

Digital Tax Maps Westport Island Project Summary

Presented to the:

Mid-Coast Regional Planning Commission

*Creating GIS-Based Digital Tax Maps
And Linked Assessment Records
For Small Towns on a Budget*

*Dennis Dunbar
Westport Island*

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Digital Westport Island Summary Tax Maps –

- Project Initiated in 2007 to replace hand drawn tax maps last updated in 2002 by John E. O'Donnell & Associates.
- Town Meeting authorized \$1,809 for project.
- Two GIS software firms considered
 - DeLorme X-Map 5.2 GIS (\$809)
 - ESRI ArcView GIS (\$1200)
- DeLorme selected due to lower cost and local training & support (Plus work done on Westport Island tax maps as demonstration)
- Two training sessions conducted in 2007/2008
- Project Completed in Dec. 2008 and put on-line in Jan. 2009

In a Nutshell, here is the process:

1. Decide if digital tax maps will benefit your community.- Consider cost, skills available, on going maintenance.
2. Decide if you are going to do it yourselves, or contract for the work.
3. Select the software that will meet your needs (see list).
4. Get training from the software developer.
5. Gather the data available (old manual tax maps, subdivision plans, deeds for splits, commitment book etc.)
6. Input data into the software- watch maps develop! Fun but takes time!
7. Link parcels to attributes table from your commitment report.
8. Add other layers of interest from Maine GIS library or your internal zoning or resource sources.
9. Decide if you want to host your data interactively on the web or post pdf copies.
10. Update information based on 1 April status of parcels and updated assessments and commitment report.

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There are Several Choices for Software to Consider

Software	Approx Cost	Display	Query	Prints	Complex Maps	Create-Edit Data	Basic Analysis	Advanced Functions	Spacial Modeling	Imaging Analysis
ArcExplorer (ESRI)	Free	✓	✓	✓						
GeoMedia Viewer (Intergraph)	Free	✓	✓	✓						
CartoMap Viewer (Cartoworld)	Free	✓	✓	✓						
My World (Pasco)	\$100	✓	✓	✓						
XMap/ GIS Editor (DeLorme)	\$800	✓	✓	✓	✓	✓	✓			
ArcView (ESRI)	\$1,300	✓	✓	✓	✓	✓	✓			
MapInfo (MapInfo)	\$1,300	✓	✓	✓	✓	✓	✓			
AutoCad Map 3D (AutoDesk)	\$4,000	✓	✓	✓	✓	✓	✓	✓		
GeoMedia Pro (Intergraph)	\$7,800	✓	✓	✓	✓	✓	✓	✓		
ArcGIS/ArcInfo (ESRI)	\$10,000	✓	✓	✓	✓	✓	✓	✓	✓	✓
GRASS (GNU public license)	Free	✓	✓	✓	✓	✓	✓	✓	✓	✓

This display is intended only to give those unfamiliar with GIS software and functions a brief overview of approximate cost and functionality. As such it necessarily contains some simplifications of complex functions. Anyone interested in detailed information and pricing is urged to contact these vendors directly.

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- Existing tax maps and subdivision plans scanned into digital format images and imported into software.
- Images superimposed on aerial images (“registered”) and stretched to exactly match firm geographic reference points (roads, shorelines etc.) (“rubber sheet”)
- Each Parcel is traced (“vectored”) onto digital Tax Map layer so that it becomes an electronic shape (“polygon”).
- Each parcel is also given a unique identifier (map and lot number) that can be linked to the Commitment Book.
- Commitment Book data is imported, and linked as “attributes” to the map and lot number identifier.

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Digital Tax Maps – Westport Island Summary

- Parcels that are not shown on existing plans can be “drawn” using deed “metes and bounds” and the software’s “measure” tool, then traced (vectored) into the database.
- Software calculates parcel area (sq. km or acres if converted) for comparison to tax card’s assessed area and frontage.
- Changes can be made easily with “edit” tools for correcting geometric errors or for subsequent lot splits or subdivisions.
- Once the digital tax maps are done, you can add other layers for natural and community resources. (zones, cemeteries, wetlands, ponds and streams, trails, preserves, topo contours, soil types, aerial images, etc. (see Maine GIS Library)

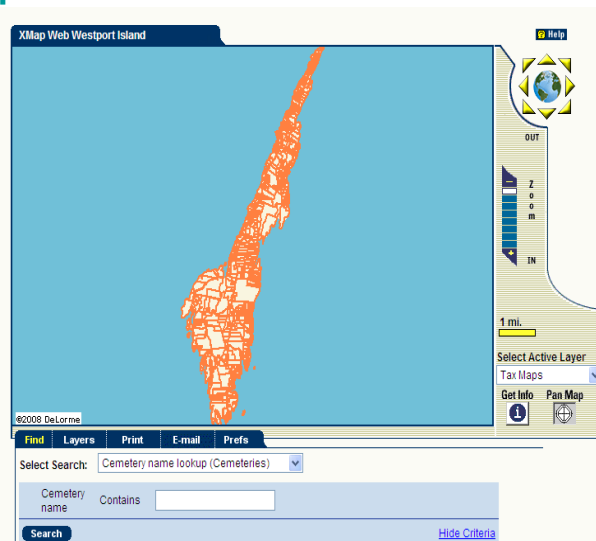
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Some Additional Thoughts:

- For even lower costs, look into Open Source Software
One big deterrent for many small organizations to using GIS is software cost. However, for simple GIS tasks there are several open-source GIS applications that can be useful, including desktop GIS packages such as;
 - Quantum GIS (QGIS)
 - Map Window
- To View Westport Island's Digital Tax Maps and GIS Mapping Tools, see www.westportisland.us
- To View a Sample of ArcGIS for the town of Greeley Colorado's property records, see <http://gis.greeleygov.com/origin/propinfo.html>
- To View Digital Tax Maps using EIS Software for the Town of Ellsworth, see <http://eisweb.woodardcurran.com/ellsworth/> (no longer active?)
- To View Tax Maps for Other Maine Towns, see <http://publicrecords.onlinesearches.com/Maine-GIS-and-Mapping.htm>
- For More GIS Information, Consider the Maine GIS Users Group (MEGUG) <http://www.megug.org>

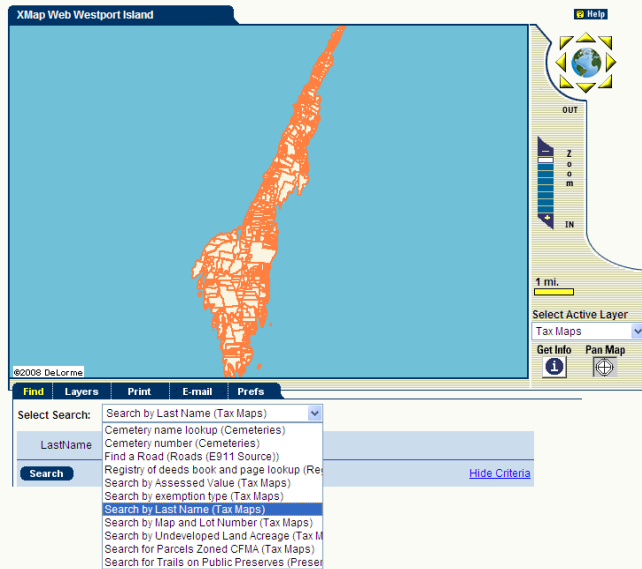
7

Opening Page of Interactive Web Page for Westport Island



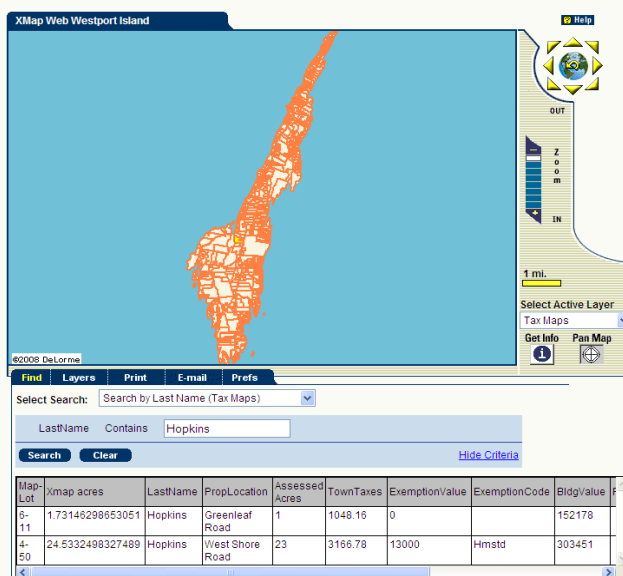
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To search for information, click “Find” tab for options available



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To search for a name, type in name of interest and click “Search”



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Select parcel of interest from list provided, and map will automatically zoom to it and show assessment data

The screenshot shows the XMap Web Westport Island interface. On the left, a data table lists various fields and values for a selected parcel. The map on the right shows the parcel highlighted in yellow, with surrounding roads and other parcels labeled. The interface includes a search bar, a layers tab, and a data table.

Field	Value
LatLon	43.90362, -69.71004
Label	4-50
Map-Lot	4-50
Xmap	24.5332498327
acres	23
LastName	Hopkins
PropLocation	West Shore Road
Assessed	23
TownTaxes	3166.78
Exemption/value	13000
ExemptionCode	Hmstd
Bldg/value	303451
Perprop	
Land/value	350598
Taxable/value	641049
Registry	
Book	
Page	

Map-Lot	Xmap	acres	LastName	PropLocation	Assessed	TownTaxes	Exemption/value	ExemptionCode	Bldg/value
5-11	1.73146298653051		Hopkins	Greenleaf Road	1	1048.16	0		152178
4-50	24.5332498327489		Hopkins	West Shore Road	23	3166.78	13000	Hmstd	303451

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Select layers tab to add more GIS data, including aerial images

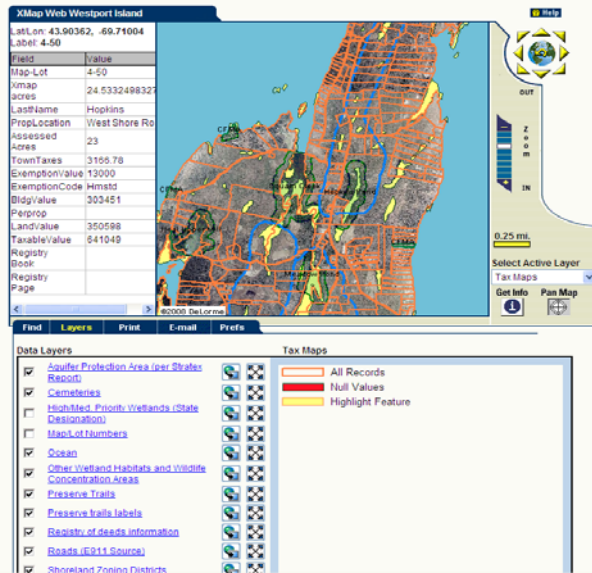
The screenshot shows the XMap Web Westport Island interface with the Layers tab selected. The map on the right shows the same parcel highlighted in yellow, but now with additional GIS data layers overlaid, including aerial images and various colored overlays. The interface includes a search bar, a layers tab, and a data table.

Field	Value
LatLon	43.90362, -69.71004
Label	4-50
Map-Lot	4-50
Xmap	24.5332498327
acres	23
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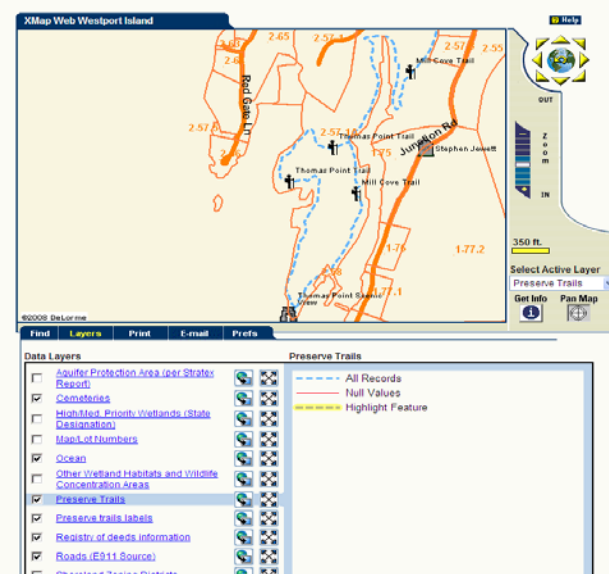
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You can use the “Zoom” and “Pan” tools to navigate the area



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Try the other layers by “Select Active Layer”, like “Preserve Trails”



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Use “Get Info” tab to get data in Active Layer like Jewett Cemetery

XMap Web Westport Island

LatLon: 43.87231, -69.71947
Label: Stephen Jewett

Field	Value
Latitude	43.87231896
Longitude	-69.71946704
Cemetery	js
Number	35
Names on stones	http://www.westportisland.com
Cemetery name	Stephen Jewett

40008 DeLorme

Data Layers

- ☐ Aquifer Protection Area (per Strates Report)
- ☒ Cemeteries
- ☐ Highest Priority Wetlands (State Designation)
- ☐ Map of Numbers
- ☐ Ocean
- ☐ Other Wetland Habitats and Wildlife Concentration Areas
- ☐ Preserve Trails
- ☐ Preserve Trails Labels
- ☐ Register of deeds information
- ☒ Roads (E911 Source)
- ☐ Shoreland Zoning Districts

Cemeteries

- ☐ All Records
- ☐ Null Values
- ☐ Highlight Feature

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You can imbed “hyperlinks” in your “info” tables to access more information, like this pop-up table of the engravings on headstones.

36 STEPHEN JEWETT CEMETERY

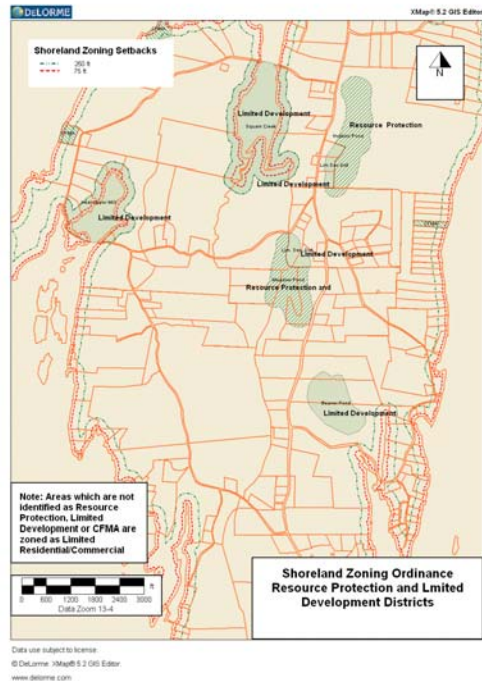
Location: Junction Road. Large cemetery on left behind stone wall paralleling road.
N 43° 52' 33" W 69° 43' 16"

1. Mr. Stephen Jewett ; D Jul 27, 1845 ; Age 52 Y
2. (Mother) Mary wife of Stephen Jewett ;
D Jun 16, 1877, Age 80 Y
3. Henry Jewett ; D Apr 27, 1855 ; Age 30 yrs 7 mos
4. Henry Edgar son of Samuel & Keriah M Armstead ;
Died Jul 22, 1846 Age 5 mos 5 dys
5. Benjamin Franklin son of Benj & Nancy Pinkham ;
Died Jul 31, 1847 Age 5 yrs 8 mos
6. Sarah A. daughter of Benjamin & Nancy Pinkham ;
D Oct 25, 1849 ; age 14 yrs
7. Grace G. Died Sept 12, 1853 Ae 2 mos
Jenette D Oct 2, 1853 Age 2 yrs 2 mos 7 ds
Children of Henry & Abby Jewett
8. Oscar C. son of D O & Mary E Davis ;
died Sep 14, 1855 ; Age 3 yrs 9 mos
9. Herbert D. son of D O & Mary E Davis ;
died Sep 3, 1856 Age 1 Y 2 M
10. Mary D. daughter of David O & Mary E Davis ;
11. Died Sep 30, 1861, age 1 yr 11 mo
12. Capt. Moses Jewett ; D Oct 29, 1901 ; Age 88 yrs 5 mos 16 dys
13. Monument Jewett
Capt. George A. Jewett ; 1841 - 1913
Eliza A. his wife 1850 - 1932
Burton B. son of Capt. George A & Eliza A. Jewett 1868 - 1911
Helen S. wife of Charles A. Thome 1873 - 1912

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Create Maps From GIS Data

- Zoning Maps
- Replica Paper Maps
- Natural Resource Maps
- Beginning with Habitat
- Parks and Preserves
- Buffer Analysis
- Sorts by Valuation
(or any parameter)
- Response to Abatement Requests



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Digital Tax Maps – Westport Island Summary

This summary outlines Westport Island's experiences (scars and all) with creating digital tax maps. Our effort was all volunteer, with the only expense being the cost of the software (about \$800) we purchased from DeLorme in Yarmouth plus some data DeLorme had compiled on Westport (about \$200) and some training (about \$500). There are at least two software companies you can choose from (DeLorme's X-Map and ESRI's Arc software). Most towns use ESRI, as does the State, which offers a small discount. Since we were on a tight budget, we chose DeLorme, which was cheaper (\$800 vs. \$1200) and was local.

In our case, we were faced with a costly update to our old manually drawn tax maps. We got town approval to replace the manual maps with digital maps that would be kept up to date more easily each year and linked to our Commitment Book. Once we got that basic task done (a couple hundred hours of volunteer time), we saw the other features that could be added in "layers" to the map database using GIS tools and sources. We decided to share the data with all of our residents and local businesses by posting the information on our web site, using DeLorme's hosted server (cost: \$1000/yr). You may want to take a look at www.westportisland.us to see what is available to us. Open the tab "Digital Maps" once you have read the information on the tab "How to Use Maps". You can see all the interactive capabilities that are available. (See "Find" searches available, and "Layers". You can click, when in "Find" mode, on any lot on the map, and you will be taken to it (zoomed) and can see the Commitment Book info. You can also layer on topo "contours", "Westport Island Images" (aerial photos), "cemetaries", "wetlands" etc.

By the way, none of the folks volunteering on our project were "computer experts". We received some basic training by DeLorme (two sessions) then learned by doing. Our core group consisted of three people. One of our team members was pretty knowledgeable about data bases (Excel and Access) and did the data linking for us.

You will need to start with aerial images and town boundaries (see Google Earth for what Maine GIS provides for your town) then add e-911 roads (Maine GIS (MGIS) file) and other landmark MGIS files like streams, wetlands, boundaries etc. Then you will want to gather together all the surveys, subdivision plans etc you can find and scan them and import them into the program. You can "rubber sheet" register them on the aerial images and trace the lots on a "Tax Map" layer. Where you have no drawings to go by, you will need to pull deeds and draw the "metes and bounds" described on the deeds. The aerial images, roads and other reference layers will be good guide in many cases. All of this is time consuming (but kind of fun once you get the hang of it). We had to do all of these things, even though we had an old tax map to start with, since we had several new subdivisions, lot splits, lot combines etc. When the lots are drawn, you can see what is calculated for acreage and compare that with your tax cards. Large variances can then be researched and corrected. The lots will need to be labeled in a manner that matches your Commitment Book. You can import the Commitment Book data, as we did, and link that data to the lot labels. Voila, you have digital tax maps.

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