

# VT Statewide Parcel Mapping Workgroup

Parcel Development ROI  
and Parcel Lifecycle Management  
Approach

# Agenda for Today

- Introductions
- Overview of Return on Investment Project Scope and Approach
- Overview of Parcel Lifecycle Planning Project Scope Approach
- Discussion/Questions

# Introductions

- Leslie Pelch, VCGI
- John Roache, AppGeo Project Manager
- Rich Grady, AppGeo ROI Subject Matter Expert
- Kate Hickey, AppGeo Parcel Subject Matter Expert

# AppGeo's Parcel and ROI Experience

- VTrans Right of Way Return on Investment Study
- Massachusetts Parcel Business Plan
- Connecticut Statewide parcel development and parcel maintenance for 50+ Towns
- Massachusetts parcel conformance and maintenance for 50+ Towns
- Maine Return on Investment for Orthoimagery
- Minnesota Parcel Business Plan
- New Jersey “Core Four” Biz Plan (included parcels)

# AppGeo's Parcel and ROI Experience

**RIGHT OF WAY  
DATA MODERNIZATION SERVICES:**

**ROI STUDY FINDINGS**

12/15/13

WRITTEN FOR:

**VERMONT AGENCY OF TRANSPORTATION (VTRANS)**

BY:



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## Business Plan for Statewide Parcel Data Development & Maintenance For the Commonwealth of Massachusetts

June 2011 (rev Oct. 2011)

produced by



For



Part of the Information Technology Division

This Plan was funded by the US Geological Survey

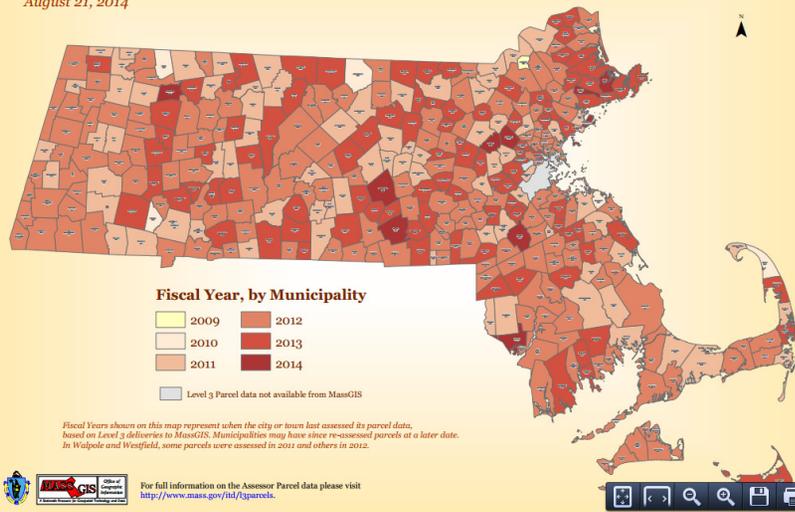
Through a National Spatial Data Infrastructure Cooperation Agreements Program Grant

Award # G10AC00174

This document was produced by Applied Geographics, Inc. (AppGeo) under contract to the Commonwealth of Massachusetts.

## Fiscal Year Assessment of Level 3 Parcels

August 21, 2014



## MAINE GEOLIBRARY ORTHOIMAGERY PROGRAM



### Return on Investment Analysis for Maine GeoLibrary Orthoimagery Program

Produced for the Maine GeoLibrary Board by Applied Geographics, Inc., (AppGeo) with Sebago Technics

Orthoimagery is geometrically corrected aerial imagery that provides a comprehensive view of the earth's landscape and features. The business case for investing in a recurring statewide orthoimagery program for the State of Maine is clear:

- The economies of scale of a statewide program dramatically reduce the cost per participating organization in both the short and long term
- Collaboration between organizations provides orthoimagery at a lower cost, higher resolution, and on a better schedule – all of which improves the availability and usefulness of the data
- There is no suitable substitute for meeting the State's business and operational needs – commercial websites popular with citizens, such as Google Earth and Microsoft Bing, depend largely on publicly funded imagery as a resource

The results, based only on these three use cases, make an economically compelling case for investment with net benefits totaling \$10 million on the low-end, to \$30 million on the high-end. This range compares very favorably to the expected costs for the corresponding five-year time period of \$2.4 million. *The resulting return on investment (ROI) is projected to be 435% to 1286% based on this range, which would exceed the returns on many other alternative financial investments.* If all thirteen use cases were similarly analyzed, it is safe to say that the total ROI would be substantially higher.



Conceptual diagram of Cost-Benefit Analysis components.

Based on a conservative analysis of just 3 of 13 sectors using aerial imagery, this investment still showed a return of over 400%.

This analysis presents a strong case for the public sector

Cost-Benefit Analysis - "Low"	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Benefits "Low"	\$2,623,006	\$2,537,954	\$2,557,039	\$2,713,850	\$2,480,814	\$12,912,664
Costs	\$475,852	\$593,802	\$690,670	\$315,993	\$335,249	\$2,411,566
<b>NET PRESENT VALUE</b>	<b>\$2,147,154</b>	<b>\$1,944,152</b>	<b>\$1,866,369</b>	<b>\$2,397,857</b>	<b>\$2,145,566</b>	<b>\$10,501,098</b>
<b>Return on Investment (ROI) "Low"</b>	<b>4.35</b> If this result is greater than "0" it is favorable for investment					

Cost-Benefit Analysis - "High"	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Benefits "High"	\$6,766,742	\$6,627,392	\$6,645,268	\$6,869,290	\$6,508,588	\$33,417,767
Costs	\$475,852	\$593,802	\$690,670	\$315,993	\$335,249	\$2,411,566
<b>NET PRESENT VALUE</b>	<b>\$6,290,889</b>	<b>\$6,034,078</b>	<b>\$5,954,598</b>	<b>\$6,553,297</b>	<b>\$6,173,339</b>	<b>\$31,006,201</b>
<b>Return on Investment (ROI) "High"</b>	<b>12.86</b> If this result is greater than "0" it is favorable for investment					

The resulting return on investment (ROI) is projected to be 435% to 1286% based on this range, which would exceed the returns on many other alternative financial investments.



Importance of current aerial imagery as source for land use change detection.



For full information on the Assessor Parcel data please visit <http://www.mass.gov/hd/sparecs>.



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# ROI Project Purpose

To **assess and document the value** of Statewide Parcel Data in GIS format in **quantifiable** terms and use the results to **provide business value and cost justification** to decision-makers.

# ROI Project Approach

## *Step 1*

Identify **specific stakeholders** and gather input on value of statewide digital parcel data

- Looking for stakeholders at each level of government, and the private sector
- Online survey to get input on costs/benefits
- Facilitate 3 half-day workshops in different parts of the state
- Interviews for “deep dive” on key use cases

# ROI Project Approach

## Step 2

Identify **use cases for cost-benefit analysis** and pick a subset for in-depth study and to determine who we need to interview.

*For example:*

- More accurate and equitable tax assessment
- Planning support for regional/state programs, such as broadband, energy, transportation
- Validation Right-of-Way boundaries
- Support for economic development and mortgage distress indicators
- Support for natural resource management and permitting
- Services for property owners and citizens in general

# ROI Project Approach

## *Step 3*

**Calculate** overall Statewide Parcel Data **costs and benefits** for each use case.

- Costs associated with Statewide Parcel Data (e.g. collection, aggregation, data services, etc.)
- Benefits of digital parcel data (e.g. cost avoidance, increased productivity, higher quality results, time savings)
- Potential advantages (i.e. increased benefits relative to cost) of achieving Level 2 compliance over Level 1

# ROI Project Approach

## Step 4

Combine the benefits and costs into the **Net Present Value (NPV)** and **Return on Investment (ROI)** calculations

### NPV Calculation

The Net Present Value (NPV) is the difference between the present value of benefits and the present value of costs.

$$NPV = \sum [(B_t - C_t) / (1 + r)^t]$$

### ROI Calculation

Using the results of the NPV calculations as inputs, the ROI formula is:

$$\frac{\text{Discounted Benefits} - \text{Discounted Costs}}{\text{Discounted Costs}}$$

# ROI Project Approach

## *Step 5*

Writing the ROI report and presenting the findings.

# Parcel ROI Project Discussion

## *Other Important Info & Questions*

- Timeline: Goal is to complete within 3 months of start date
- Will need input from this group to identify key stakeholders and choose best representative use cases for “deep dive”

# Parcel Lifecycle Project Purpose

Develop a **programmatic approach and implementation plan** for the ongoing development, integration and maintenance of Statewide Parcel Data.

# Parcel Lifecycle Project Scope

Establish a **Program Management Plan** that addresses:

- Coordination and governance of key stakeholders
- Strategic and organizational approach
- Funding mechanisms
- Risks

# Parcel Lifecycle Project Scope

Design an **Implementation Plan** that includes:

- Assess existing technology infrastructure and organizational framework
- Gap analysis and quality assessment of existing parcel data
- Technical approach
- Evaluation of burden (cost, workflow, capacity) on municipalities and budget needs
- Review of standards and best practices for parcel data management