



**Imágenes de Alta Resolución**  
**Eric Hansen - DigitalGlobe**



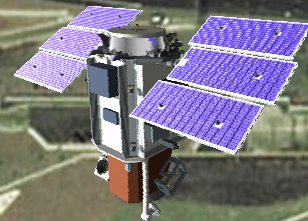
DIGITALGLOBE<sup>TM</sup>



QuickBird Imagery  
Ottawa, Canada



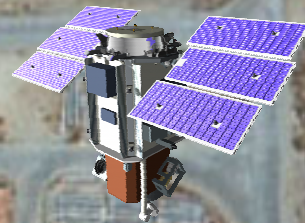
DIGITAL GLOBE<sup>TM</sup>



**QuickBird Imagery**  
**The Pentagon**  
**Washington, D.C. USA**



DIGITALGLOBE



QuickBird Imagery  
Bushehr Nuclear Power Complex, Iran





DIGITALGLOBE™

QuickBird Imagery  
Port of Hamburg  
Hamburg, Germany



- DigitalGlobe – Ejemplo de Alta Resolucion
- Importancia de Alta Resolucion para el Gobierno
- Aplicaciones de Imagenes de Alta Resolucion





# DigitalGlobe

## An Imaging and Information Company

---



- **The Company**

- Started in 1995 as Worldview,  
DBA DigitalGlobe (March 2001)
- Headquarters in Longmont, Colorado
- 250 Employees (and growing)
- Ball Aerospace built QuickBird

- **Business Strategy**

- Sub-meter resolution Satellites
- Serve the Worldwide GIS Data Services Market
- Global Partnerships

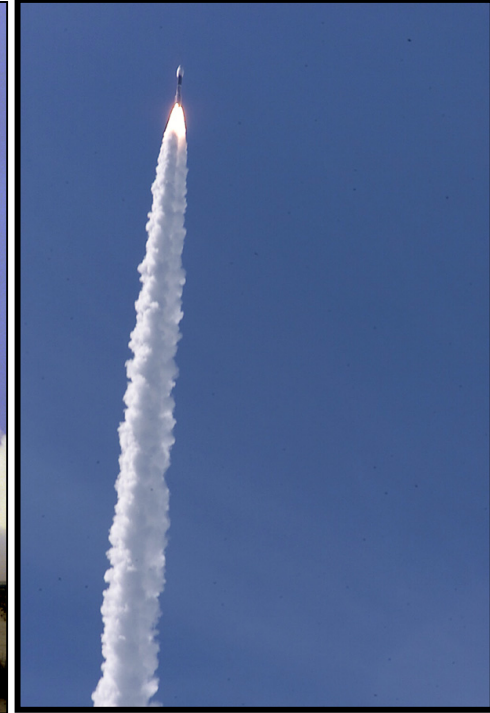




# QuickBird Satellite



QuickBird II – June 2001

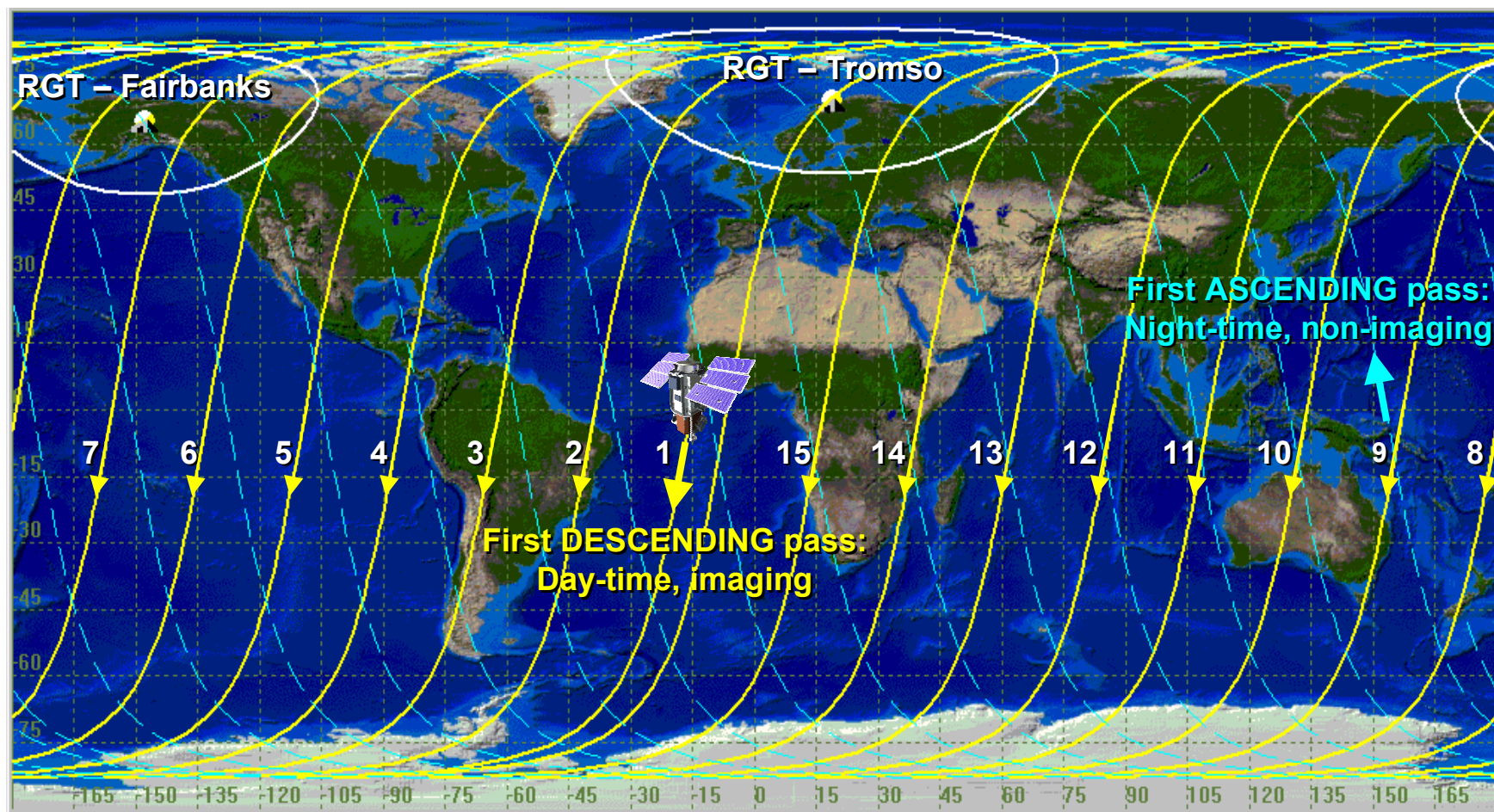


Launched - Oct. 18, 2001

**Start of Operations: April 1, 2002**



# QuickBird Ground Tracks

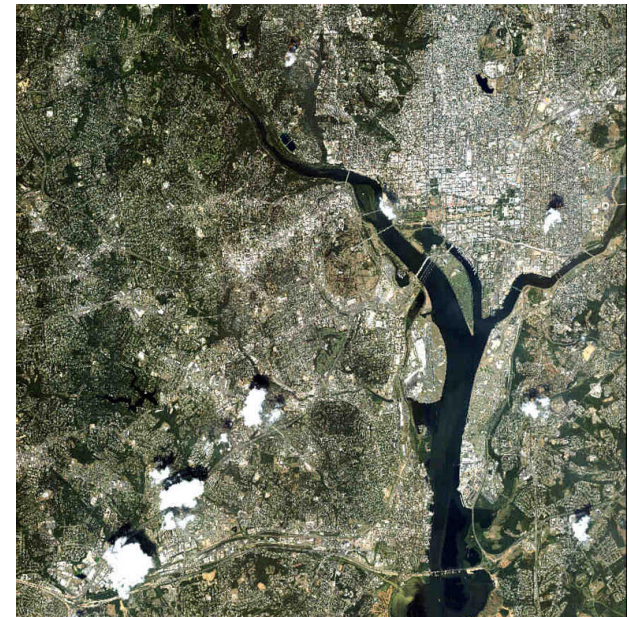


QuickBird takes 93.6 minutes to orbit the Earth once



# QuickBird – Highest Resolution

- 60 - 70cm pancromatic
- 2.44 – 2.80m multispectral
  - 450-520 nm (azul)
  - 520-600 nm (verde)
  - 630-690 nm (rojo)
  - 760-900 nm (near IR)
- Capacidad de coleccion:
  - ~57 scenes por orbita
  - ~70 million km<sup>2</sup> por ano
- 8 anos de vida, ~2100 lbs, 3m length





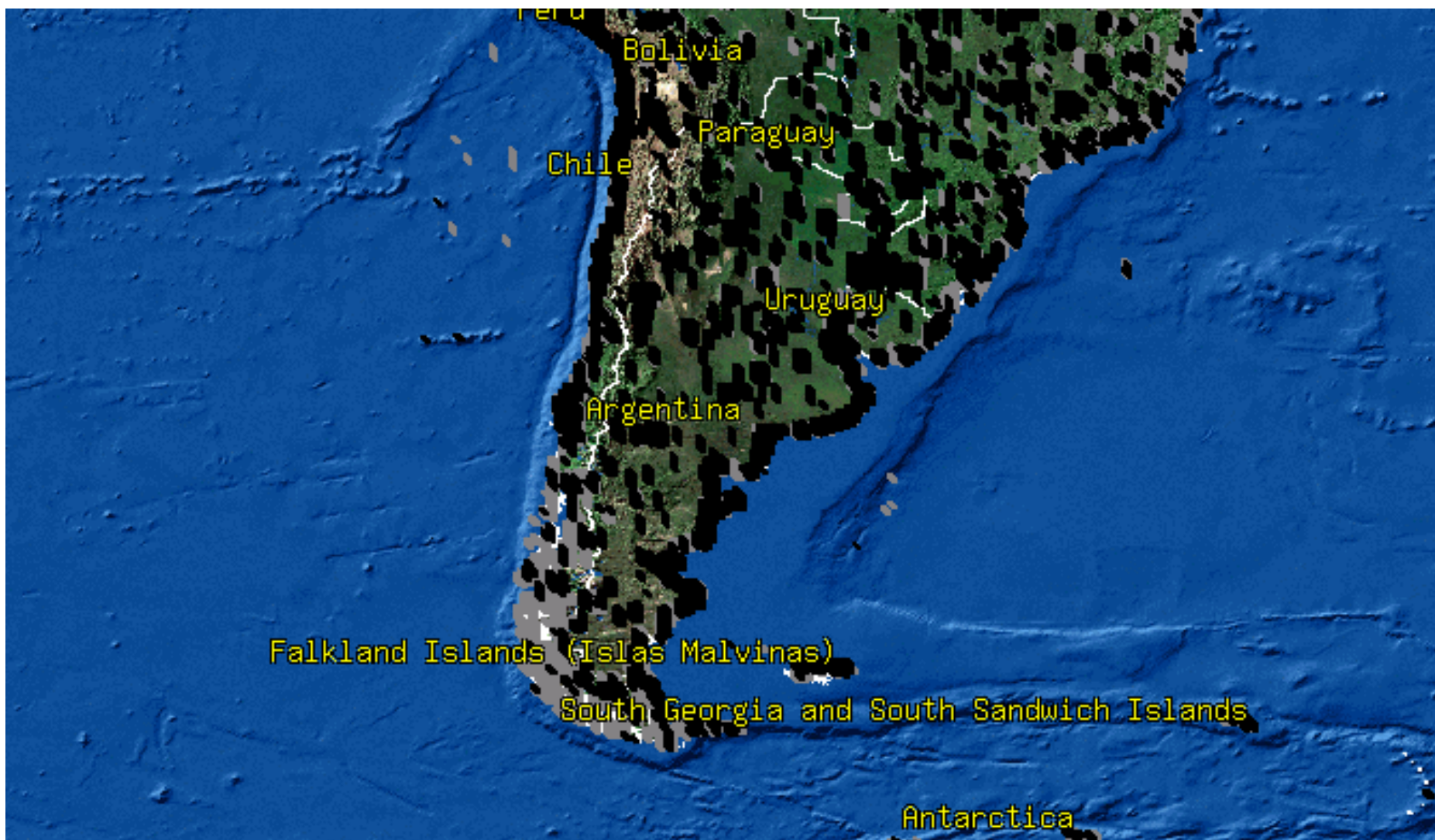
# Capability Comparison

Capability	DigitalGlobe	Space Imaging	ImageSat	SPOT	OrbImage
Resolution	<b>Pan 60cm MS 2.4m</b>	Pan 1m (GSD 82cm) MS 4m (GSD 3.2m)	Pan 1.8m	Pan 2.5/5/10m MS 10m/20m	Pan 1m (GSD) MS 4m (GSD)
Swath Width	<b>16.5 Km</b>	11 Km	12.5 Km	60 or 120Km	8 Km
Max collection/yr	<b>70M Km2</b>	45M Km2	25M Km2	TBD	14M Km2
Satellite Agility	<b>Moderate</b>	High	Moderate	Moderate	Moderate (TBD)
Image Archive	<b>Yes</b>	Yes*	Yes*	Yes	Yes*
Cloud Free	<b>Yes</b>	Yes	No	No	No
Raw	<b>Yes</b>	No	No	No	No
Ortho-ready	<b>Yes</b>	Yes	TBD		TBD
1:50,000 Orthos	<b>Yes</b>	Yes	No	Yes	No (TBD)
1:25K/24K Orthos	<b>Yes</b>	No	No	Yes	No (TBD)
1:12K/10K Orthos	<b>Yes</b>	Yes	No	No	No (TBD)
1:4800/5000 Orthos	<b>Yes*</b>	Yes	No	No	No (TBD)
1:2400 Orthos	<b>No</b>	Limited	No	No	No (TBD)
DEM	<b>No</b>	Yes	No	Yes	No (TBD)
Subscription	<b>Yes</b>	Yes	No	TBD	No

\* Limited



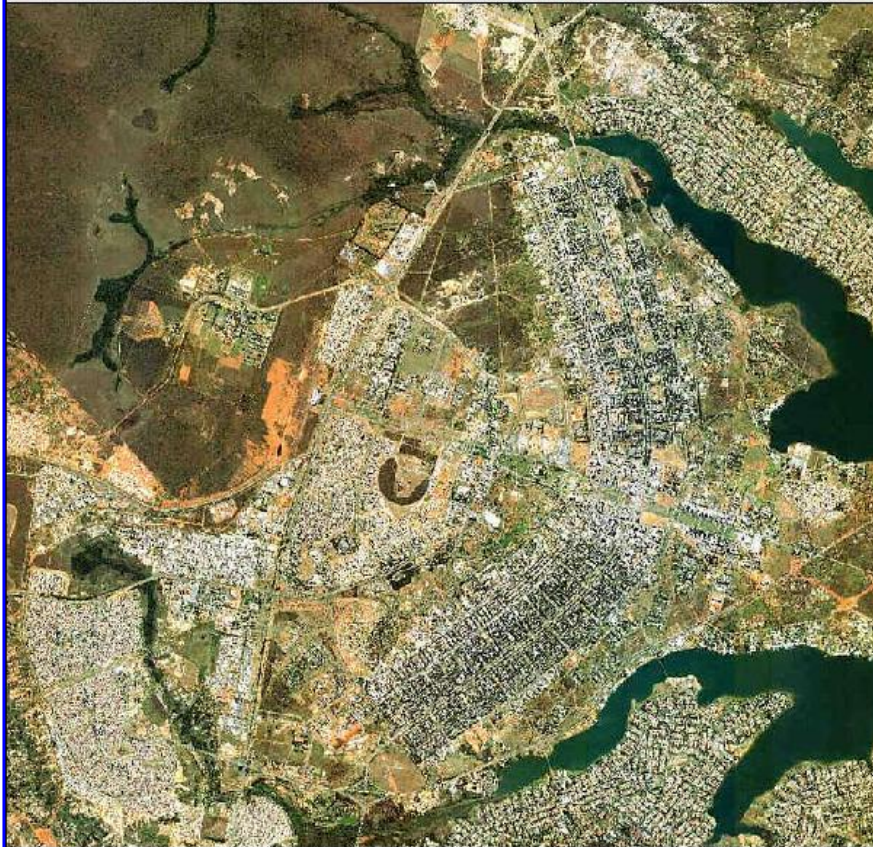
# QuickBird Archive – May 2004





# The On-Line Search Tool: Image Browse and Metadata

Catalog ID: 1010010000647501 Acq Date: 03-May-2002 13:33:03GMT Lat/Long: -15.78245° / -47.91752°  
Off Nadir Angle: 4° Target Azimuth: 27° Cloud Cover: 1% Image Quality: 90



DIGITALGLOBE™  
©DigitalGlobe 2002 All Rights Reserved

To Order Call: 303-702-5561 or 800-496-1225  
Email: [orders@digitalglobe.com](mailto:orders@digitalglobe.com)  
Or Click Here To Find Your DigitalGlobe Reseller

## Image Metadata

ACQUISITION DATE	2002-05-03
CLOUD COVER	1%
CATALOG ID	1010010000647501
PAN RESOLUTION	0.61 meters
MULTI RESOLUTION	2.45 meters
QUALITY	90 - Excellent
OFF-NADIR	4 degrees
STEREO PAIR ID	NONE

## Image Location

Vertex	Latitude	Longitude
southwest	-15.859	-47.995
northwest	-15.706	-47.996
northeast	-15.705	-47.839
southeast	-15.858	-47.838
center	-15.782	-47.917

Close



# NextView / WorldView

## Contract Headlines

---

**“DigitalGlobe Lands \$500 M Satellite Deal”**

*Rocky Mountain News, October 1, 2003*

**“NextView Contract Propels DigitalGlobe Ahead of Competition”**

*Space News, October 6, 2003*

**“DigitalGlobe Inc. -- Department of Defense  
Contract Valued As Much As \$500 M”**

*Wall Street Journal, October 1, 2003*

### **DigitalGlobe Unveils Plans for Next-Generation Spacecraft Constellation**

*Agile, High-Flying WorldView Imaging System Offers Unprecedented Resolution*

**LONGMONT, Colo., March 23, 2004** - DigitalGlobe® today unveiled details of the company's next-generation imaging satellite, WorldView. The new satellite, set to launch no later than 2006, will be the world's highest resolution commercial imaging satellite with better agility, accuracy and collection capacity than any other known commercial system. The WorldView imaging system will allow DigitalGlobe to substantially expand its imagery product offerings to both commercial and government customers worldwide.



# Importancia de Alta Resolucion para el Gobeirno



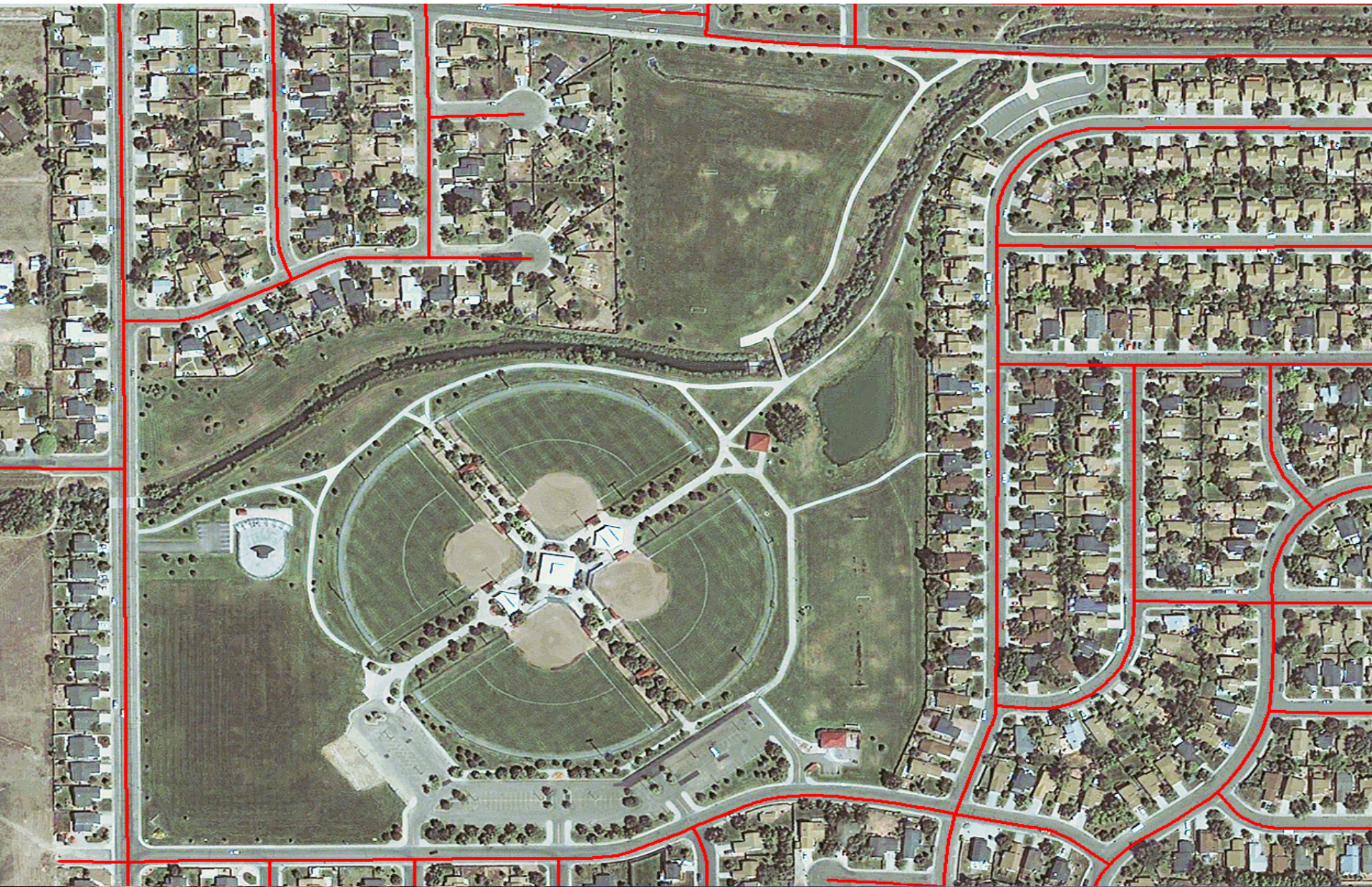
# Porque Usar Imagenes Satelitales?

---

- **Licencia para el Gobierno**
- **Informacion es Accessible**
- **Compara Bien con Arial Photography**
- **Una Compania International**
- **Esenas Grandes – 16km x 16km**



# Long-term National Planning





# Disaster and Emergency Planning



**Elbe River Flooding, Germany  
QuickBird 60-Centimeter Panchromatic**



**August 2002**



# 60cm – Cross Threshold to Aerial Markets



50cm Traditional Orthophoto



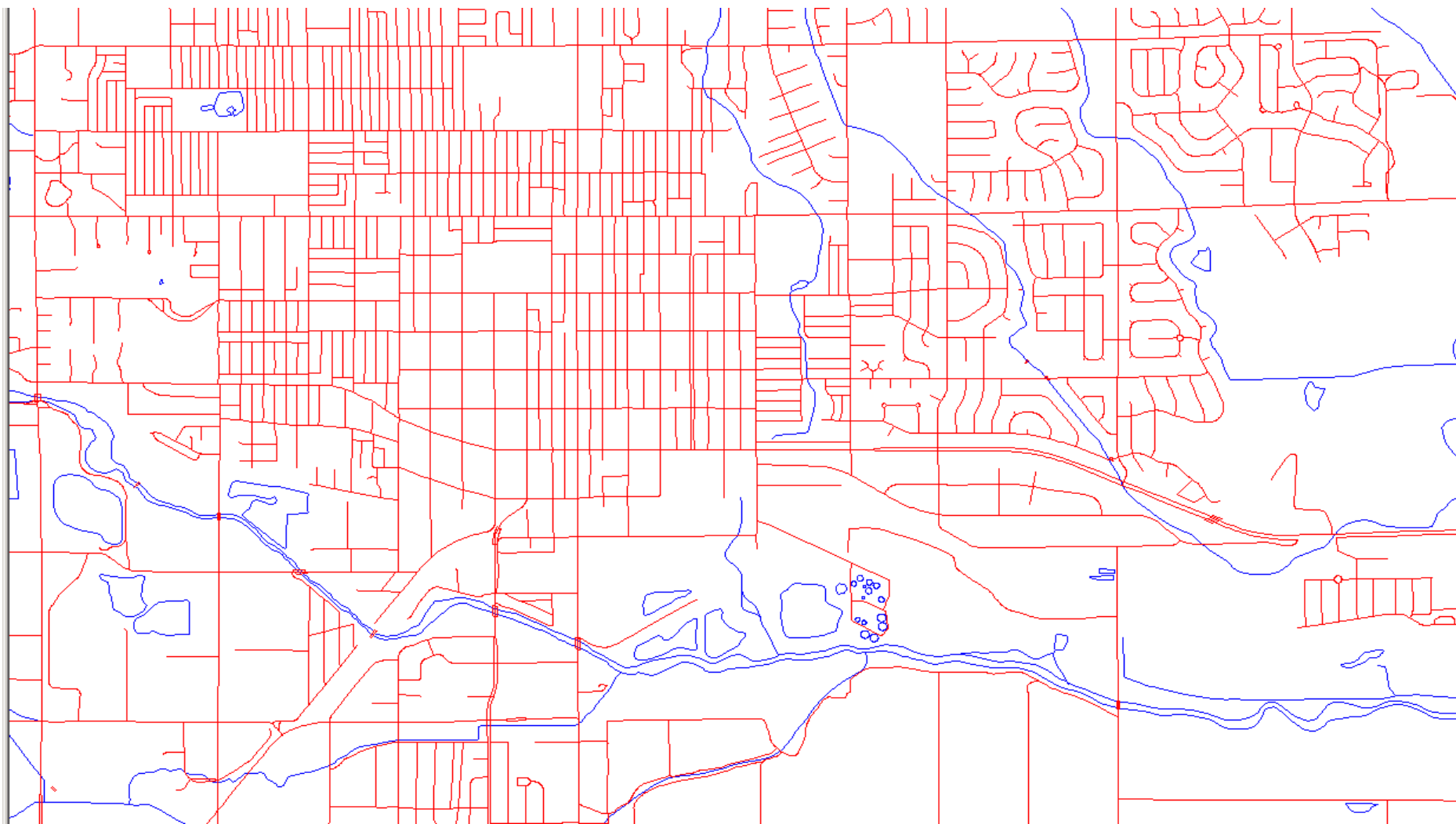
60cm QuickBird Orthoimage



# Aplicaciones de Imagenes de Alta Resolucion

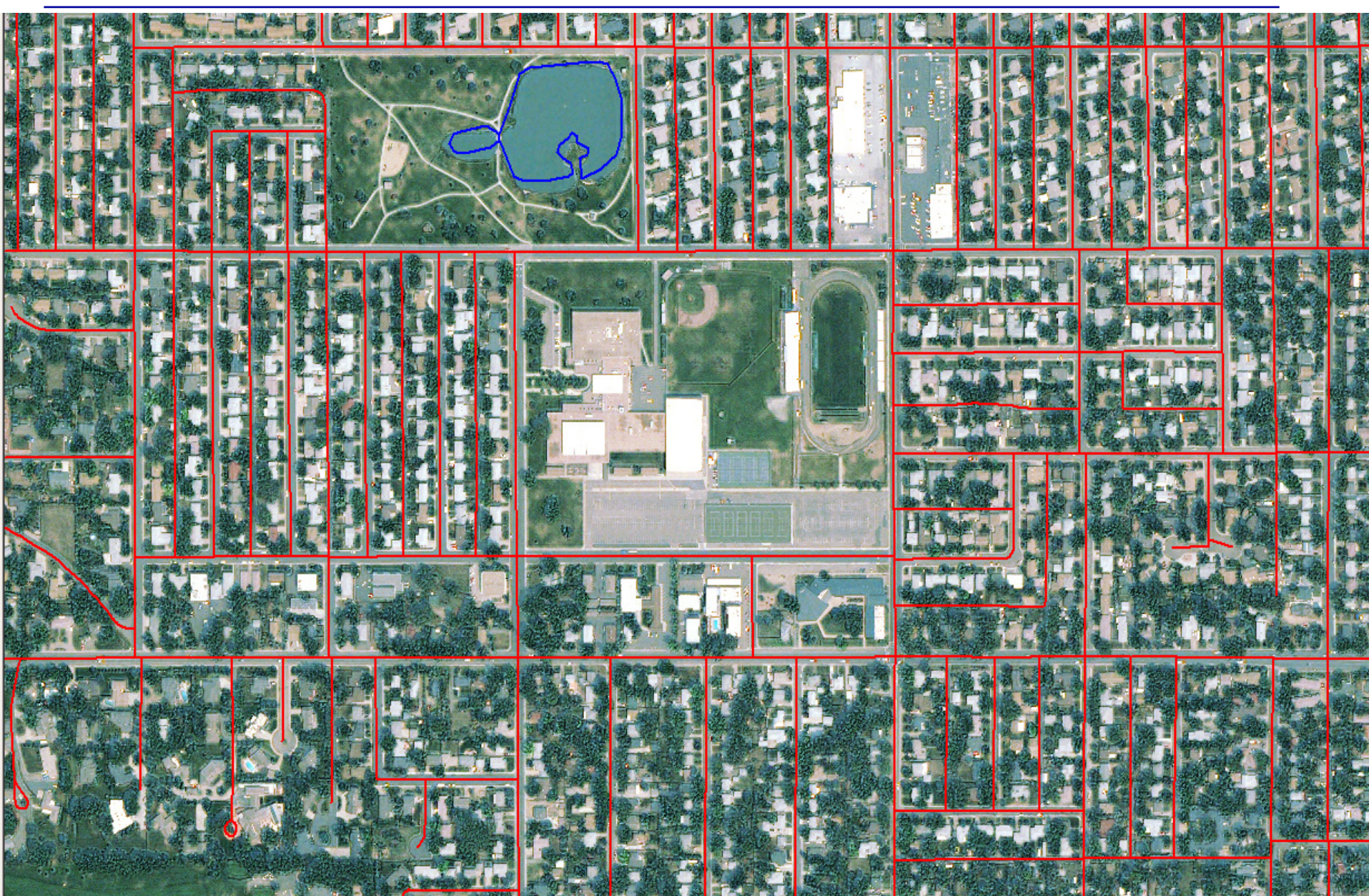


# GIS Symbolology of Selected Features



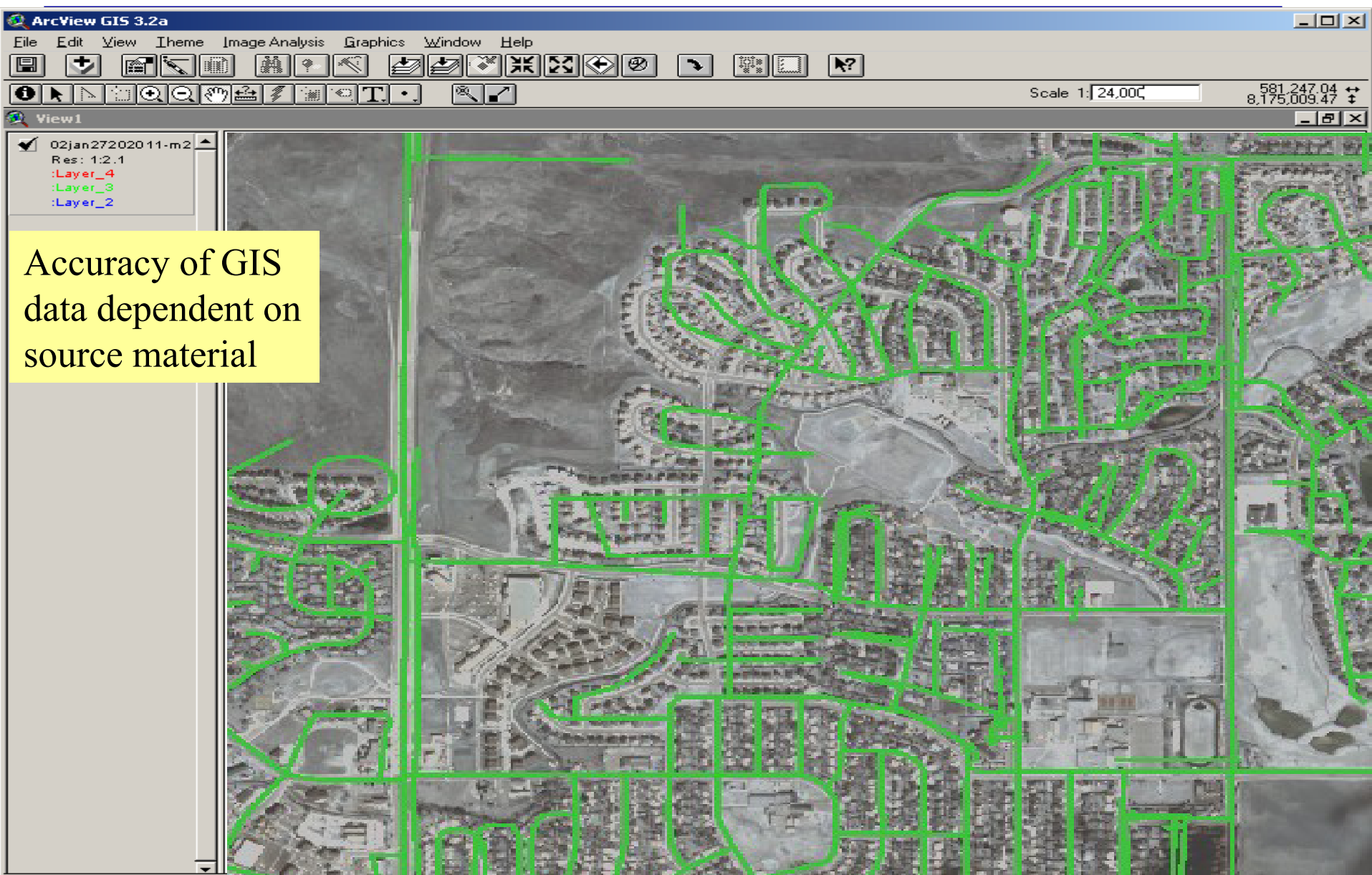


# The Power of Imagery

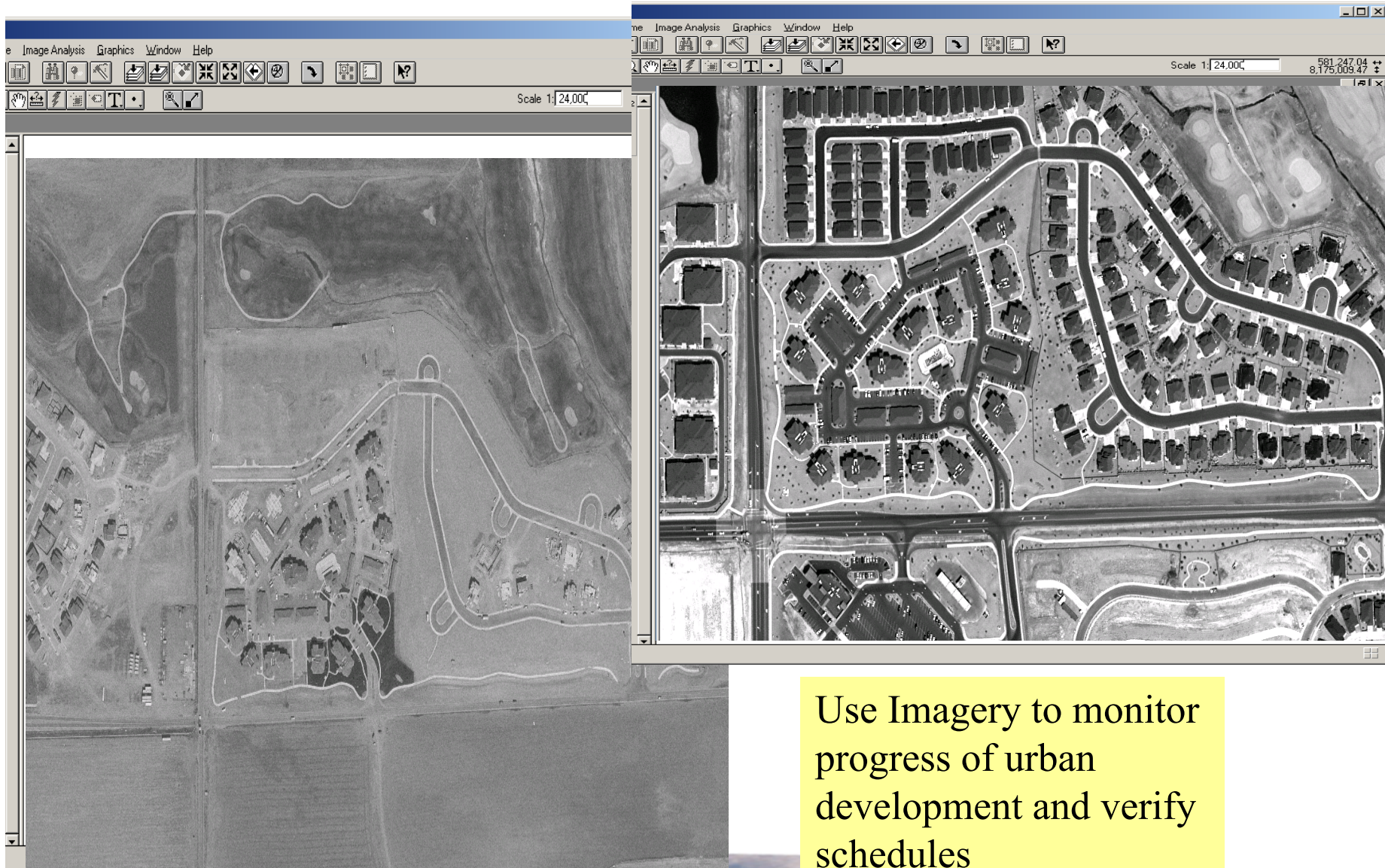




# Update Maps – Accurate Information



# Mapping – Monitor and Update



Use Imagery to monitor progress of urban development and verify schedules







# Emergency Response

- Risk Assessments
  - Pre-Event Planning

QuickBird imagery can assist city, county, and state officials in establishing detailed geographic information systems (GIS) containing:

-- **Key Installations**

-  **Hospitals**
-  **Police Stations**
-  **Fire Departments**
-  **Shelters (e.g., Schools)**

-- **Key Infrastructure**

**Roads, Rails, Bridges, Airports,  
Utilities, Ports**

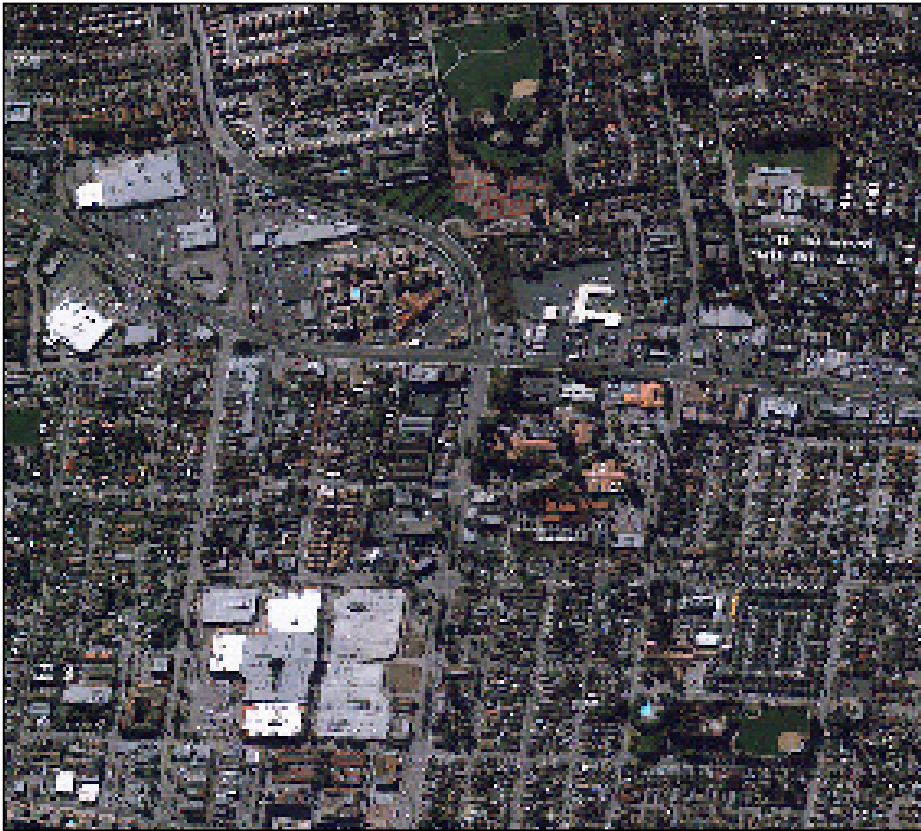
Each data point can be attributed with critical information officials will need in the event of an emergency, including:

- **Number of personnel by type**
- **Number of hospital beds**
- **Capabilities of facilities to handle certain types of emergencies**



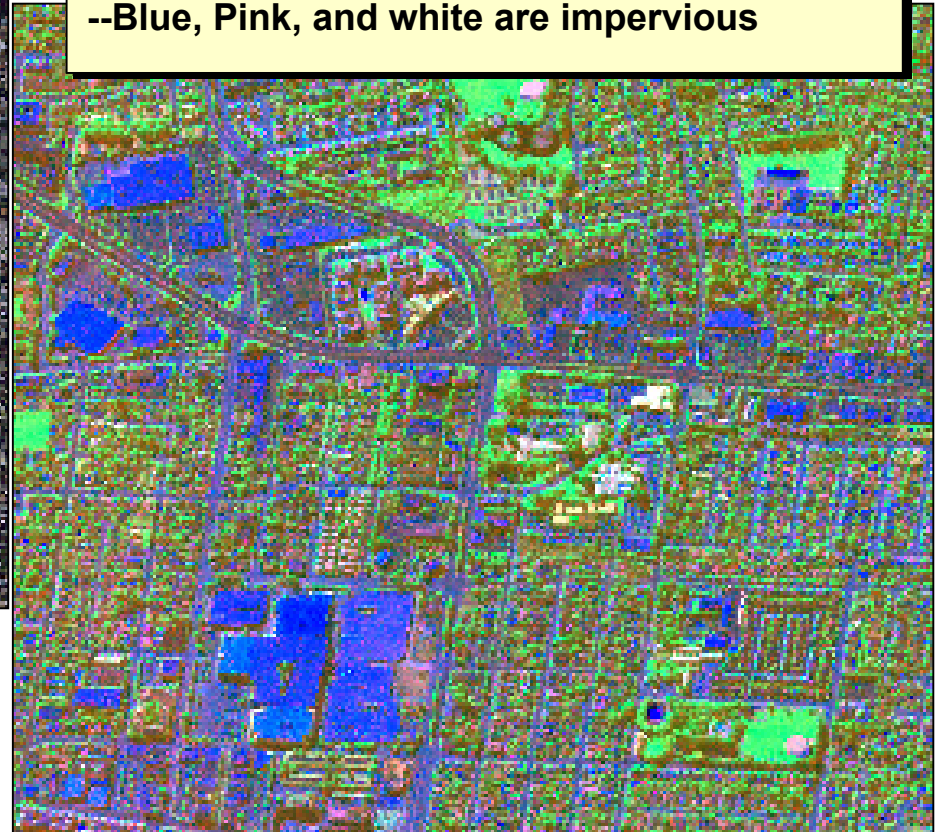


# Storm Water Management



Utilizing the spectral properties of QuickBird MS imagery, it is possible to determine total area of pervious versus impervious surfaces to assist in storm water management

- Green is pervious to water
- Blue, Pink, and white are impervious

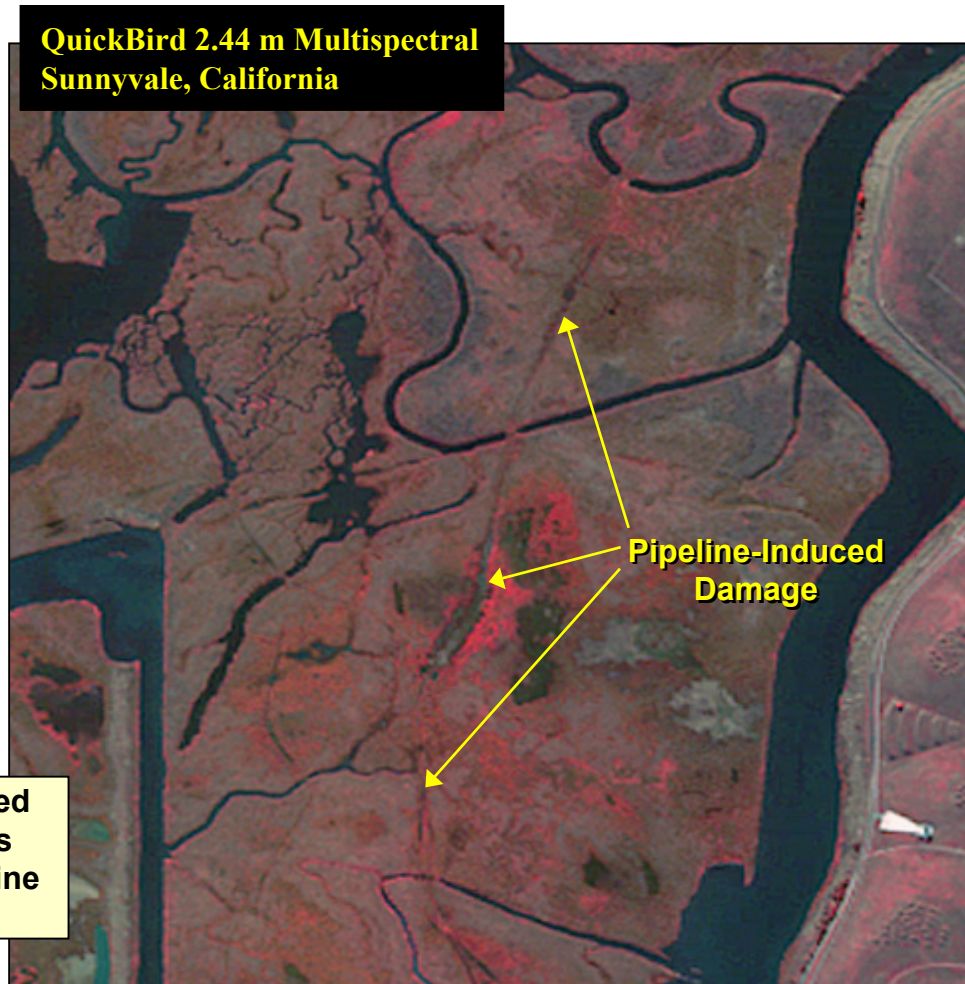




- **Monitoring**

- Change Detection
- Industrial Compliance
- Pollution Sources
- Habitat and Vegetation Monitoring
  - **Wetlands**
  - **Coastal Environments**

QuickBird near-infrared bands can be used to assess damage to wetlands. Damage is clearly evident from placement of a pipeline through these wetlands.



# Environmental Management

Tarauca, Brazil



- Change detection
- Deforestation
- Road building
- Structures
- Logging activities

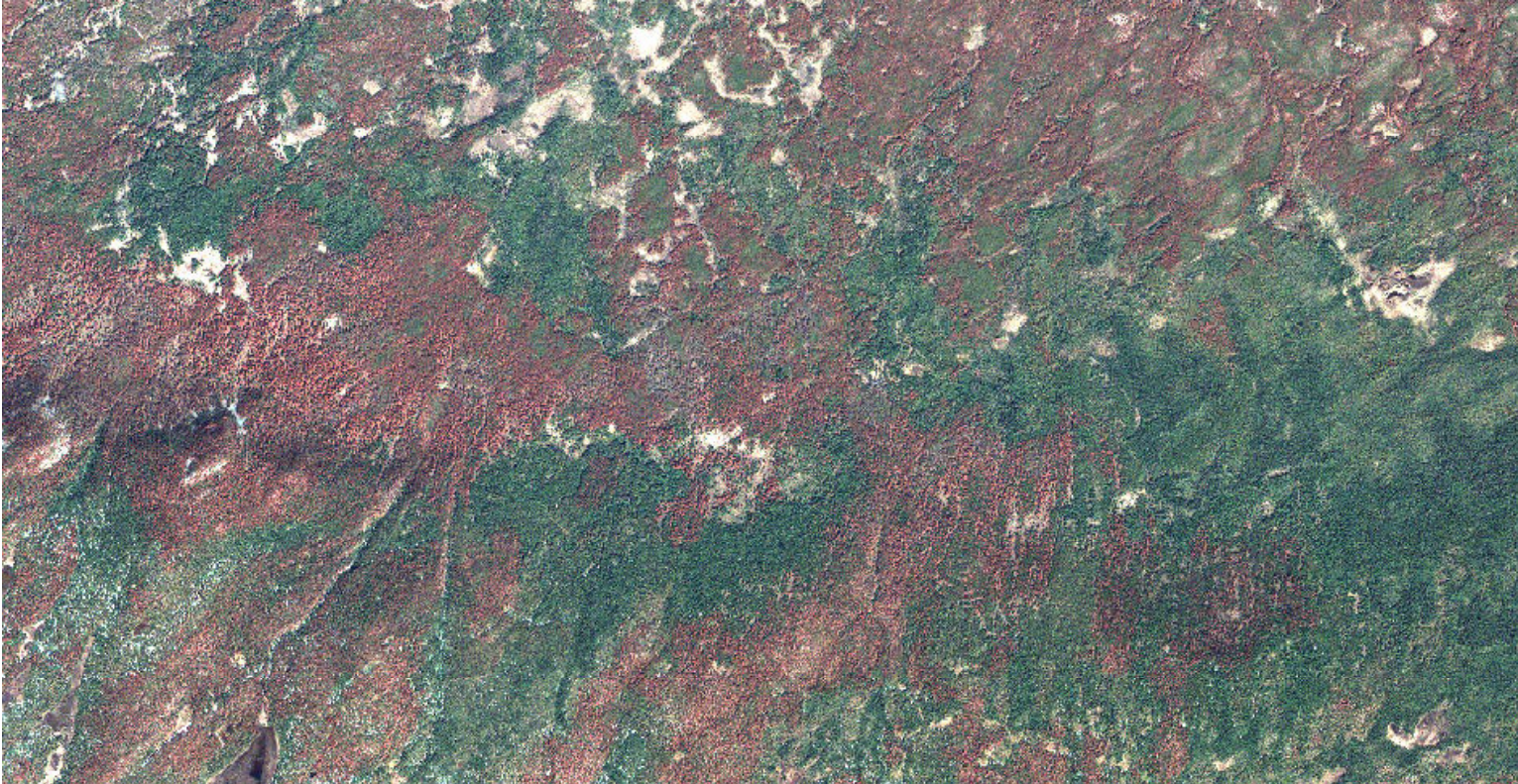




Unmanaged logging  
resulting in erosion  
and sedimentation,  
impacting water quality



# Forest Health – Insect Damage

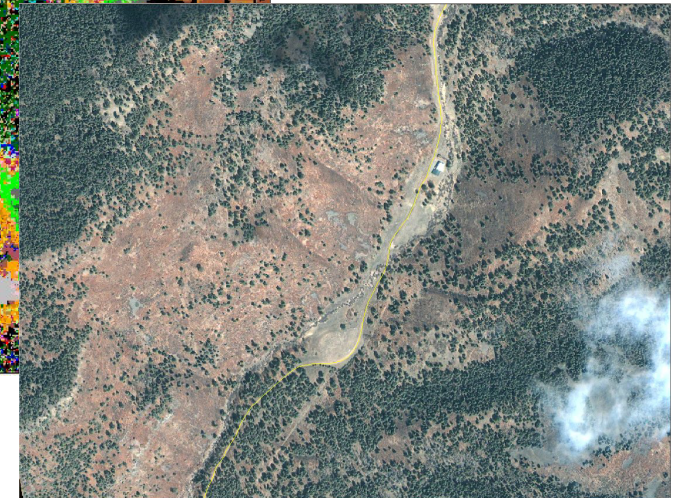
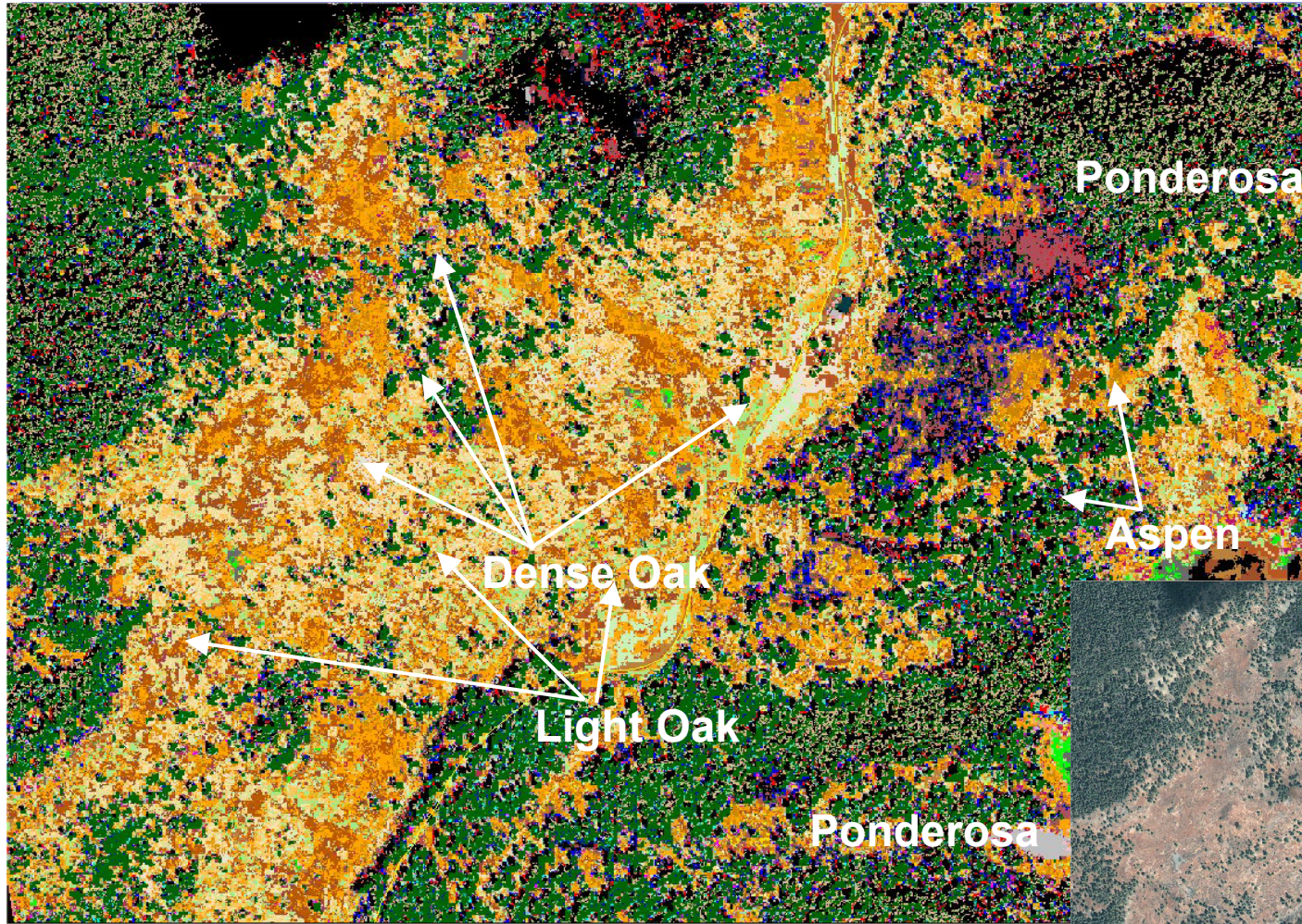


Natural Color image, British Columbia

- Extensive conifer beetle infestation

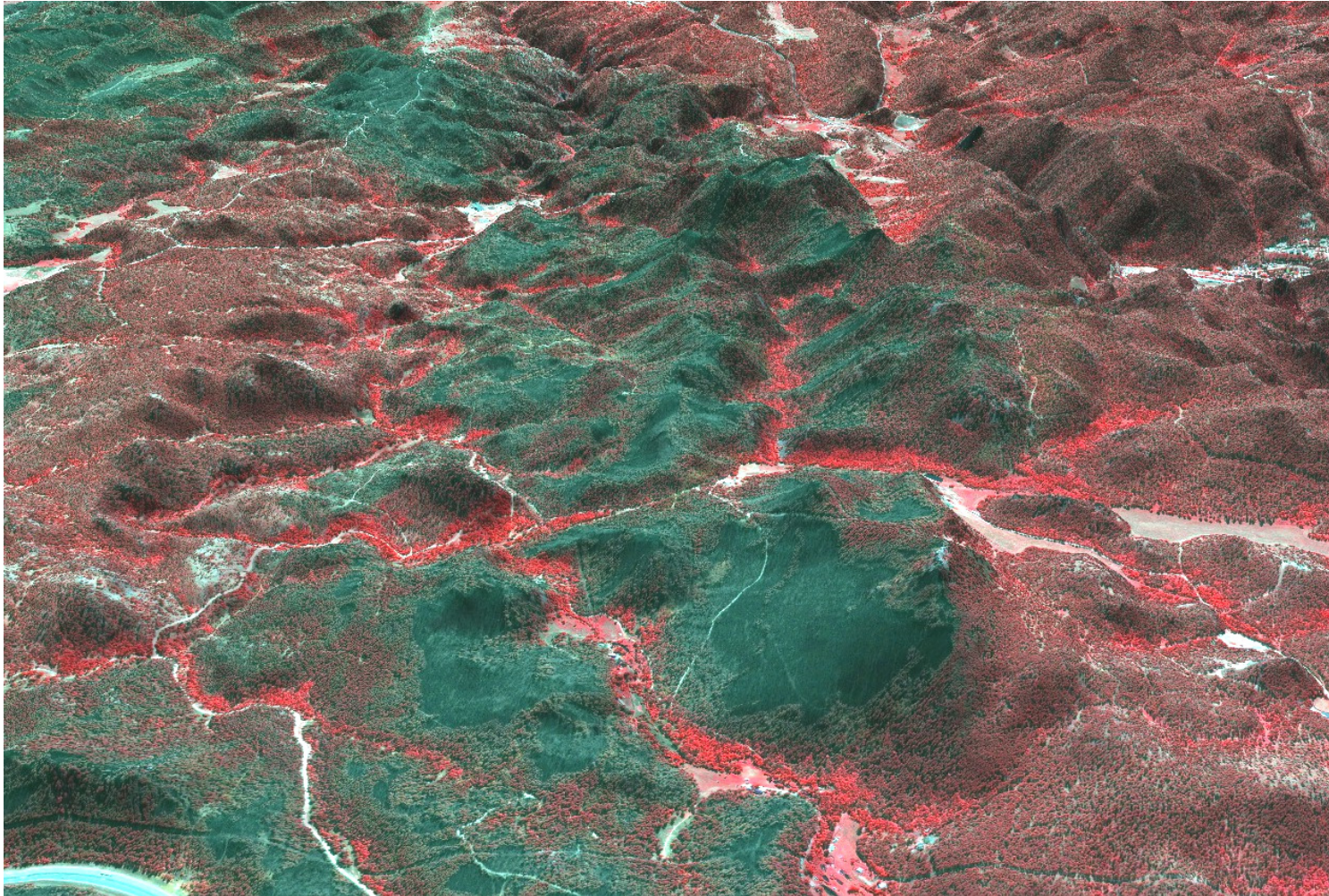


# Timber and Vegetation Classification





# Wildfire – Damage Assessment



3D viewing can be used to visualize burn patterns and topographic influences of the fire behavior.

Terrain data can easily be used with QB data for 3D analysis for erosion potential and re-generation planning and management.



# Water Quality Applications

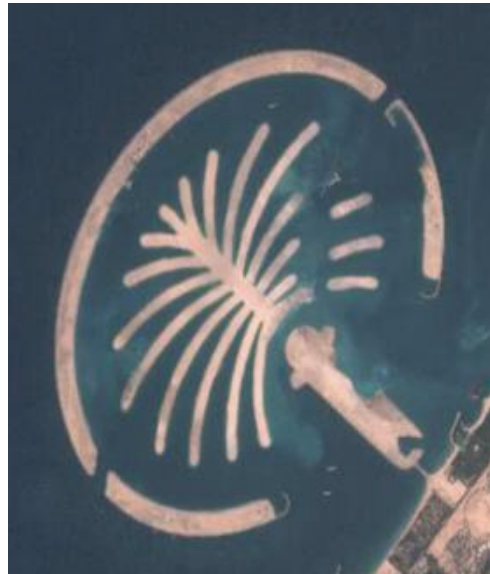




# Change Detection



7 October 2002



24 June 2003



9 September 2003



# Monitor Progress

QuickBird B&W, June 2002



QuickBird Color, August 2002



QuickBird Color, October 2003



**Monitor Progress of Construction,  
Equipment and Material Inventory,  
Construction Adheres to Plans**



