Aerial SAR in Washington State

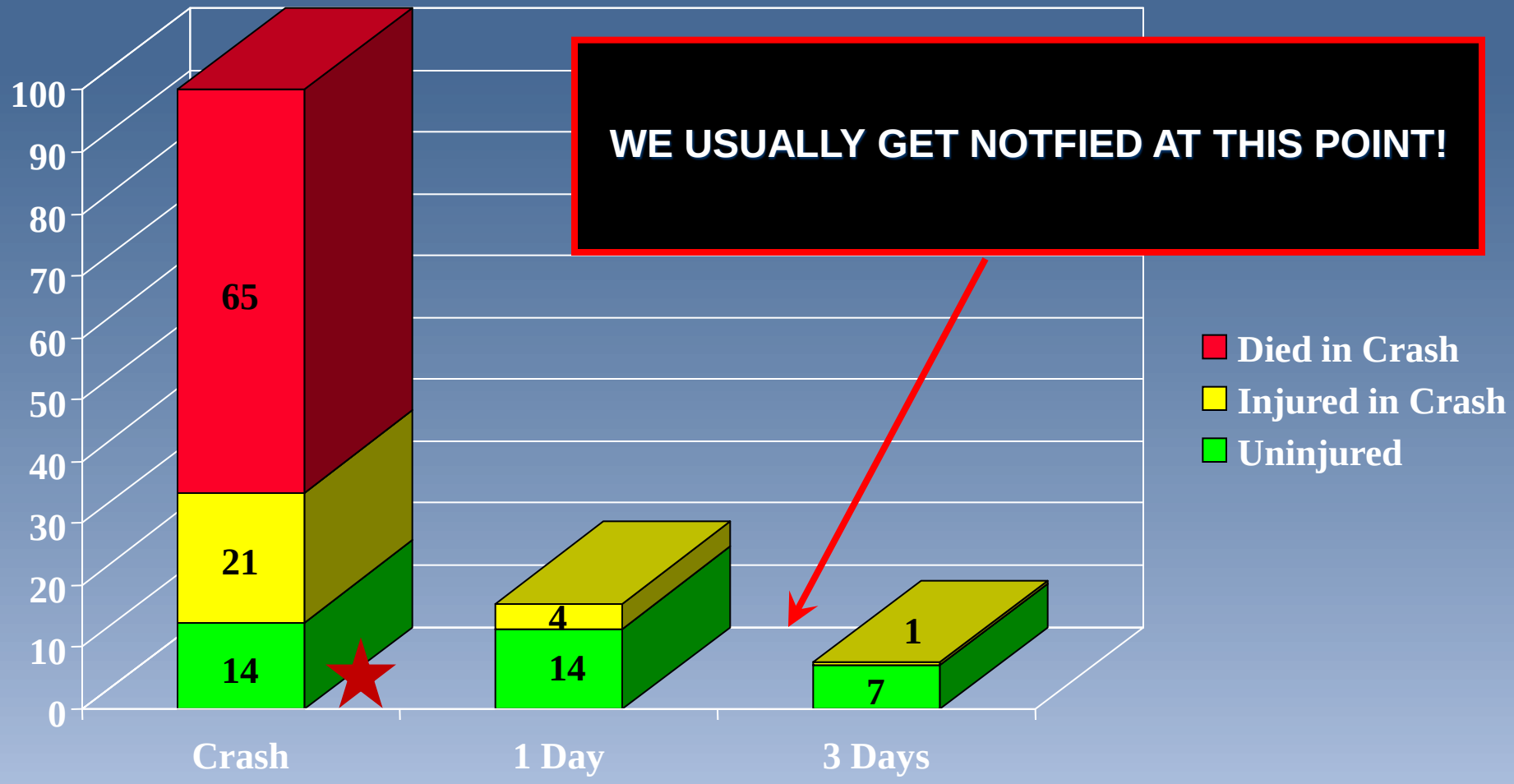
Process Overview

THE MISSION

Locate, Access, Stabilize and Transport missing persons as quickly and safely as possible to save life, limb, eyesight, and prevent undue suffering, using aviation resources solely or in conjunction with other forces.

This can be for missing or overdue aircraft, missing persons in the urban or wilderness environment, or because of natural or man made disasters.

SAR SURVIVAL FACTORS



SAR Plans and Agreements

- WORLD SAR PLAN
  - ICAO & IMO Treaties
  - IAMSAR Manual
- NATIONAL RESPONSE FRAMEWORK
  - Emergency Support Function 9 –
- US SAR PLAN
- US Supplement to IAMSAR Manual
    - Maritime Addendum
    - Land SAR Addendum
    - Aviation SAR Addendum
- US Air Force / Washington State Agreements
  - Memorandum of Understanding
  - Memorandum of Agreement
- WA Comprehensive Emergency Management Plan (WA CEMP)
  - Emergency Support Function 9 – Search and Rescue
  - RCW 47.68.380 / RCW 38.52.400
  - WAC 468-200 / WAC 118-04

Three Levels of SAR

- OLIVE MODEL – Green, Yellow, Red
  - Day to Day SAR Incidents
    - Missing Aircraft
    - ELT/EPIRB/PLB's
    - GSAR Assists

WA RESCUE COORDINATION CENTER ACTIVATED AT SEOC

  - Mass Rescue Operations (MRO)
    - Lewis Thurston County Floods 2007
  - Critical Incident SAR (CISAR)
    - Volcano, Lahar, Earthquake, Tsunami Scenarios

Three Segments to Process

A. Determination/Investigation
B. Alerting / Activation
C. Execution / Operations

Decision Making Process
Six Step SCORPA

S - Size up the Incident – Nature, Hazards, Size of Area

C - Contingencies – What Could Make Things Worse?

O - Objectives – Strategies, Assignments, Investigate, Search

R - Resources – What, Where, When, How & How Fast

P - Plan - Responsibilities, Organization

A - Action – Implement IAP, Supervise/Coordinate, Repeat Process

NORMAL OPERATIONS

- Reports of Missing, Overdue, or Aircraft In Distress
  - FAA / FSS to AFRCC
  - AFRCC to SEOC
  - SEOC to WSDOT

  OR
  - PSAP to SEOC to WSDOT
  - PSAP to WSDOT

  THEN

  WSDOT contacts SEOC and AFRCC and PSAP/Local Jurisdiction to start Coordination

NORMAL OPERATIONS

- Reports of ELT/EPIRB/PLB's
  - SARSAT System to AFRCC
  - AFRCC to SEOC
  - SEOC to WSDOT

  OR

  - FAA to AFRCC
  - AFRCC to SEOC
  - SEOC to WSDOT

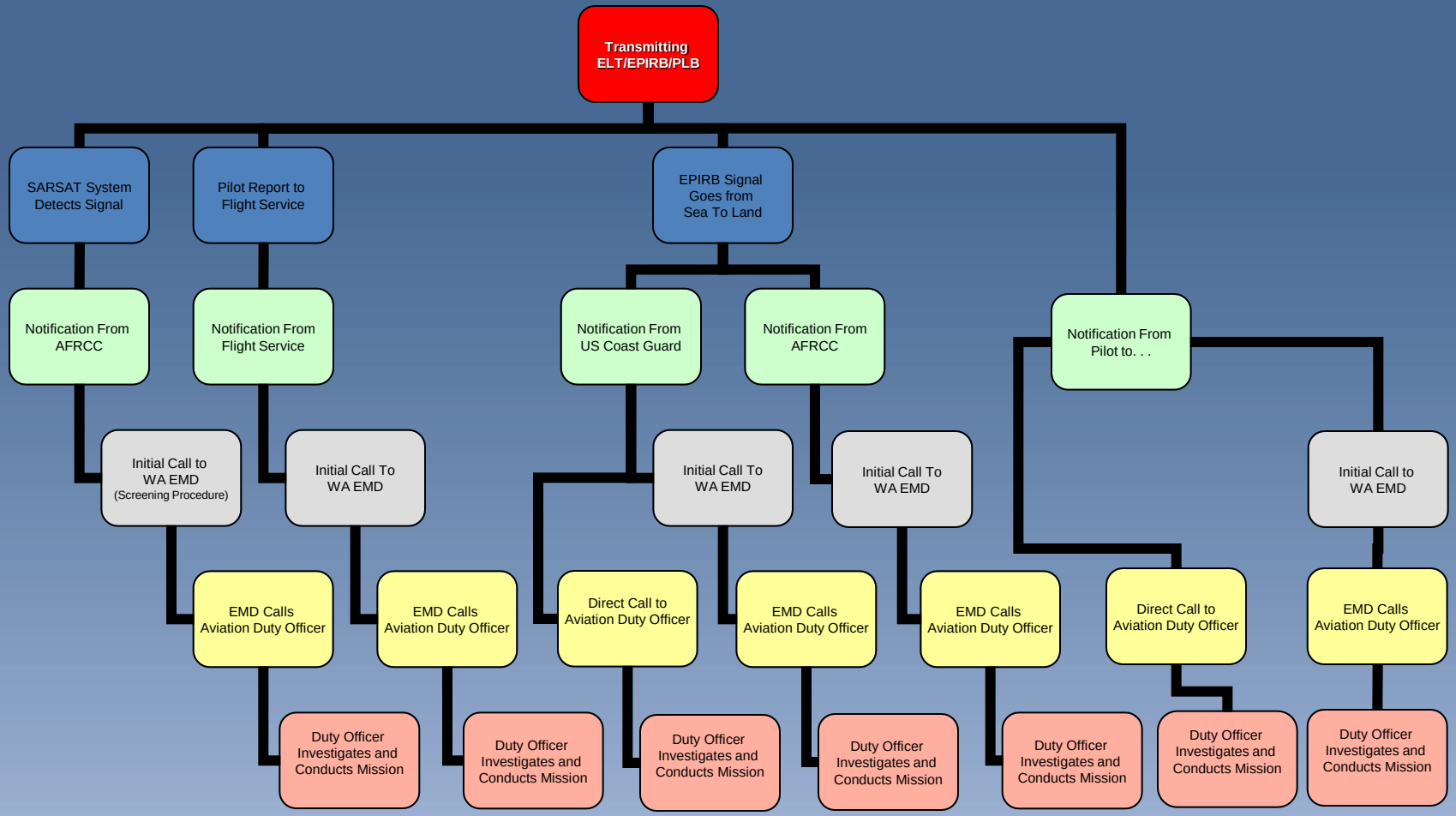
  THEN

  WSDOT starts evaluation process

  Calls airports, towers, operators, or registration information to resolve

  Activates resources to located and silence if warranted

ELECTRONIC DISTRESS BEACON NOTIFICATION FLOW CHART



NON STANDARD OPERATIONS

- Friends of Pilot Initiate Own Search
  - Do not contact FAA/FSS/SEOC or AFRCC
  - Causes Critical Time delay
    - Survival Rate Declines
    - Critical information degraded
    - Erroneous assumptions can be communicated as factual information
- FAA or FSS Contacts Local Jurisdiction Direct
  - FAA/FSS or Local Jurisdiction Starts SAR
  - Does not Coordinate with SEOC or WSDOT
  - Complicates process and causes delays
    - Resources activated with full coordination picture

Technology

Digital 406 Mhz ELT

Automatic Dependent Surveillance Broadcast

- Alaska Stats

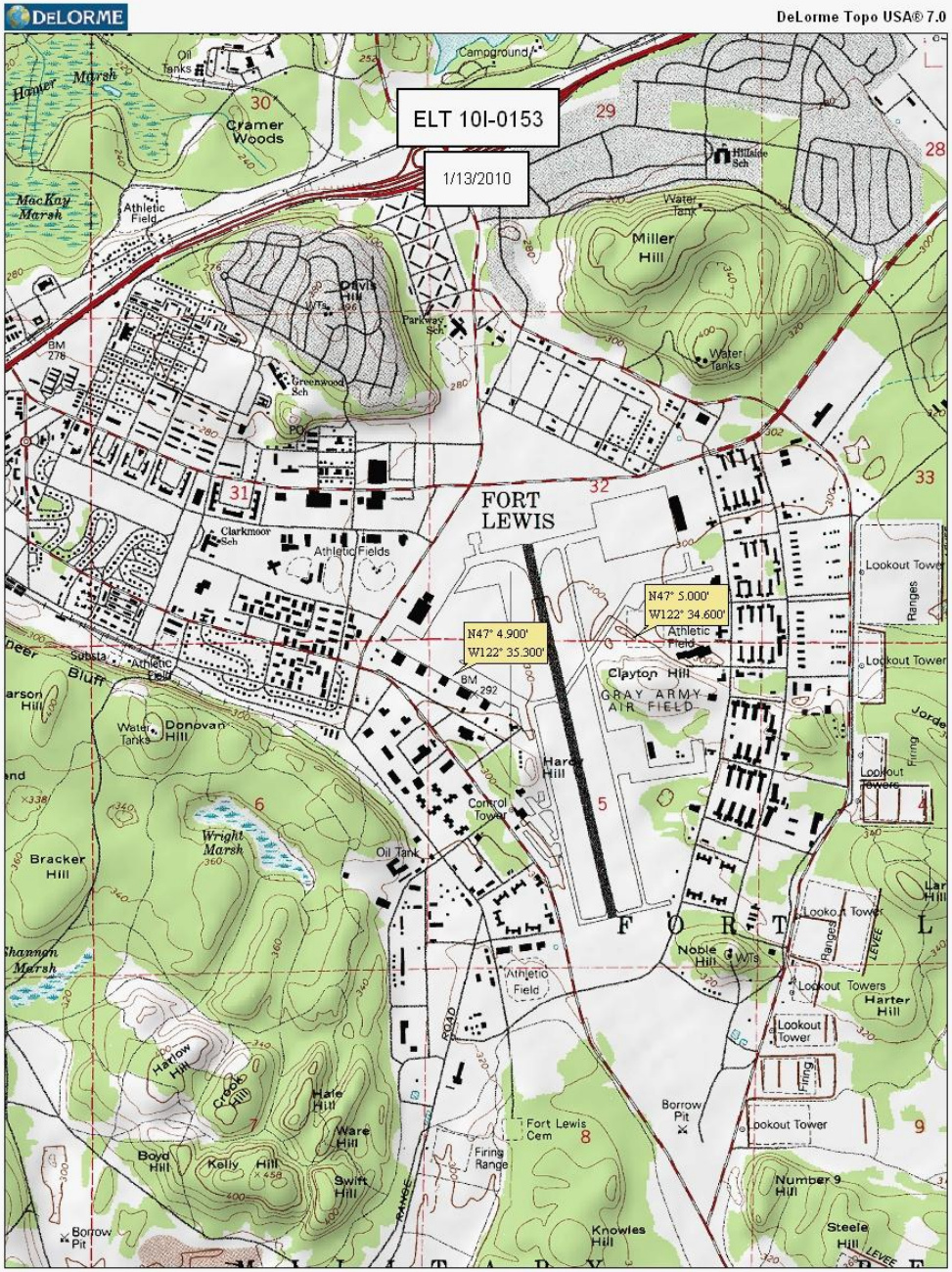
Radar Forensics

- Update ASAR Theory
- New Best Practices

406 Digital Beacons

Digital 406 Mhz ELT

- Provides ID of Source – Boat, Aircraft, PLB, etc
- Provides Contact Information for Quicker Verification
- Provides Very Small Initial Search Area – 2NM
- 8% False Alarm Rate vs. 97% !!


DeLorme
DeLorme Topo USA® 7.0
ELT 10I-0153
1/13/2010
N47° 4.900'
W122° 35.300'
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W122° 34.600'
FORT LEWIS
Cramer Woods
Miller Hill
Clayton Hill
GRAY ARMY AIR FIELD
Donovan Hill
Bracker Hill
Wright Marsh
Harter Hill
Noble Hill
Fort Lewis Cem
Knowles Hill
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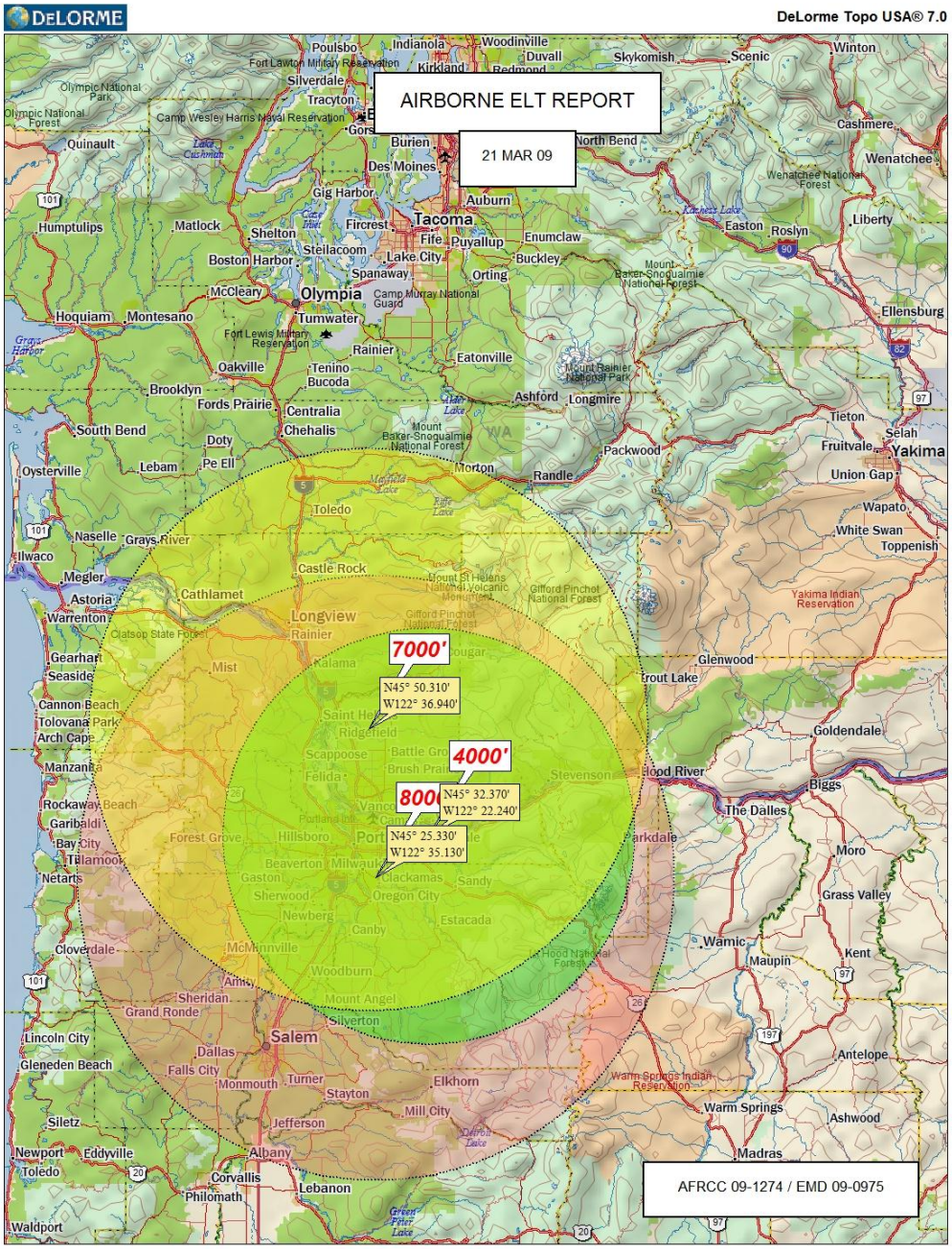
DeLORME
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AIRBORNE ELT REPORT
21 MAR 09
7000'
N45° 50.310'
W122° 36.940'
4000'
N45° 32.370'
W122° 22.240'
N45° 25.330'
W122° 35.130'
AFRCC 09-1274 / EMD 09-0975
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Radar Forensics

Available in 1-2 hours

Discreet Code / Good LKP = Quicker

Notification to On Site 12 Hours or Less
Average = 4 Hours

New System Available Since 2004

N
W
E
S
Image © 2006 MDA EarthSat
Image © 2006 DigitalGlobe
© 2005 Google
Pointer 46°03'19.50" N 120°37'18.38" W elev 3009 ft
Streaming 100%
Eye alt 14.69 mi

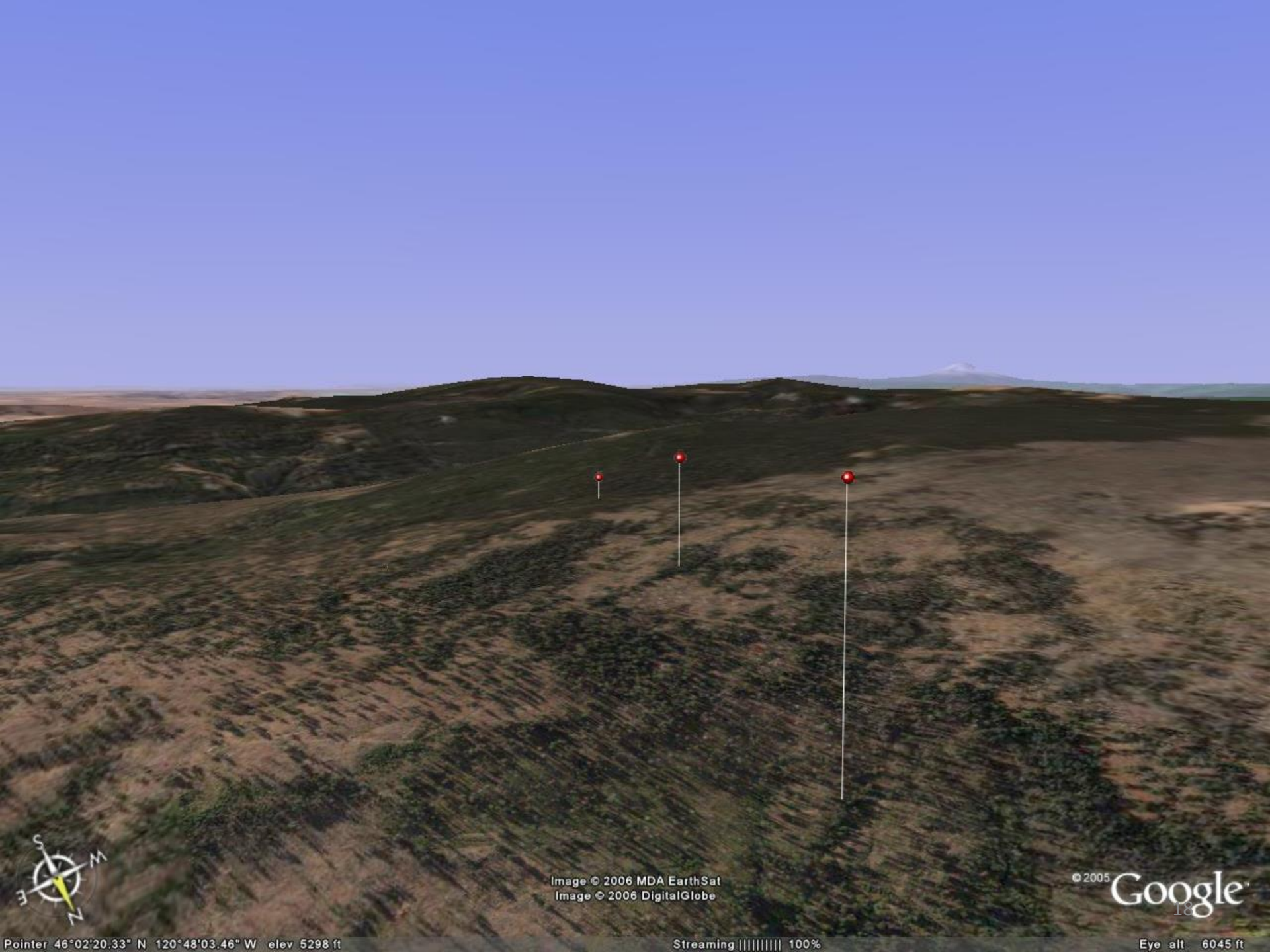
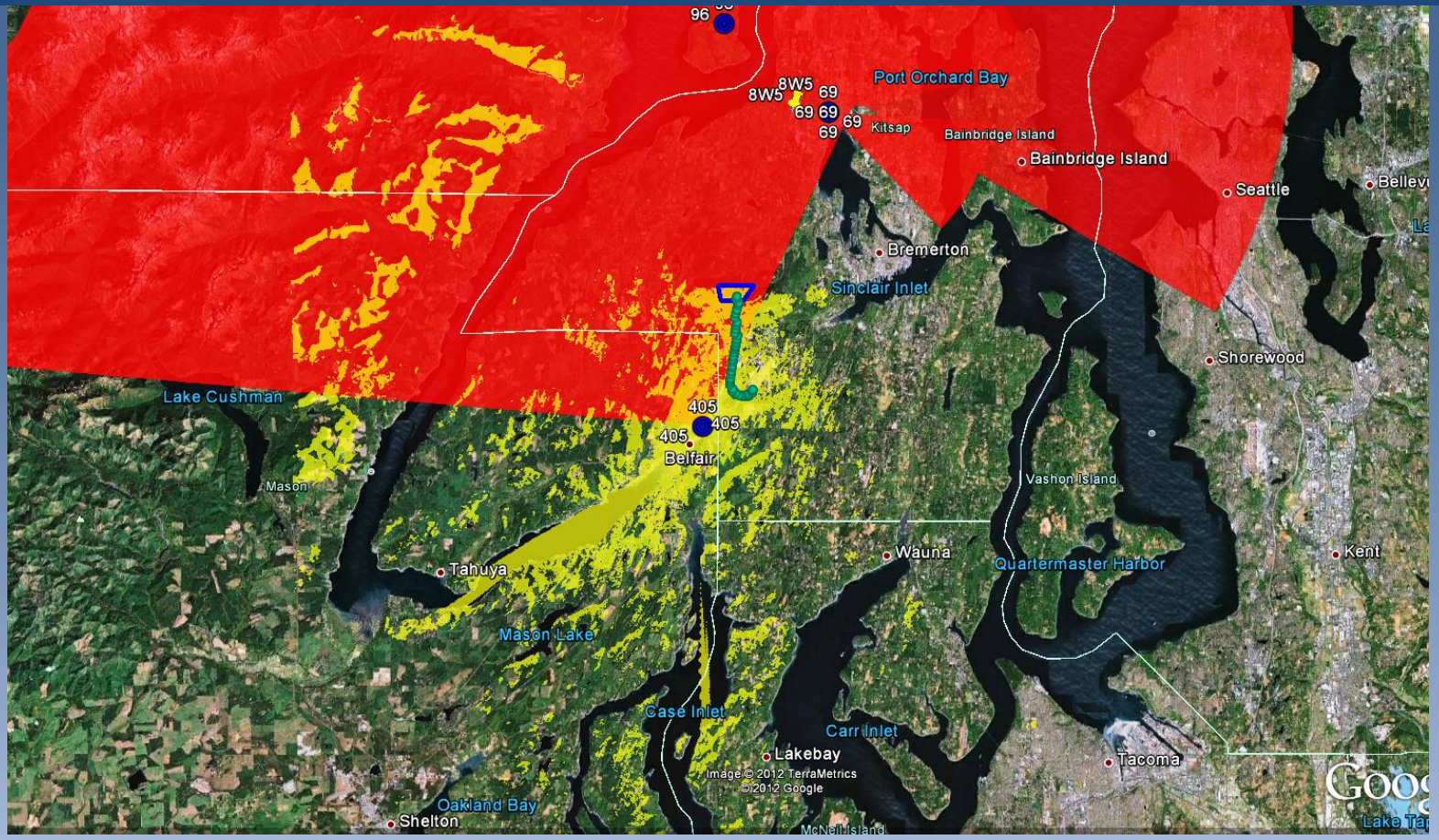


Image © 2006 MDA EarthSat
Image © 2006 DigitalGlobe
© 2005 Google
Pointer 46°02'20.33" N 120°48'03.46" W elev 5298 ft
Streaming 100%
Eye alt 6045 ft

Cell Phone Forensics



Available in 1-2 hours

INITIAL TACTICS

- Alerting and Activation
  - Mission Numbers
  - SMS System – Texts
  - Phone Calls to Critical Staff / Partners
- Local Jurisdiction Coordination
- Base of Operations Determination
- Resource Requests
- Investigative Information Retrieval
- Route / Electronic Searches

RESOURCE SELECTION

- Response Time
- Scope Dependent
  - Electronic
  - Protracted – Wide Area
  - Time / Weather Factor
- Operational Area Environment
- Appropriateness of Resource