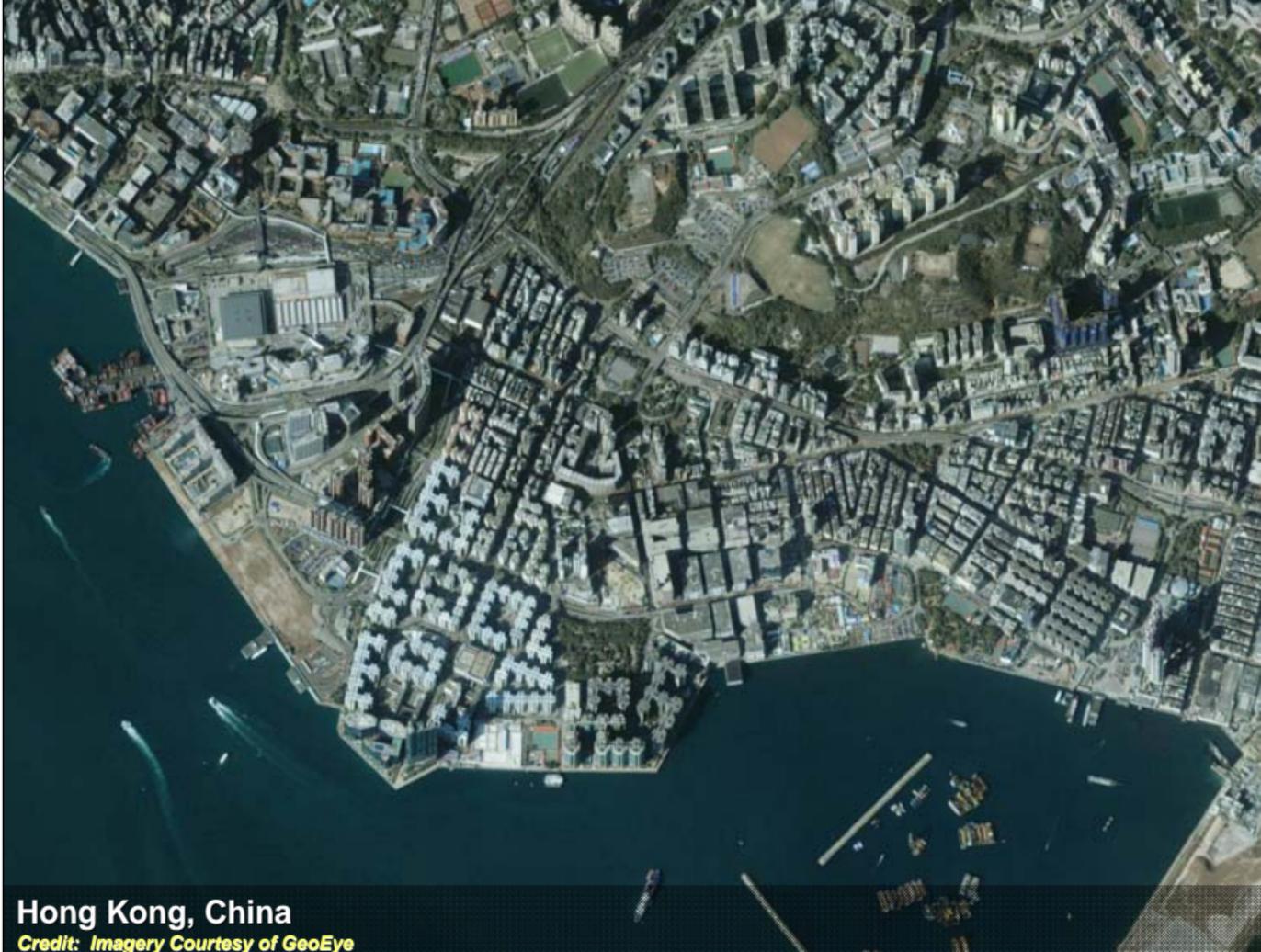
Imagery Processes



A platform for users and partners to build on

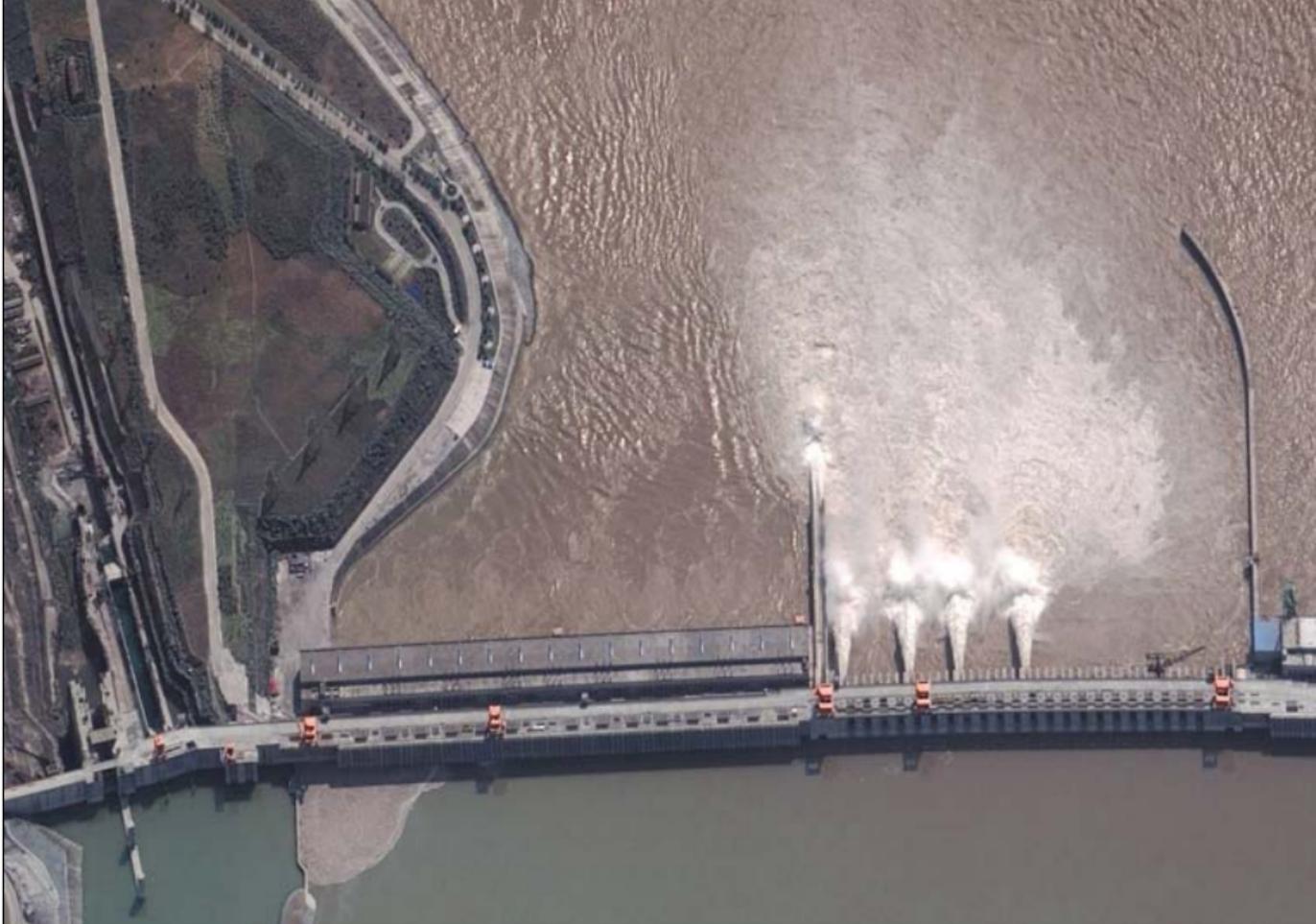
OPTICAL SATELLITE SCHEDULES





Hong Kong, China

Credit: Imagery Courtesy of GeoEye



Three Gorges Project, China

Credit: Imagery Courtesy of Digital Globe

Puente Rosario - Argentina





River Thames, London, England, UK

Credit: Imagery Courtesy of GeoEye

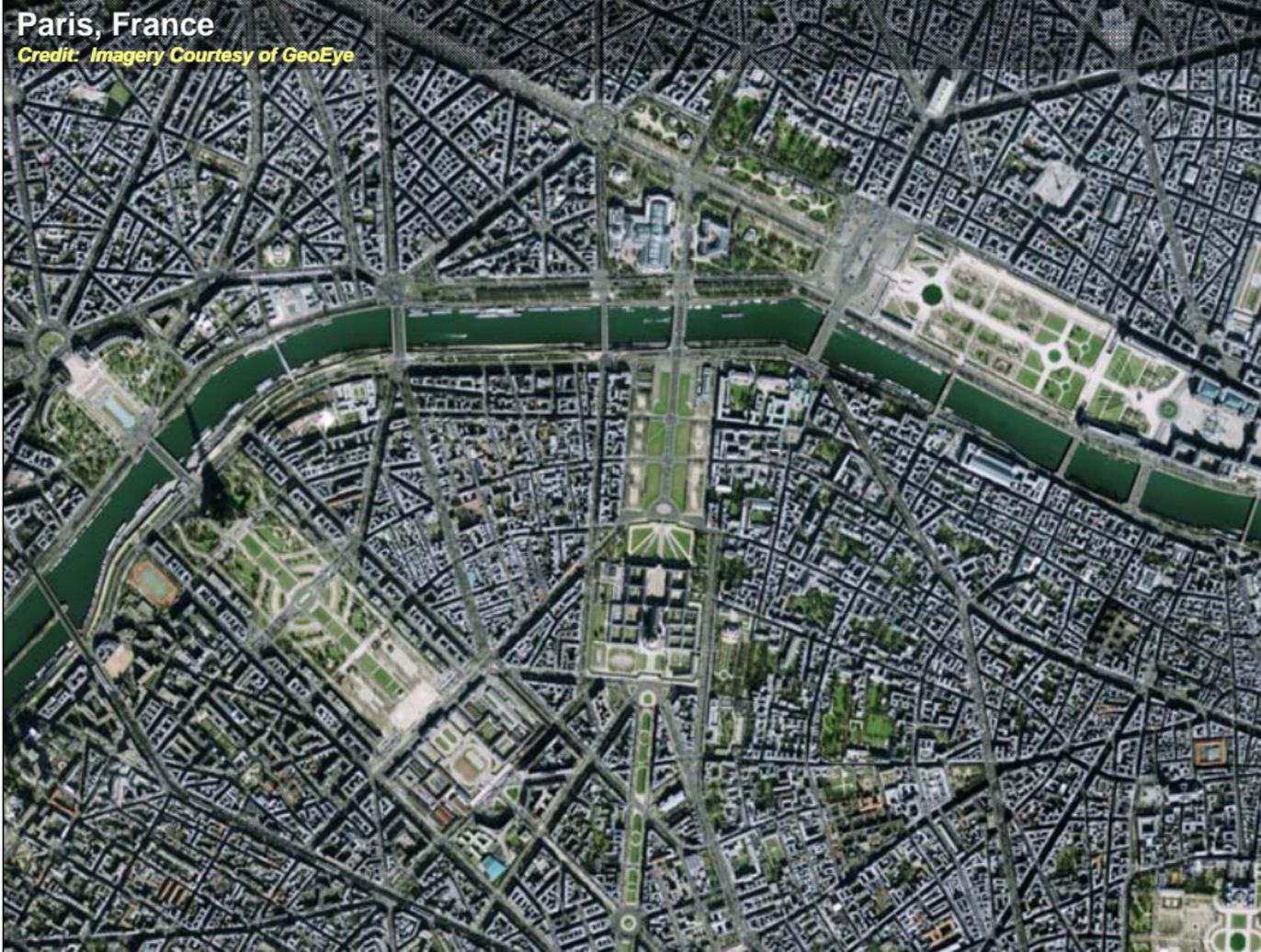


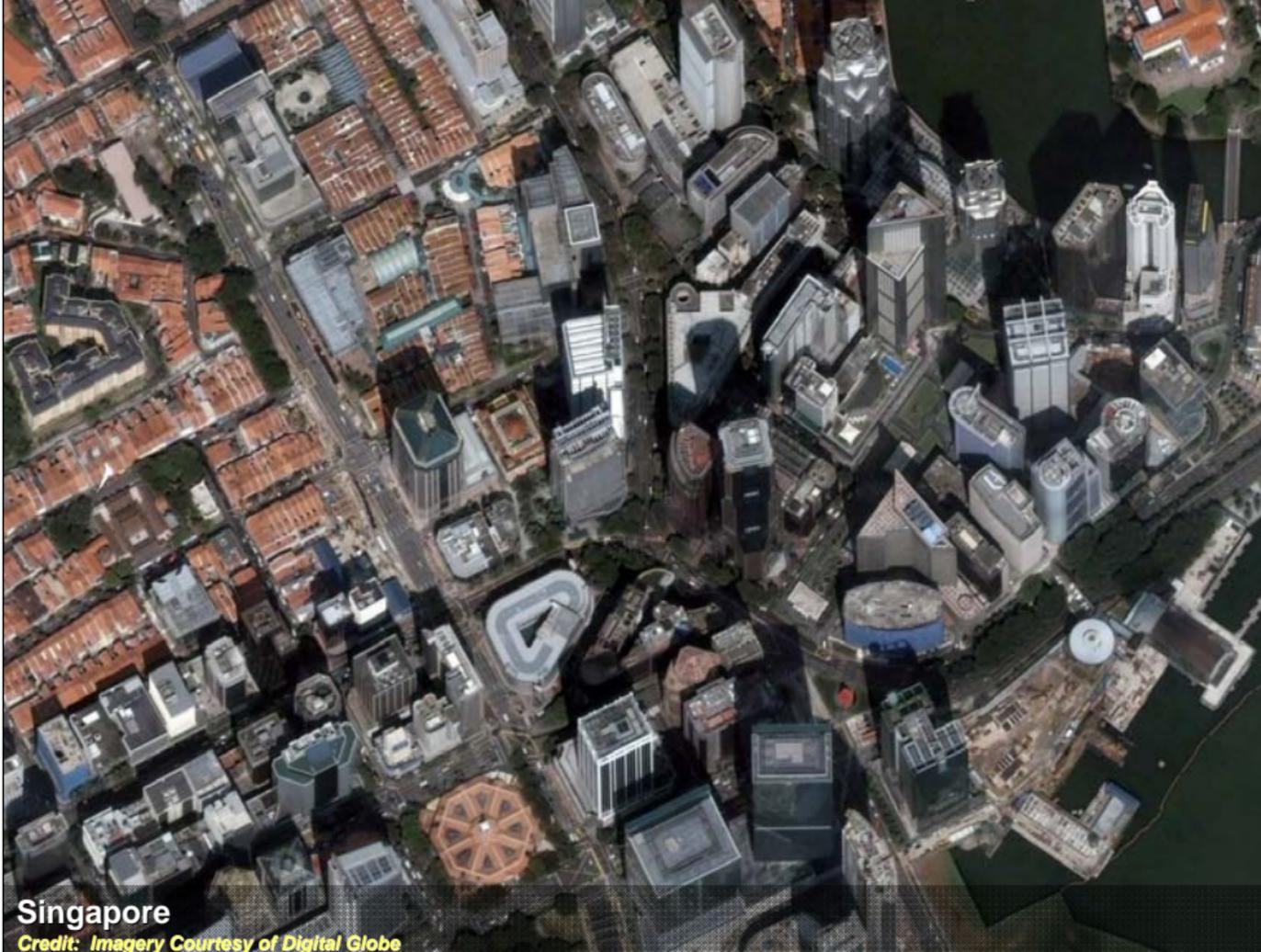
Beijing Tower, China

Credit: Imagery Courtesy of Digital Globe

Paris, France

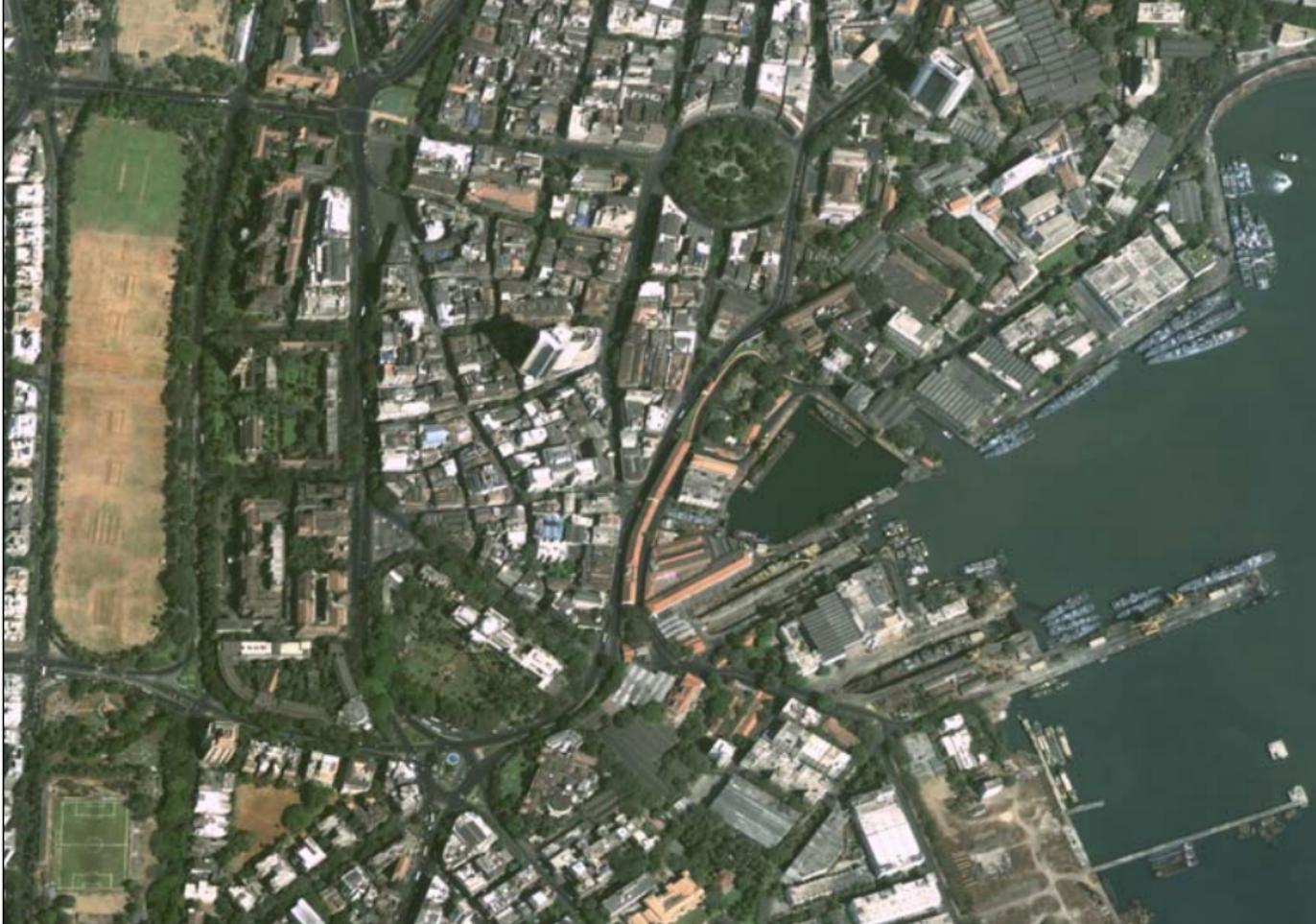
Credit: Imagery Courtesy of GeoEye





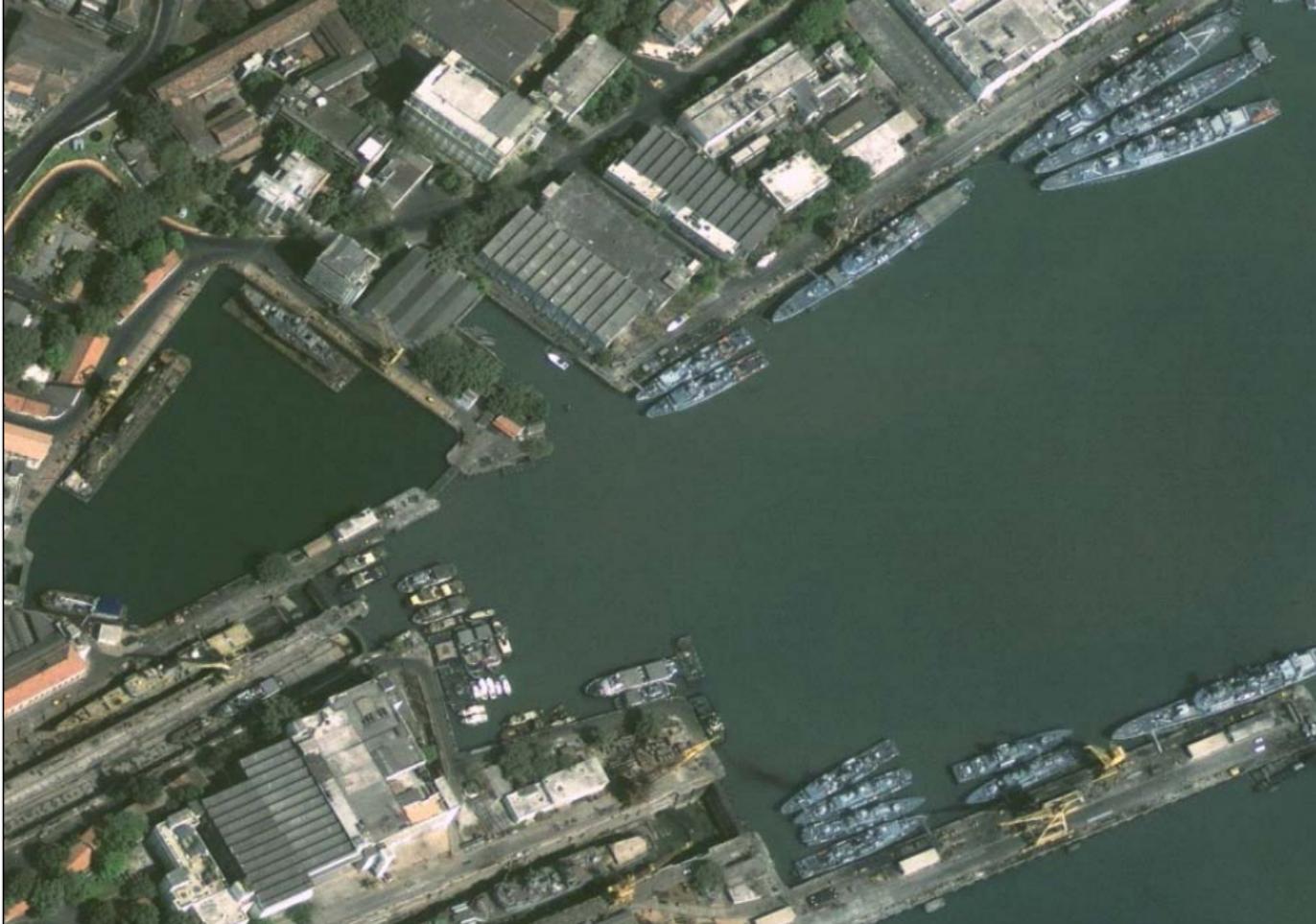
Singapore

Credit: Imagery Courtesy of Digital Globe



Mumbai, India

Credit: Imagery Courtesy of GeoEye



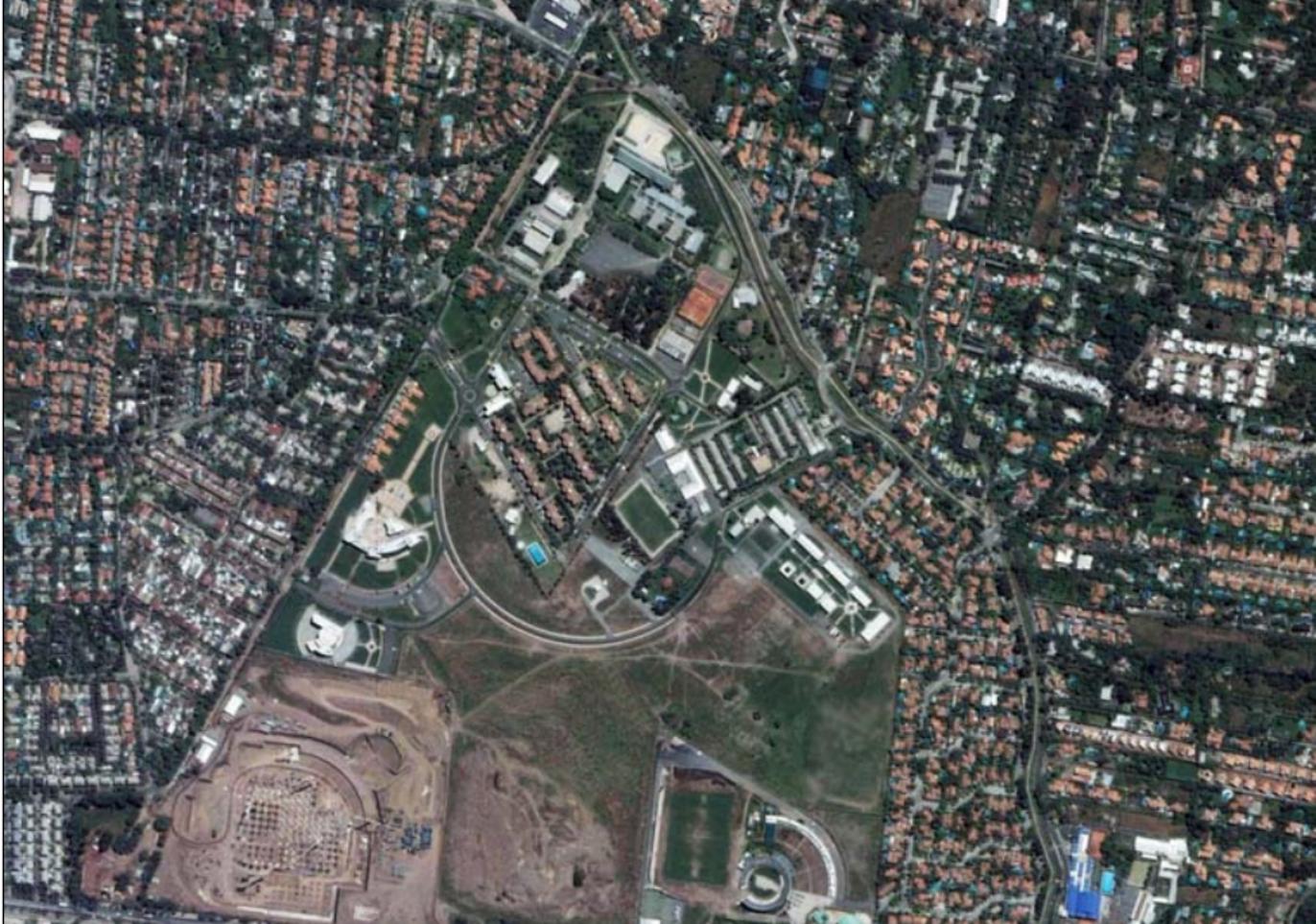
Mumbai, India

Credit: Imagery Courtesy of GeoEye



Bogota, Columbia

Credit: Imagery Courtesy of Digital Globe



Bogota, Columbia

Credit: Imagery Courtesy of Digital Globe



Bogota, Columbia

Credit: Imagery Courtesy of Digital Globe

Two and a Half Minutes Over Beijing, China

WorldView 1 Dwell-Imaging Test

July 12, 2008





**TECHNICALLY
WHAT'S NEXT**

GIS Is Changing – Becoming Web and Services Focused

Richer, Easier and More Pervasive

New Styles, Patterns and Techniques



New Services



New Media



Making GIS Easy and Accessible

A New GIS Is Emerging

Easier, Accessible and Collaborative

Enabled By

- Cloud Architecture
- Web Services
- Information Integration
- Crowd Sourcing
- Open Data Sharing



*Empowering the GIS Professional . . .
And the Broader Community*

The Next Big Step : Geospatial Information for Everyone

Easier, Faster, More Powerful and Everywhere

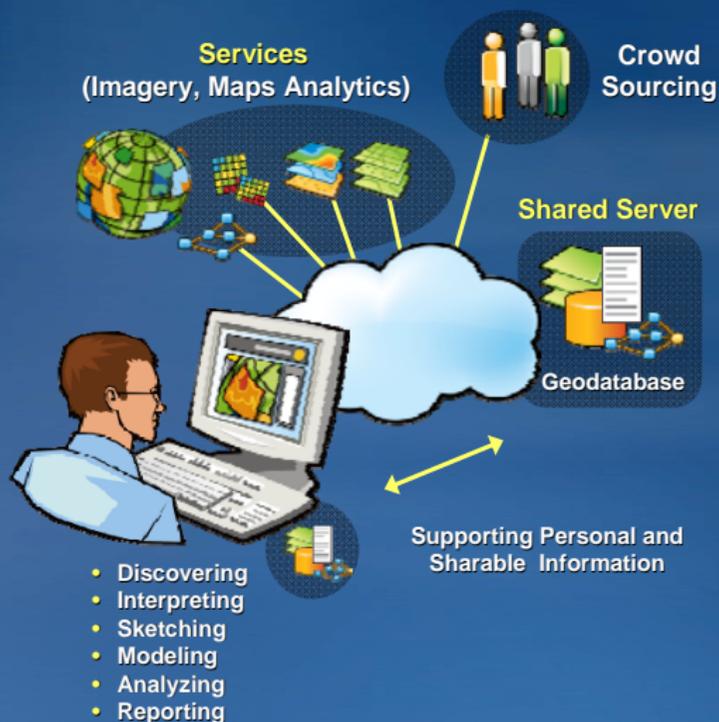
Making GIS Relevant to Everyone



Transforming GIS

Geo-enabled Collection, Analysis and Management System

Transactionally Maintaining a Geodatabase of Spatial Information



Benefits

- Integration
- Collaboration
- Fast Analysis
- Accessible
- Retained
- Reusable

- Text
- Maps
- GIS Overlays
- Images
- All Source
- Other

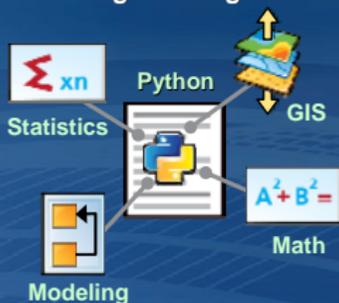
Hundreds of Improvements

Making GIS Easier and More Productive

Fast Display



Integrated Scientific Programming

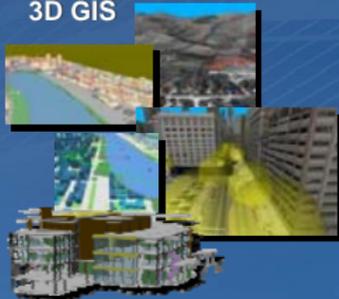


Easier Editing & Sketching



Crowd Sourcing

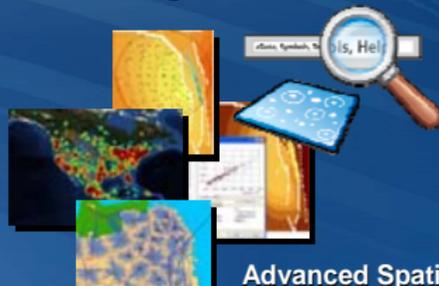
3D GIS



Time Aware



Integrated Search



Advanced Spatial Analysis

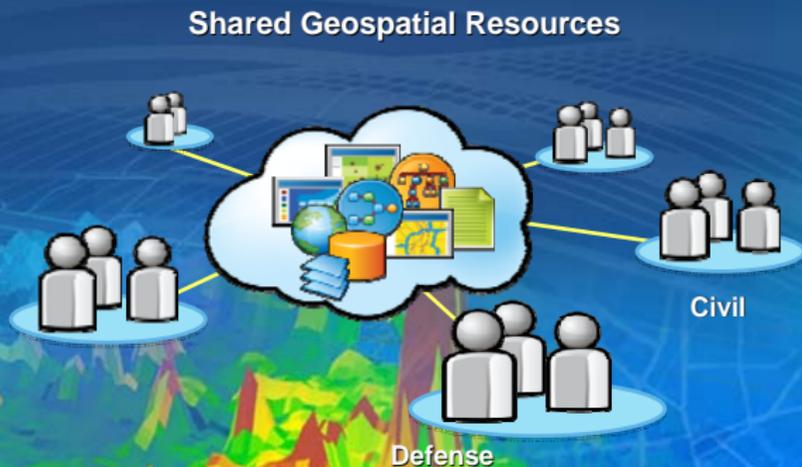
Agencies Are Creating Geo-Services

Moving from Data Sharing

To Shared Services (Maps, Models, Data . . .)

Moving from "Need to Know"... to "Need to Collaborate"

- RESTful Services
- Easily Discovered
- Open Standards Based
- Easy-to-Use Clients
- Customizable (API's)



*Providing Access to Many New Users
... Enabling a New Kind of Sharing*

Creating Services

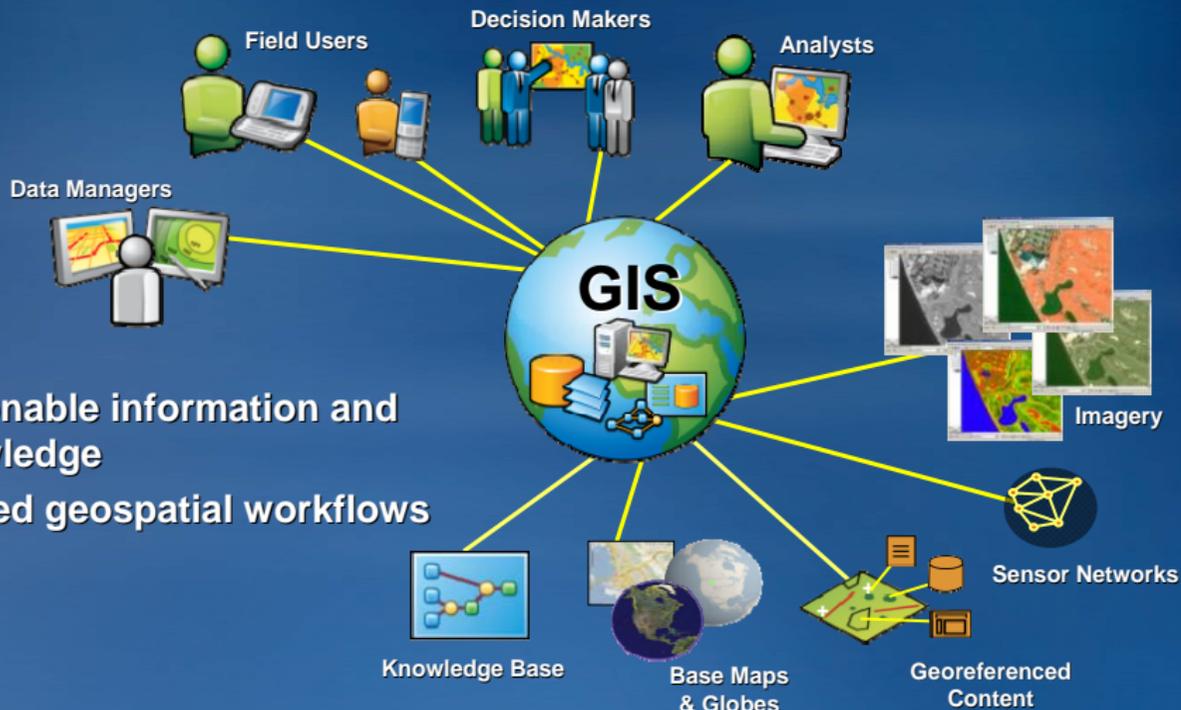
Sharing Geographic Knowledge Everywhere

- Authoritative Data
- High Quality Maps
- Analysis and Models
- Rich Applications



*Leveraging These Services . . .
. . . To Serve Multiple Users*

GIS and Imagery - Integrated and Accessible



- Actionable information and knowledge
- Unified geospatial workflows

We Are Creating A Future We **Can't Predict** . . .

With Little Regard for the Consequences

Geoinformatics and Geolmagery Can Change That
. . . Creating a More Sustainable World

This Will Require Geospatial Professionals . . . To Be More Involved

Creating New Ways of Doing Things,
Experimenting . . .

Inventing Our Future . . .

“The best way to predict the future is to invent it.”





Thank You

