



Fight Against Avian Influenza Role of GIS

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Presentation Outline

- Avian Influenza Outbreak – Overview
- Key Players
- Avian Influenza Events and GIS Infrastructure
- Information Flow and Epidemiology Database
- Integrated Information Products

- Status of Emergency Preparedness
- Role of People and Technology
- BC Poultry Identification Initiative
- Summary

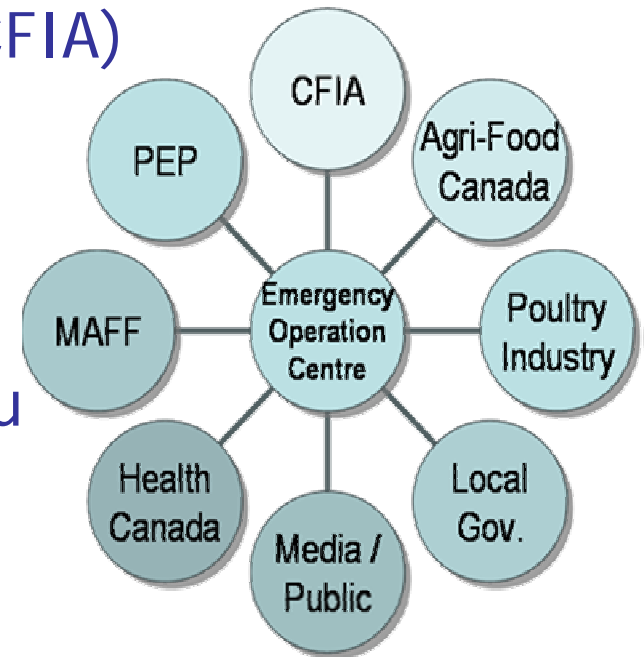
Avian Influenza Outbreak 2004

- Avian Influenza
 - Contagious viral infection that affects food producing birds (chicken, turkeys) and pet birds
 - Avian influenza viruses, such as the H5 virus present in Asia, may, on rare occasions, cause disease in humans.
- Disease Detection & Spread
 - Outbreak detected in mid-February 2004
 - By mid-May 42 commercial & 11 backyard farms infected
- Key Facts and Data
 - Total 600 farms
 - Value: >5000 employees, > \$1 Billion Dollars Industry (Farm & Retail)

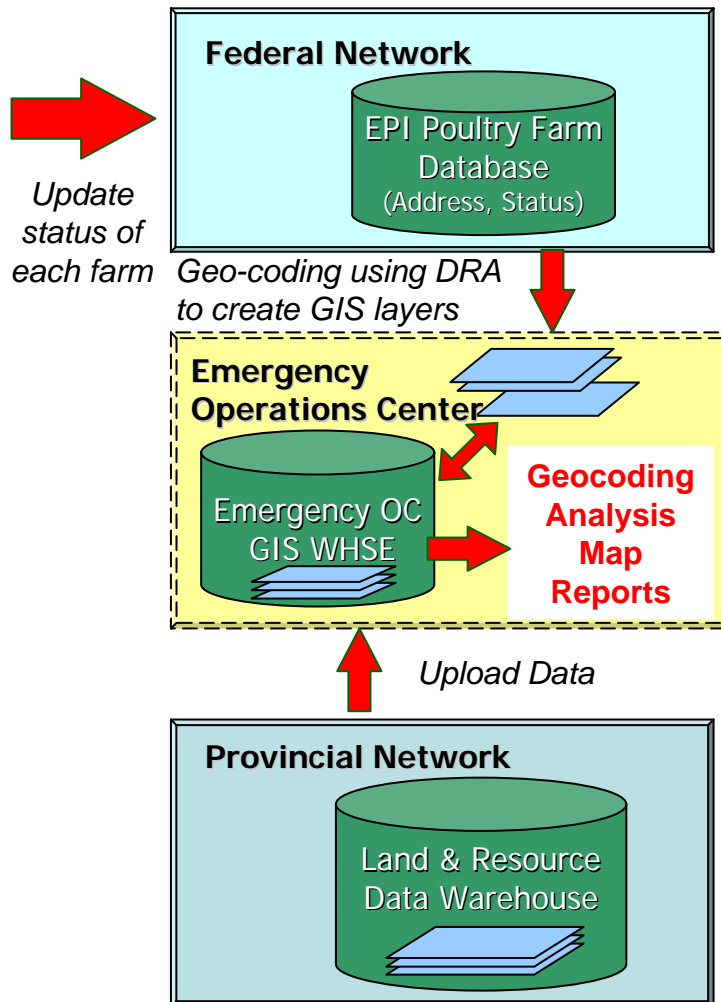
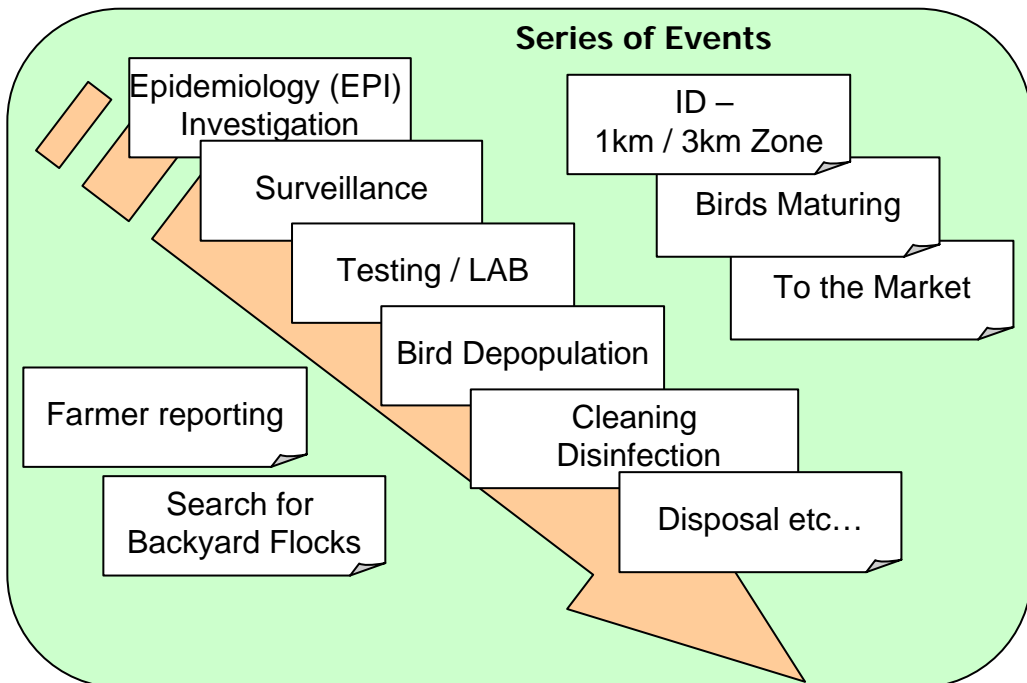


Avian Influenza – Key Players

- Provincial Emergency Program (PEP)
- Canadian Food Inspection Agency (CFIA)
- Health Canada
- Agri-Food Canada
- Ministry of Agriculture and Lands
- Integrated Land Management Bureau
- Local Governments
- Poultry Industry
- Marketing Boards
- RCMP and Other Police Forces

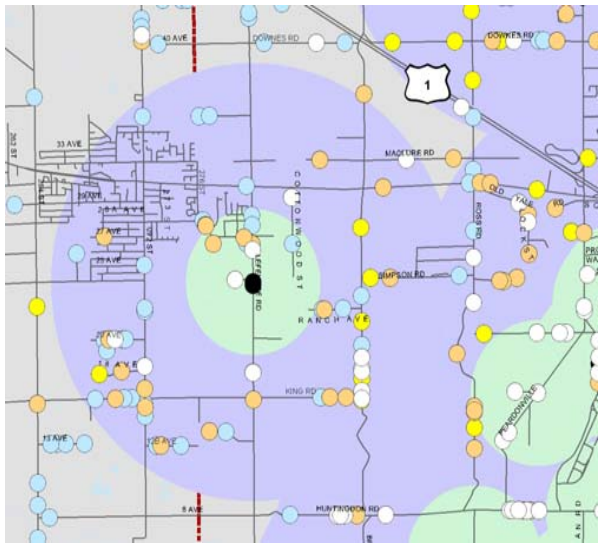


Avian Influenza Events and GIS Infrastructure



EPI Poultry Farm Database
(Location, Status)

Information Flow – EPI Database

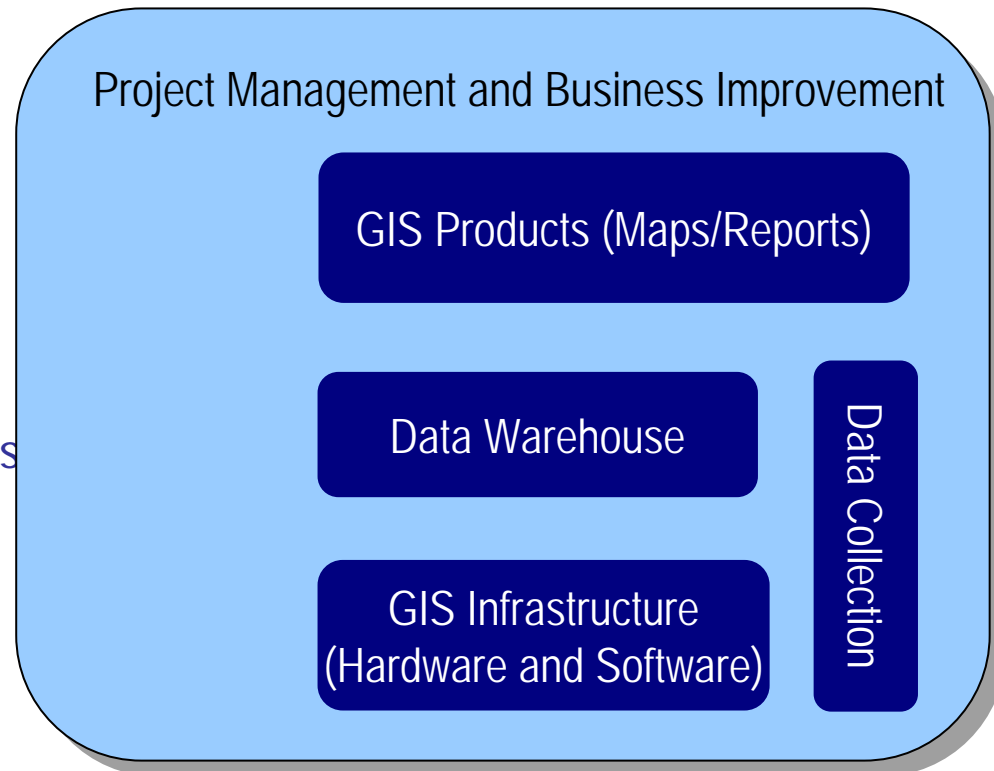


LEGEND

Commercial Operations	Back Yard Flocks	1km Buffer
Status	Status	3km Buffer
Infected	Infected	Municipality
Identified	Identified	
Exempt	Depopulated (Back Yard)	
Depopulation Verification		
Depopulation		

Overview of GIS Services

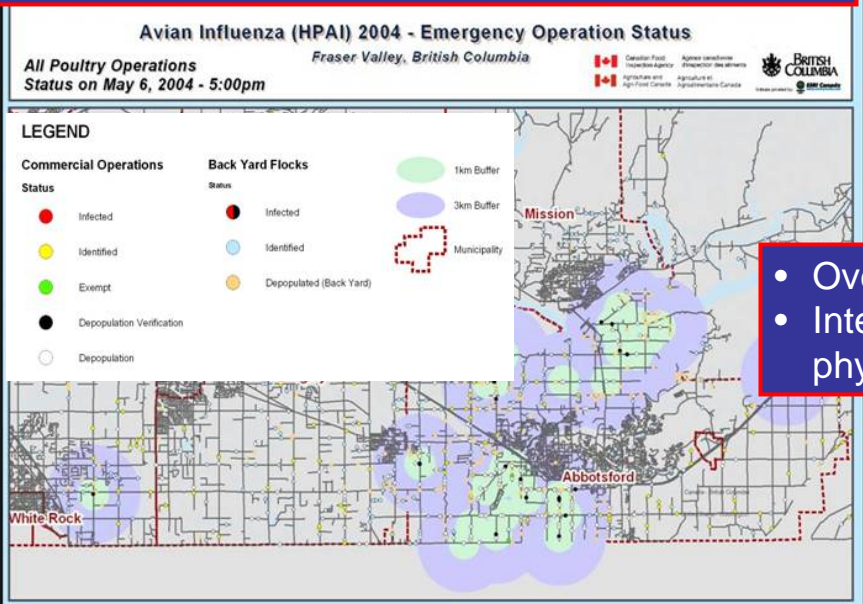
- Expand and improve GIS Infrastructure
- Integrate GIS systems
- Develop GIS data warehouse
- Support data collection process
- Creation of maps and reports
- Provide client-specific GIS services
- Establish and improve business process



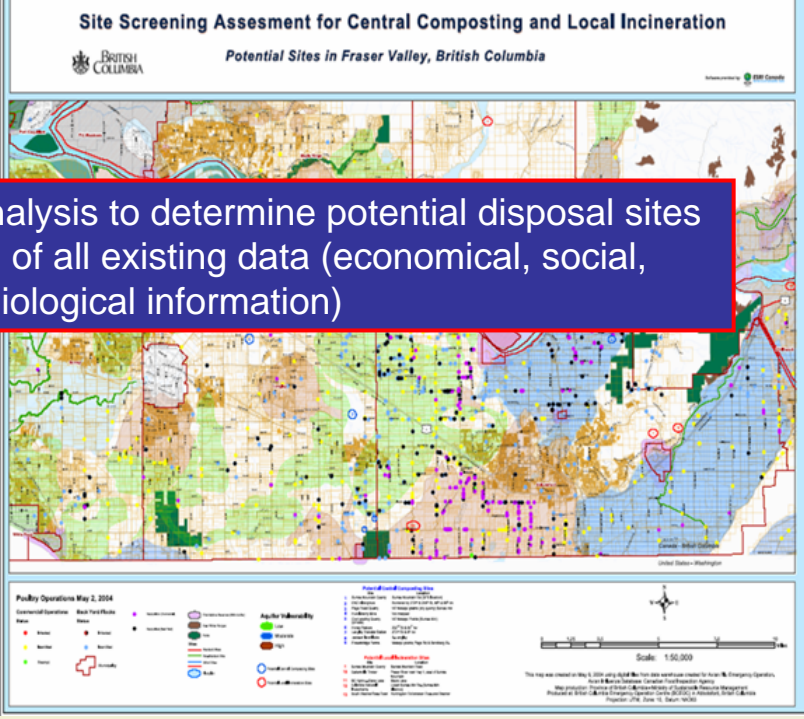
Integrated Information Products

- Spatial Identification of farm (Geo-coding)
- Visualization of disease spread and farm status
- Planning for surrounding 1km / 3km zones

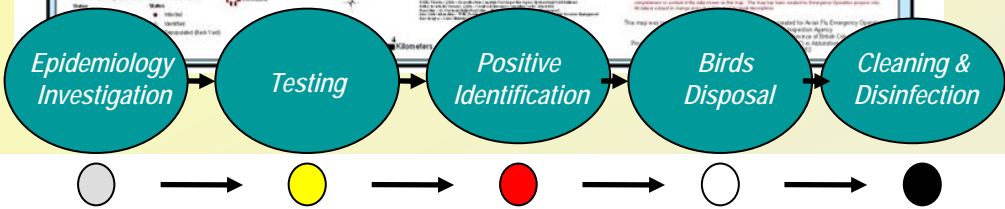
- Reports for EOC field staff – farms identified for investigation / disposal
- Road maps and access / security maps



ID	COMPANY NAME	Address	Contact
COM0000056	Flax Poultry Farm Ltd	43700 A Lane Road	Schla
COM0000046	Calypso Farms Ltd	4340 Tolson Road	James
COM0000048	Dukin Farms Ltd	6923 Chelvey Road	Rangel
COM0000040	Eco Valley Farms	43485 Leslie Wilson Road	Vanden Broek
COM0000042	Grove Poultry Ltd	7882 Coombs Road	Zorn
COM0000043	Heritage Farms		
COM0000047	Moh Poultry		
COM0000049	Polyer Farms Ltd		
COM0000046	Rangel Poultry		
COM0000042	Rural's Edge Poultry		
COM0000045	Summit Poultry		
COM0000047	TV		
COM0000047	VJ		
COM0000042	WJ		
COM0000054	ZN		
COM0000062	5A		
COM0000066	WJ		
COM0000716	FS		



- Overlay analysis to determine potential disposal sites
- Integration of all existing data (economical, social, physical, biological information)



Potential Farm Identified Farm Infected Farm Depopulated De-pop Verified

Status of Emergency Preparedness

We are better off than last time, but there's still a lot we could do

- Improve and integrate poultry information in a central database
- Develop, maintain and improve core information & emergency products
- Address remote data and software access
- Clarify roles and responsibilities
- Improved information security protocols
- Response personnel training on information services and roles
- Establish network, server and technical support procedures

Role of People and Technology

How people make it happen

- Professional staff with knowledge of business expertise in GIS/IT
- Capacity to rapidly integrate data from disparate sources
- Capability to produce relevant products for stakeholders (client focus)
- Full integration of information services in emergency organizational structure

How GIS/IT makes it happen:

- Access to current and reliable interagency & industry information
- Accurate base maps and development of standard emergency products (pre- event)
- Reliable network & infrastructure with 24*7 technical support
- Access to appropriate technical and hardware resources

BC Poultry Premise ID Initiative

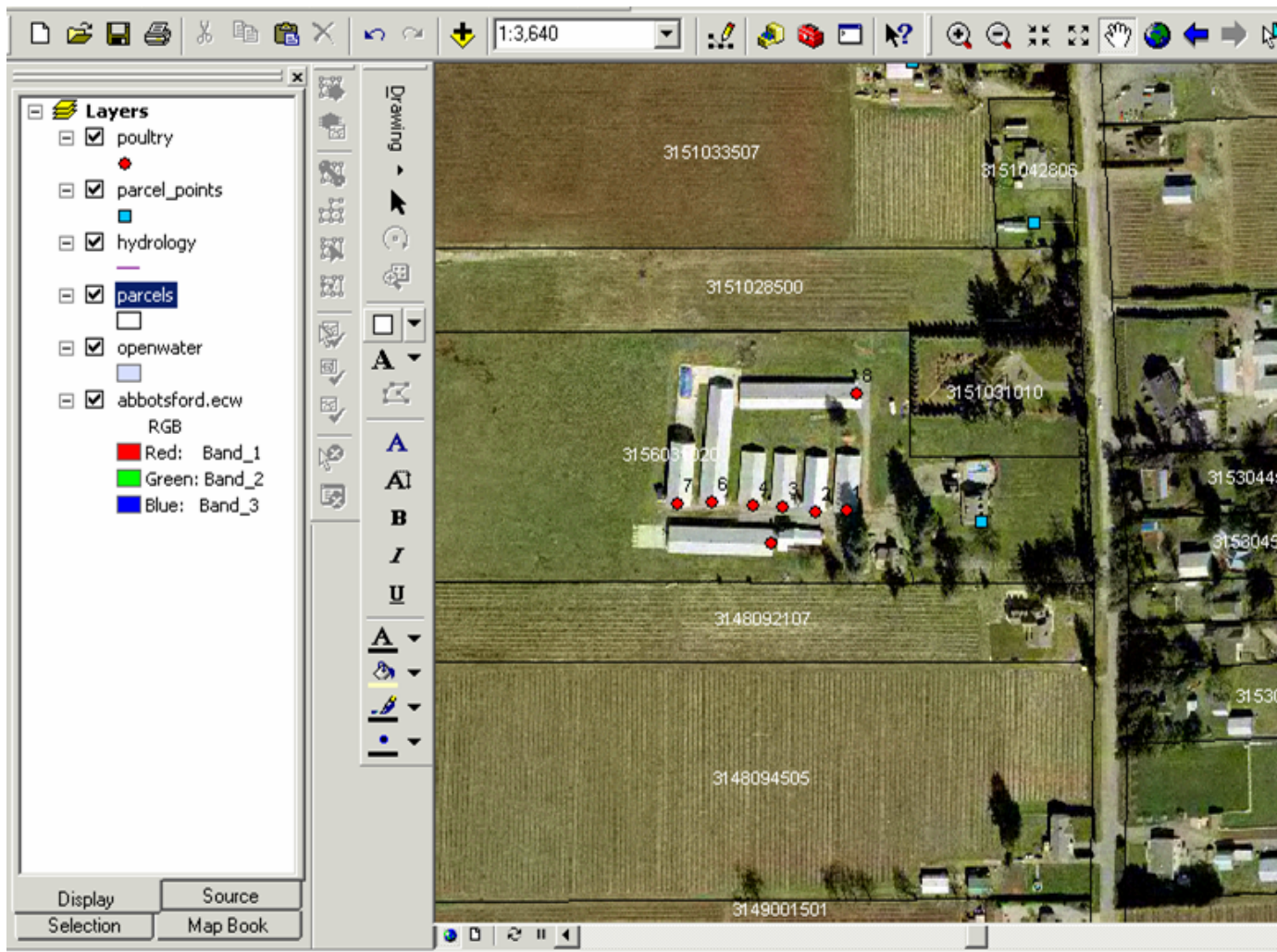
- Allocate National Premise ID for each farm
- Lead Agencies
 - Canadian Livestock Identification Agency (CLIA)
 - Canadian Cattle Identification Agency (CCIA)
- Premises “geo-referenced” – can be mapped quickly
- Business Contact information in central database

- Link to Lab Database in Emergency Situation

Premise ID Initiative - Objectives

- To accurately, efficiently and uniquely identify all commercial BC poultry premises and barns
- To ensure the process and database is concurrent with national initiatives (CCIA/ CLIA)
- To assign a national alpha-numeric ID to all premises and barns
- To physically identify the premises and barns with highly visible signage with the national Premise ID
- To work and communicate with various stakeholders towards the common goal of Emergency Preparedness




Identification of Farms



Identification of Farms

BC Poultry Premise Identification Initiative - Abbotsford Premises



-  Broiler
-  Broiler Breeder
-  Turkey

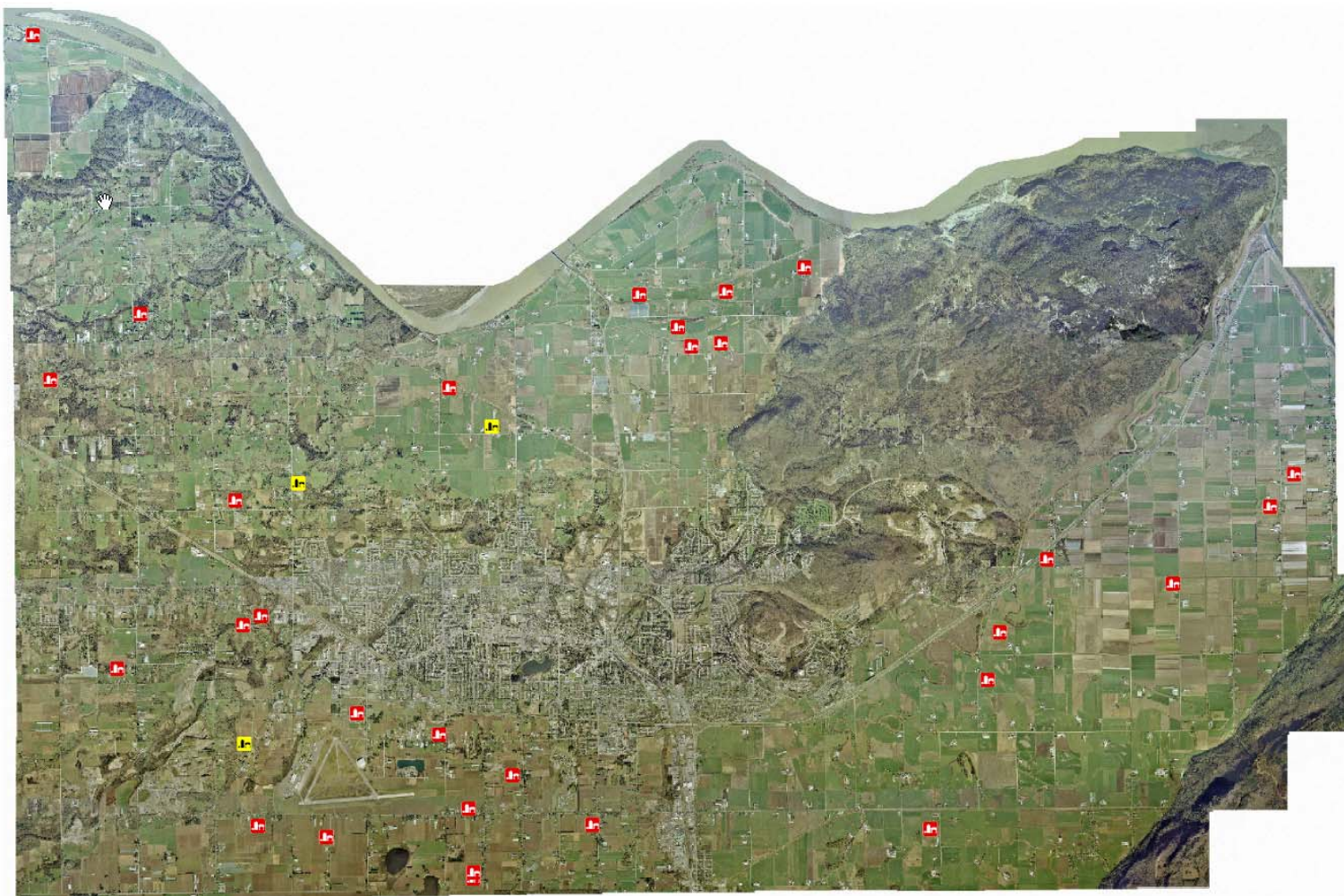
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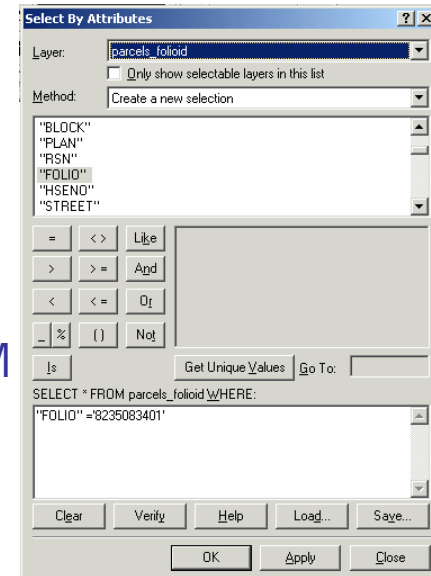
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Identification of Farms



Identification of Farms

- Mapping regulated poultry premises & transferring of contact information for 4 Poultry Boards in BC
- Parcels or Premises (about 600)
Barns or Sub-Premises (about 1800)
Specialty Birds Premises
- ArcGIS software used to identify premise and sub-premise and create a spatial data base
- Data sets included ortho photos, cadastre parcels and TRIM base information
- Premise and Sub-premise identified visually and assigned a point
- Quality Control through Poultry Board Staff
- Calculate Latitude and Longitude of each point
- Transfer of data to CCIA database – to be made accessible to all Poultry Boards via web



Attributes of poultry								
	FID	Shape*	Id	FOLIO_	x_utm	y_utm	Barn_ID	piltry_type
	0	Point	1	3156031020	549922	5430342	3156031020_1	bb
	1	Point	2	3156031020	549904	5430342	3156031020_2	bb
	2	Point	3	3156031020	549885	5430344	3156031020_3	bb
	3	Point	4	3156031020	549867	5430345	3156031020_4	bb
	4	Point	5	3156031020	549870	5430345	3156031020_5	bb

Key Data Sets

- BC Assessment Data
 - Assessment Area 15
 - Jurisdiction 324
 - Roll Number (Folio) 3156031020
 - FOLIO ID 153243156031020 = UNIQUE ID
- Cadastre (legal land descriptions)
 - Lot
 - Plan
 - Section
 - Township
- Business and Owner Contact Info (details on birds)

BC Poultry Premise ID Initiative

- CCIA: Premise Location Allocator (PLA)
- Web based system to register a premise location and receive a unique National Premise ID
- Legal land description
- Premise Usage (Farm, barn, hatchery, rendering plant etc)
- Sub-premises (i.e. barns): geo-coordinates



Premises Location Allocator

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[My Account](#)

[Premises](#)

[Contact Us](#)

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[Logout](#)

Username: Testaccount

Premises Registration (step 2 of 3): Location Details

Please enter the legal land location details for this premises.

Premises Location Information

Premises Description:

Geo-Code (lat/long): / (example: 51.10027 / -60.23456)

Legal Land Description:* **ONLY** those fields that apply to **YOUR** Legal Land Description
(min 3 fields)

Block :

Concession:

County:

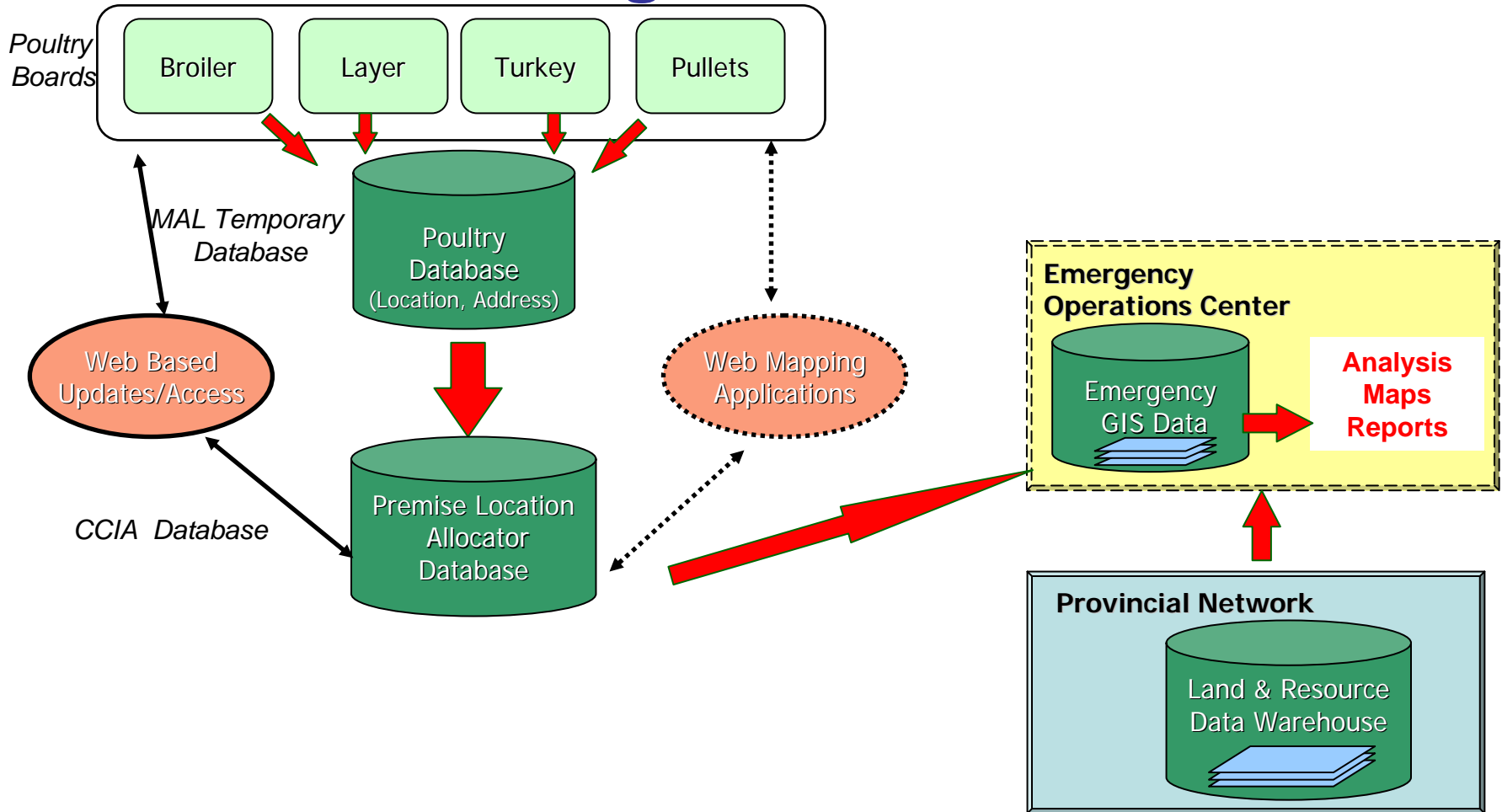
District Lot :

District :

Lot :

- Information secure
- Access controlled

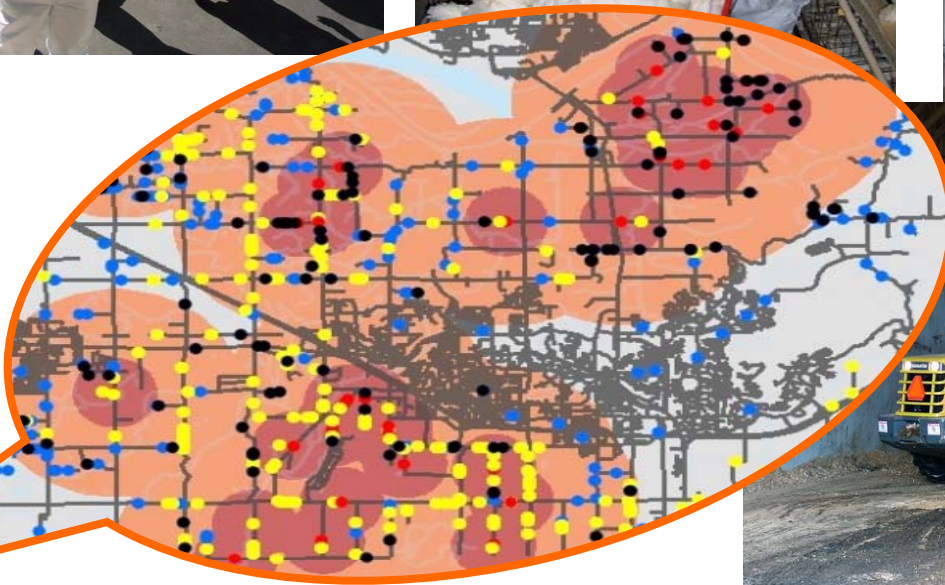
Data Management and Access



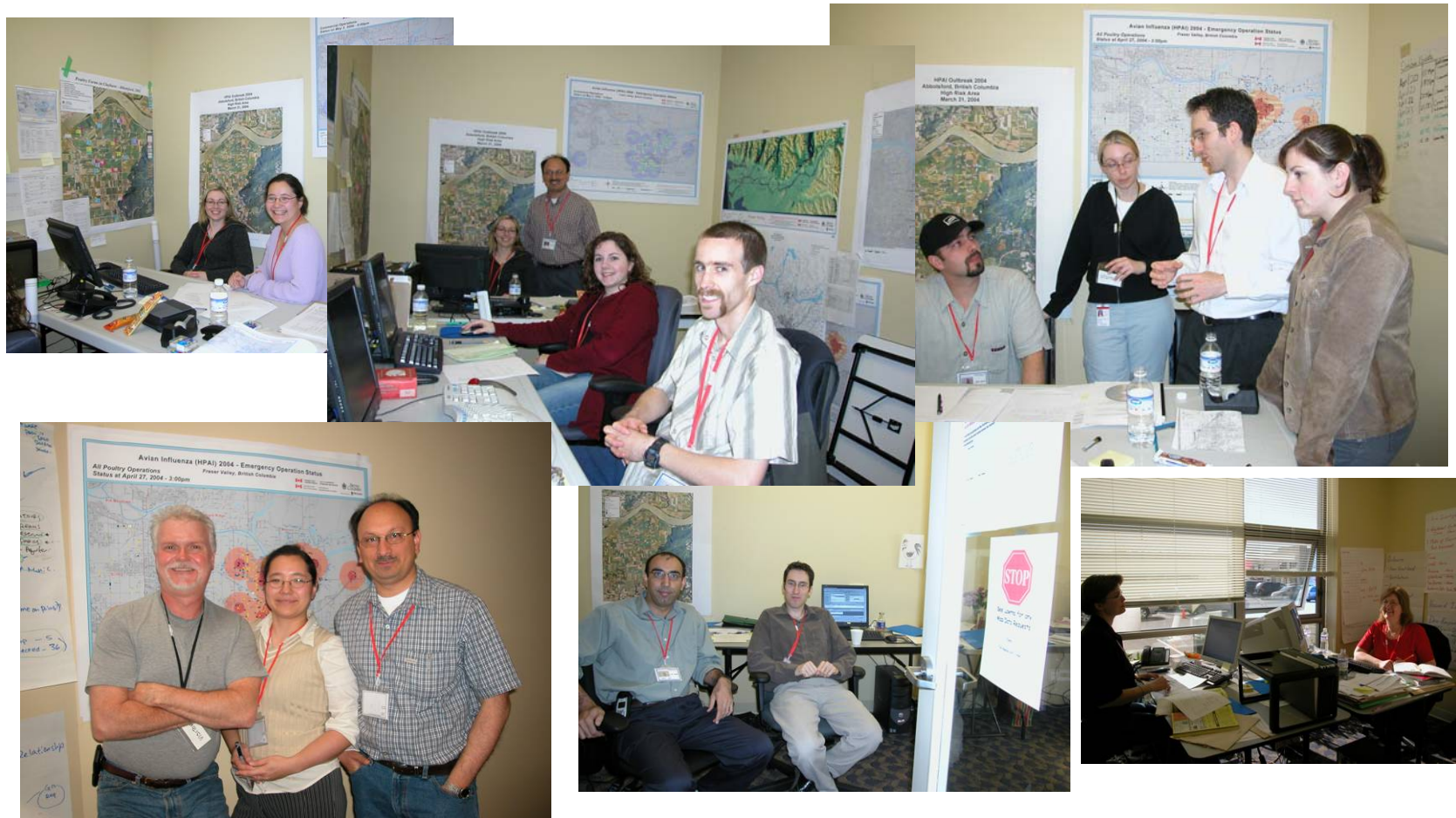
Summary

- **Integrated, complete** and **accessible** information enables effective emergency response
- A corporate perspective and interagency partnerships are key
- Investing in geospatial infrastructure (data, tools and applications) will assist in other areas
- Investment in staff for emergency training and preparedness is vital for success
- Stop reinventing the wheel for each new type of emergency – Develop and Share best practices





Cross Organizational GIS Team - Full Scale Production Environment



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Thank You