An Orthoimagery Program for ME

GeoLibrary Geospatial Work Group

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US Geological Survey

MAINE GEOLIBRARY

Agenda

- What is orthoimagery?
- Maine's Orthoimagery Program
- Examples
- Questions and Answers

MAINE GEOLIBRARY

Orthoimagery is aerial photography that has been processed to have:

- the positive attributes of a aerial photograph such as detail and timely coverage.
- the positive attributes of a map including uniform scale and true geometry.

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Typical Application: Parcels Over Orthoimagery

How is orthoimagery used?

- Town Mapping
- Update E911 Roads
- Assessing
- Transportation Planning and Maintenance
- Economic Development - Site Selection and Development
- Land Planning and Zoning
- Code & Permit Enforcement
- Public Works
- Public Safety & Emergency Management

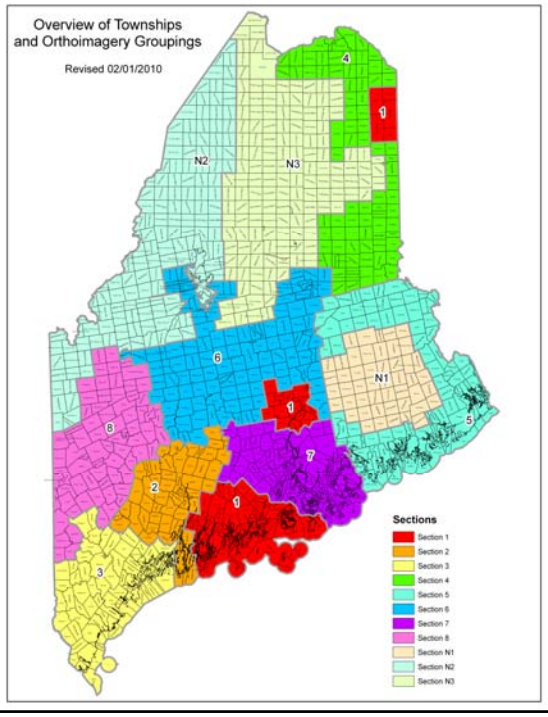
Very useful product for all levels of government, education, the private sector and the public, but no plan was in place to update the information.

Status

- 2003- 2005 statewide program.
- Costly individual town efforts.
- Few regional efforts in York and Cumberland Counties have reduce the cost per town.
- However, it continued to be a costly ad hoc process in Maine.

Orthoimagery Subcommittee

- *Dan Walters - Chair, US Geological Survey*
- *Sarah Tucker - Town of Bethel*
- *Tom Marcotte - Maine DOT, Office of Information Technology*
- *Brett Horr - Town of York*
- *Greg Miller - Maine Forest Service*
- *John Root - City of Rockland*
- *Larry Harwood - Maine Office of GIS, Office of Information Technology*
- *Brian Norris - James W. Sewall Company*
- *Ken Murchison - Northern Maine Development Corporation*
- *Sean Gambrel - City of Bangor*



Update Cycle:

Groups 1-3: every 3 years

Groups 4 – 8: every 5 years

Groups N1 – N3: every 5 years

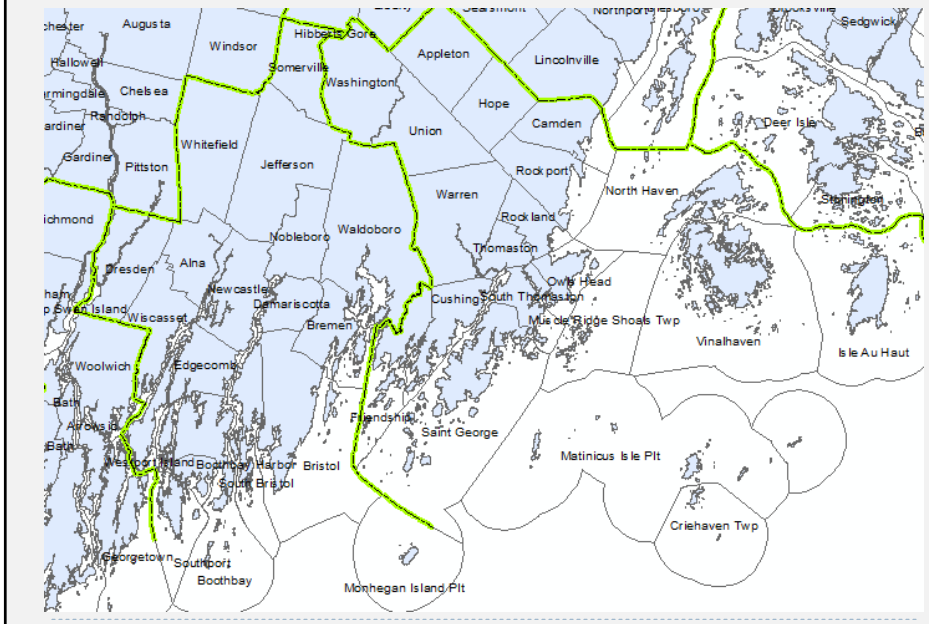
Resolution:

Groups 1 – 8: 2 foot resolution

Groups N1 – N3: 3.3 foot resolution

Funding:
Base program funded
by federal, state & county government

Local goverrnment can "buy up"
to better products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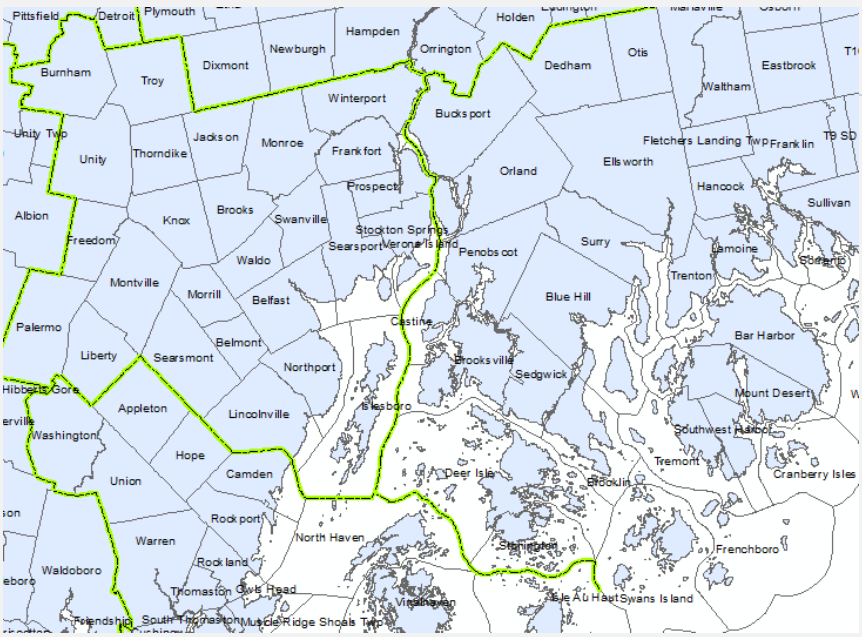
Windsor
Hibberts Gore
Somerville
Appleton
Lincolnville
Sedgwick
Hallowell
Washington
Hope
Chelsea
Randolph
Union
Camden
Deer Isle
Gardiner
Pittston
Whitefield
Jefferson
Rockport
North Haven
Warren
Stonington
Rockland
Nobleboro
Waldoboro
Thomaston
Dresden
Alna
Owls Head
Newcastle
Damariscotta
Cushing
South Thomaston
Muscle Ridge Shoals Twp
Wiscasset
Bremen
Vinalhaven
Isle Au Haut
Woolwich
Edgecomb
Friendship
Saint George
Matinicus Isle Plt
Westport Island
Boothbay Harbor
Bristol
South Bristol
Criehaven Twp
Georgetown
Southport
Boothbay
Monhegan Island Plt


Pittsfield
Detroit
Plymouth
Hampden
Holden
Orrington
Newburgh
Dixmont
Dedham
Otis
Eastbrook
Burnham
Troy
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Buckspport
Unity Twp
Jackson
Monroe
Frankfort
Fletchers Landing Twp
Franklin
Unity
Thorndike
Ellsworth
Orland
Prospect
Hancock
Albion
Knox
Brooks
Swanville
Sullivan
Stockton Springs
Freedom
Searsport
Verona Island
Penobscot
Surry
Waldo
Trenton
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Morrill
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Blue Hill
Palermo
Castine
Bar Harbor
Liberty
Belmont
Searsmont
Brooksville
Sedgwick
Northport
Mount Desert
Appleton
Lincolnville
Islesboro
Washington
Southwest Harbor
Hope
Tremont
Union
Camden
Deer Isle
Cranberry Isles
Rockport
Warren
North Haven
Stonington
Frenchboro
Rockland
Waldoboro
Thomaston
Owls Head
Isle Au Haut
Swans Island
Friendship
Muscle Ridge Shoals Twp

Program Recommendations

- 11 groups flown on a rotating cycle of 3 years (groups 1-3) or 5 years (groups 4-8 & groups N1-N3)
- Base resolutions of 2 foot (groups 1-8) and 3.3 foot (groups N1 – N3)
- Published schedule of when each group would be flown
- Facilitate buy-ups with funds from organizations interested in high quality products

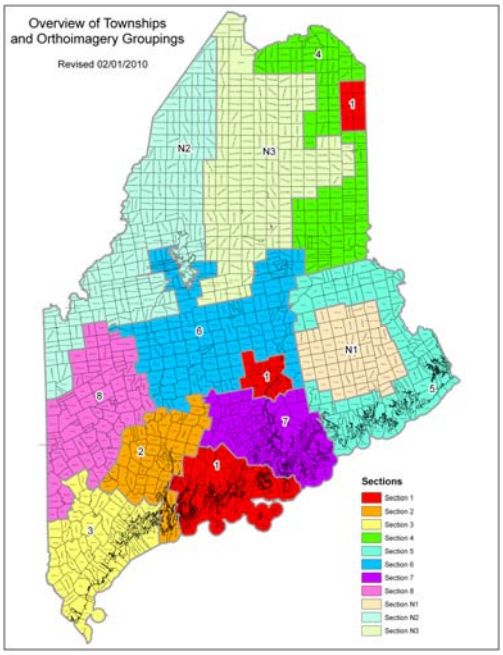
Three Very Important Aspects of Program

- Base program funded by federal, state and county dollars
- Organizations can "buy up" to improve deliverables
  - Pixel resolution – 1 foot, 6 inch, 3 inch
  - Improve horizontal accuracy
  - Color infrared
  - Oblique Imagery
  - LiDAR
- Published acquisition schedule to allow towns and other organizations to budget funds in time to participate

Program Status

- Program to start 2012
- 2012 > Groups 3, 4 & N1
- 2013 > Groups 2, 5 & N2
- 2014 > Groups 1, 6 & N3
- 2015 > Groups 3 & 7
- 2016 > Groups 2 & 8

- $10,000 from GeoLibrary
- Working with federal, state and county agencies for base funding for 2012 - 2013
- Towns can buy up



What are the costs of the base program?

		federal	state	county	town
			approximate cost per year		
Knox	3 year update	$9,000	$9,000	$9,000	$0
Lincoln	3 year update	$6,000	$6,000	$6,000	$0
Waldo	5 year update	$4,000	$4,000	$4,000	$0

- Towns can buy up to a different orthoimagery product
- Towns pay the difference between the base cost and cost of new product.

How do towns benefit?

- Orthoimagery subsidized by leveraging federal, state and county dollars for base program
- Regular updates at either 3 or 5 year interval
- Low costs due to economy of scale of statewide program and regional buy ups
- Administrative costs of program are shared across all stakeholders and no longer a local burden
- Financial participation from other stakeholders for buy-ups

How do counties benefit

- County wide coverage ensured to support
  - Law enforcement
  - Emergency Management
  - Public Safety
  - Registry of deeds
- Valuable service provided to all communities
- Leverage local buy ups to get better data

Status

- Vendor selected and contract being negotiated
  - Will have buy-up costs in a week or two
- GeoLibrary committed $10,000 seed funding for first year
- Application submitted for USGS partnership funds
- Meetings with key state agencies underway
- Meetings with county commissioners about 50% complete
  - Presentation made to Knox County Commissioners

2 foot orthoimage at design map scale of 1:4800

National Map Accuracy Standard Horizontal accuracy is 13.33 feet

2 foot orthoimage displayed at 1:2,400

National Map Accuracy Standard Horizontal accuracy is 13.33 feet

2 foot orthoimage displayed at 1:1200

National Map Accuracy Standard (NMAS) Horizontal accuracy is 13.33 feet

“Buy-up” - 1 foot orthoimage displayed at 1:600

ASPRS class 2 horizontal accuracy 2 feet

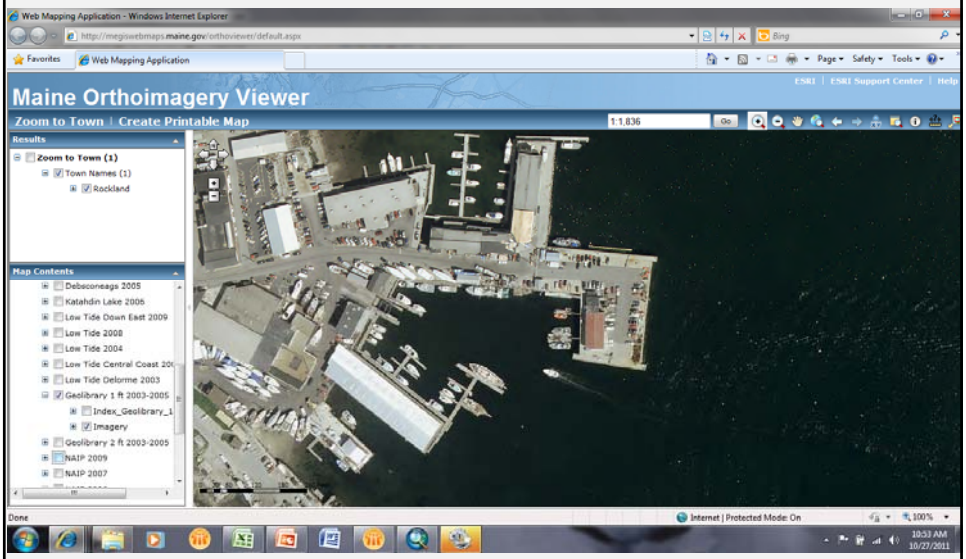
“Buy-up” 6 inch orthoimage displayed at 1:600

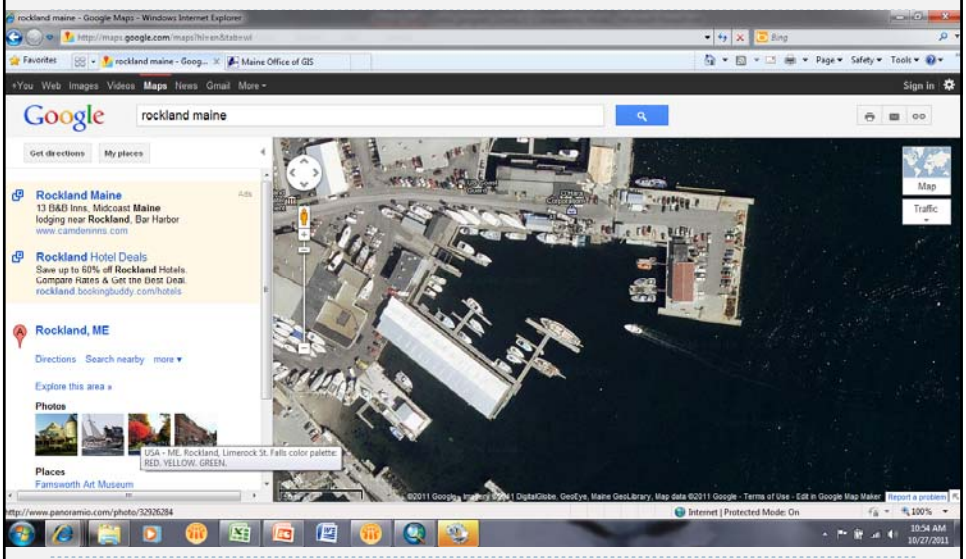
ASPRS class 2 horizontal accuracy 1 foot

A few myths about orthoimagery

NAIP displayed at 1:600

NMAS horizontal accuracy 22 feet


Web Mapping Application - Windows Internet Explorer
Maine Orthoimagery Viewer
Zoom to Town | Create Printable Map
Results
Zoom to Town (1)
Town Names (1)
Rockland
Map Contents
Debsconeags 2005
Katahdin Lake 2006
Low Tide Down East 2009
Low Tide 2008
Low Tide 2004
Low Tide Delorme 2003
Geolibrary 1 ft 2003-2005
Imagery
Geolibrary 2 ft 2003-2005
NAIP 2009
NAIP 2007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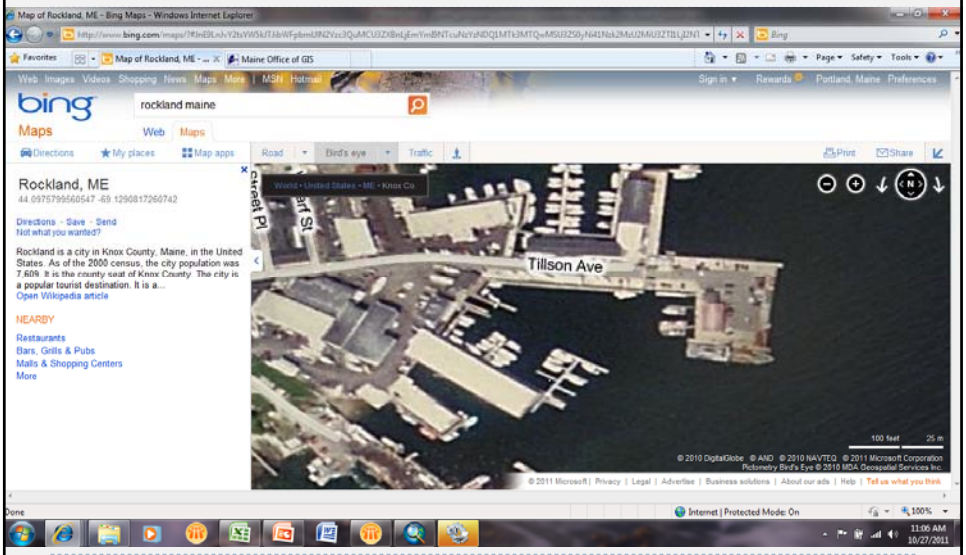
Traffic



Comments or Questions?