



Maryland Department of Planning

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## Final Report: Fifty States Initiative Business Plan Development and Implementation

### **State of Maryland Maryland Department of Planning (MDP)**

**Date:** December 1, 2013

**Agreement Number:** G12AC20134

**Project title:**

Business Plan for Maryland Statewide Parcel Data Development & Maintenance

**Organization:**

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## **Introduction**

This *Business Plan for Maryland Statewide Parcel Data Development & Maintenance* was written by the Maryland Department of Planning (MDP) in fulfillment of a grant received from the United States Geological Survey (USGS) as part of the National Spatial Data Infrastructure Cooperative Agreements Program (NSDI CAP). This plan recognizes that the objective of the NSDI CAP grant program is to fund innovative projects in the geospatial community in order to build the State and national infrastructure necessary to enable governments, private and non-profit organizations, educational institutions and individuals to effectively identify, improve, access, share, manage and use digital geospatial data.

The *Business Plan for Maryland* focuses on the activities necessary to support the creation, expansion and widespread distribution of statewide parcel data throughout Maryland. Although this plan summarizes future business planning activities and objectives, it also discusses the many parcel-related tasks undertaken to improve the evolution of Maryland's geospatial capacity that have already been completed. These completed tasks were made possible by the receipt of this grant. This grant has provided the impetus needed to further advance the State planning process by enabling MDP to perform additional background research and to document ongoing parcel integration project status, goals and activities.

## **Parcel Map Dataset Integration: Project Background**

Maryland is unique nationwide in that State government is legislatively responsible for performing property assessment and tax mapping services. Within this structure, the Maryland Department of Planning (MDP) is responsible for property (tax) map maintenance and for developing GIS products that integrate Real Property assessments data with property map information, while the State Department of Assessments and Taxation (SDAT) is responsible for providing State property valuation, assessment and revenue collection services.

SDAT maintains Real Property (Parcel), Computer Assisted Mass Appraisal (CAMA) and Sale datasets that are integrated with MDP's GIS data. MDP works closely with SDAT's 23 county offices to collect property transaction information (deeds, plats, transfers) to support the property (tax) map update process. MDP also works closely with SDAT to help that agency normalize and enhance its parcel dataset information so the data can better support the GIS user community.

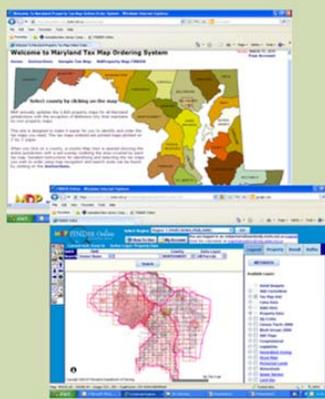
Beginning in 1997, MDP developed the nation's first statewide GIS-based parcel map dataset. This initial project involved creating parcel point centroids that were integrated with SDAT's Real Property database information; it also involved scanning and georeferencing State Mylar property (tax) maps. Updates to line work were then performed

in an AutoCAD environment, yielding a hybrid raster and vector GIS data product. This statewide GIS-based parcel map dataset was regularly maintained and enhanced without significant changes until 2011, when parcel polygons began to be incorporated into the dataset for selected counties and Baltimore City. At this time, ArcGIS began to be used for parcel map dataset maintenance of selected counties.

Since 1997, MDP has also produced a series of products collectively referred to as **MDP's Property Map Products**. These products include a product consisting of a bundled ArcGIS project file (.mxd) and data files (*MdProperty View*), a stand-alone GIS application (*FINDER Quantum*) and a web-based property viewer (*FINDER Online*). These products are distributed to users on a subscription basis; subscription fees paid by State, local and private sector agencies currently provide a large portion of the revenue needed to maintain the parcel map dataset.

### Product Offerings

- Map Sets for 23 SDAT County Assessment Offices
- SDAT Real Property Map View (150K hits/month)
- Online Tax Map Ordering – Paper Map Orders
- MDP's GIS Products
  - *MdProperty View* ArcGIS software
  - *FINDER Quantum* Quantum GIS software
  - *FINDER Online*



In addition to the State's parcel mapping activities, most of Maryland's 23 counties, Baltimore City and some local municipalities have developed independent digital vector parcel datasets that support planning and public works related GIS applications. Many of these datasets were originally converted from MDP's tax maps and then spatially adjusted to best fit large scale ortho-photography.

Unfortunately, these independent local government activities were not closely coordinated with the State as they occurred, ultimately resulting in a wide variation in the level of detail, timeliness and dataset structure among Maryland's counties as well as a spatial mismatch between the official State tax map data and the various county polygon datasets.

### Integrated Tax Map





## Parcel Map Dataset Integration: Key Background Information

Some key baseline information associated with the statewide parcel mapping program is detailed below:

State Agency Responsible for Tax Assessment and Valuation	State Department of Assessment and Taxation (SDAT) <a href="http://www.dat.state.md.us/">http://www.dat.state.md.us/</a>
State Agency Responsible for Parcel (Tax) Mapping	Maryland Department of Planning (MDP) Planning Data Services Division <a href="http://planning.maryland.gov">http://planning.maryland.gov</a>
Number of Parcel Accounts Statewide	2,240,000 parcels
Number of Property (Tax) Maps	2,800 maps
Update Cycle for Property (Tax) Maps	Annual (legislatively mandated)
Update Cycle for Tax Assessment	Every 3 years
MDP Staff Assigned to Parcel Map Dataset Maintenance and Updates	9 Total: 7 property mappers/cartographers, 1 QA/QC Manager, 1 Database Analyst
GIS Software Used	ArcGIS and AutoCAD for property mapping ArcGIS and Quantum GIS for product distribution
Number of Plats/New Accounts Processed Annually for the past 5 years	4000 – 6000 plats annually 10,000 – 15,000 new accounts annually
Number of Subscribers to <i>MdProperty View</i> and <i>FINDER Quantum</i>	13 State agencies Approximately 200 additional local, federal, non-profit and private sector organizations
Means of Parcel Map Dataset Distribution	<i>MdProperty View</i> and <i>FINDER-Quantum</i> : DVDs <i>MdProperty View</i> and <i>FINDER-Quantum</i> : Subscriber website for the Sale dataset and updated attribute information <i>FINDER Online</i> : web mapping application for parcel data viewing and display MDiMAP: web map services SDAT Real Property Data Search: web maps

## **Mission Statement: Maryland's Parcel Map Dataset – Vision for the Future**

*The Business Plan for Maryland Statewide Parcel Data Development & Maintenance envisions a statewide parcel map dataset that contains the combined spatial and parcel attribute data needed to support State tax mapping and assessment activities, State and local land use planning and infrastructure management, the management of public health and safety concerns and the sharing and dissemination of parcel data via State, local, county and federal GIS applications.*

This vision will be enabled and supported via the following cooperative activities:

- The statewide parcel map dataset will become publicly available to State, federal and local governments; to non-profit organizations and universities; and to private sector organizations. Access to the dataset will be provided through the MDiMAP portal and through a direct data download (FTP) site maintained by MDP.
- The parcel map dataset will utilize a common spatial framework with data spatially referenced to large scale ortho-imagery and will contain point, polygon and text annotation for each parcel. In recognition of the different data models in place at the local level, the dataset design will accommodate existing data structures and will be flexible enough to support the needs and requirements of the various stakeholder organizations involved in parcel maintenance and use.
- MDP will continue to support the distribution of products through commercial (ESRI ArcGIS), Open Source (Quantum GIS) and other web-based applications.
- MDP will continue to update and publish parcel data on an annual basis; some counties will continue to maintain parcel data on a more frequent basis. Counties maintaining parcel data will share their data with MDP in support of an integrated statewide parcel maintenance approach and MDP will also share its parcel data with each county.

This vision recognizes that some counties may not maintain parcel data at all, that some counties may maintain a subset of parcel-related data and that others may maintain a comprehensive dataset.

Achieving this vision will require coordination between and amongst State agencies and between the State and local government agencies. Data sharing agreements and memoranda of understanding (MOUs) will need to be executed and put in place to facilitate this vision. Funding and staffing levels will also need to be in place to support continued parcel polygon conversion and integration activities and long term parcel map dataset maintenance and support.

## **Parcel Map Dataset Integration: State and County Datasets**

In late 2010, the State, specifically MDP, began an ambitious coordination process with selected counties in order to begin the process of integrating parcel mapping operations statewide. This FGDC CAP grant has helped facilitate this coordination. The integration process has resulted in a consistent spatial framework for parcel boundaries and improved the spatial accuracy of county tax maps, since the county boundaries have good registration with existing ortho-imagery. This process also results in the conversion of text annotation and other parcel data layers needed for ongoing tax map maintenance.

The integration process also enables verification of parcel account information between the parcel points that have traditionally been maintained by MDP and the parcel polygons that traditionally have been maintained by the counties. The end result of this is a consistent and uniform parcel map dataset in which ArcGIS is used for parcel maintenance along with each county's vector parcel polygons and MDP's parcel point data obtained from SDAT and enhanced by MDP. Currently, MDP's integration effort has been completed for 10 of Maryland's 24 jurisdictions. An additional 4 jurisdictions are actively underway and an additional 4-5 are planned for the 2014/15 timeframe.

The major tasks associated with parcel integration typically include:

- Acquisition of county parcel data and key reference layers including hydrography, centerlines and rail and utility ROW lines when available;
- Comparison of MDP and county parcel account numbers and resolution of account number discrepancies;
- Movement and adjustment of MDP parcel points to county-based polygons;
- Creation of new parcel polygons when polygons are missing from county parcel boundaries, as is typical for parcel accounts that do not undergo a subdivision review and approval process;
- Addition of approximately located parcel accounts – accounts that may not have a known polygon – and addition or normalization of condominium parcel accounts;
- Creation of parcel ROW lines from the parcel polygons to support tax map production and generation of street centerline and hydrographic text;
- Generation of lot and parcel numbers and performance of cartographic edits;
- Creation of subdivision boundary polygons;
- Addition of plat/map reference numbers; and
- Generation of plotting masks and creating plots and image files for distribution.

The image below provides an example of the “before and after” process for one representative county:



### Future Parcel Integration Tasks

The exact tasks (see list above) that need to be completed are dependent upon the content and quality of a given county’s base data. As part of the process, a maintenance strategy is also defined for each county; typically ongoing maintenance has been based on one of three models:

1. MDP assumes complete maintenance responsibility.
2. A county continues ongoing maintenance for a subset of features; MDP collects parcel data from the county on an annual basis and then uses the base data to support the property (tax) map update process.
3. A county performs comprehensive ongoing maintenance and MDP then performs a data review and finalization process, adjusting parcel data based on what is needed for tax mapping purposes.

The table below outlines MDP’s current plan for future integration work. Execution of this plan is dependent on maintaining adequate staffing levels at MDP and on having data sharing agreements in place with each county and Baltimore City. In order to facilitate the integration activities, closer interaction and coordination between MDP and each individual county is essential.

### Polygon Counties Workplan

	2011	2012	2013	2014	2015	2016
Allegany						
Anne Arundel						
Baltimore County						
Baltimore City						
Calvert						
Caroline						
Carroll						
Cecil						
Charles						
Dorchester						
Frederick						
Garrett						
Harford						
Howard						
Kent						
Montgomery						
Prince George’s						
Somerset						
St. Mary's						
Talbot						
Queen Anne's						
Washington						
Wicomico						
Worcester						

**Table Key:**  
 **Completed or underway**  
 **New conversion county**

## Parcel Map Dataset Normalization

From a longer term perspective, there is also a need to further standardize or normalize the database design across jurisdictions. In working with the counties, MDP has found that the GIS database design varies based on the county-based structure. Currently MDP's primary normalization activity focuses on parcel account numbers and standardized attribution associated with the account numbers and SDAT CAMA and Sale data.

As MDP works with the counties to add additional features to parcel map dataset, especially text annotation, a consistent design will also be used for those features. MDP has also have worked to adopt a consistent data model for condominiums, although that will be difficult to maintain as MDP integrates some of the more populous counties which have a high degree of condominium development.

MDP has evaluated ESRI's parcel fabric and other common "standard" data models. However, at this time MDP has decided to continue to support county-based independent data models until the statewide parcel integration work is complete.

## Parcel Map Dataset Integration: Funding a Future Edgematching Project

In addition to the State/county parcel integration work, there is also a need to address edgematching across counties. Existing parcel data, both the State and county datasets, were developed on a county-by-county basis; therefore these datasets are not spatially or topologically edgematched. Parcels at county boundaries are also inconsistent in that some datasets clip the parcels at the boundary while others include the entire parcel irrespective of the county boundary.

There are also variations in parcel account numbers and acreages associated with the polygons, as well as land records issues involving deed research needed to address the actual delineation of parcel boundaries.

MDP is attempting to address some of these parcel edge-matching issues as part of the county-by-county parcel integration process; however this work still leaves many issues between counties to be resolved later through subsequent deed research or field surveys.



Coordination with counties to reflect the impacts of the edgematching also needs to be addressed. It is recommended that a separate edgematching project be initiated and newly funded; the Emergency Number Systems Board may provide funding for this effort. Other States, for example, New Jersey, have successfully implemented edgematching projects as envisioned for Maryland.

*The estimated cost for statewide edgematching is approximately \$250,000; that cost is based on an estimate of approximately \$8500–\$12,000 per county. The cost factors are derived based on costs incurred by other State’s with comparable projects and rough order of magnitude estimates from potential Maryland contractors.*

## **Parcel Map Dataset Integration: Funding Large County Dataset Integration**

MDP has focused over the last several years on small to medium size counties in completing its parcel integration work. Over the next several years, integration activities for the largest counties in the State will be undertaken.

Several counties, notably Anne Arundel, Baltimore, Montgomery, Frederick and Prince George’s counties, will be particularly challenging to integrate due to the number of parcels to be reviewed; the amount of text annotation to be added, especially in Anne Arundel County; the frequency of updates; and county data distribution policies, particularly the policies in place in Baltimore, Montgomery and Prince George’s counties.

Detailed analyses will need to be performed and efficient and effective integration strategies will need to be adopted for each of these large counties. This detailed planning is already underway for Montgomery County; it is anticipated that additional contractor support will be needed to support large-scale parcel integration for the other large counties. MDP will be investigating several funding options, including enlisting the support of the Emergency Number Systems Board, to support these activities.

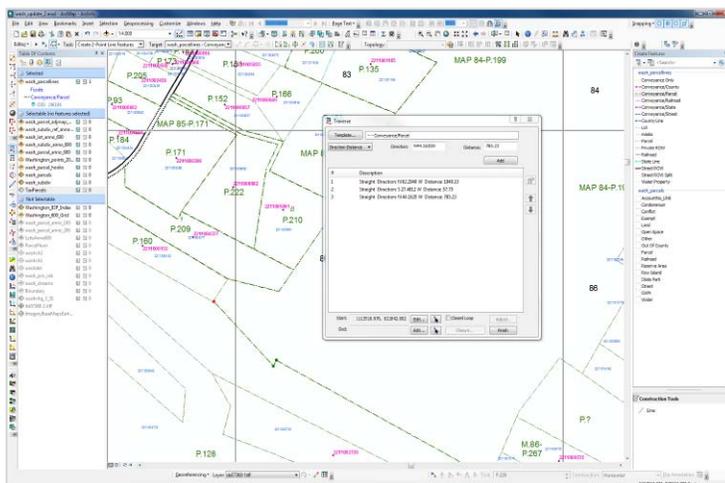
*Assuming 2-3 months of technical staff support for each of the 5 large counties, the estimated cost of this effort will be approximately \$30,000 per county, with an estimated total cost of \$150,000–\$200,000 in MDP staff augmentation support.*

## **Parcel Map Dataset Maintenance: GIS Software Migration**

MDP currently has eight licenses of AutoCAD Versions 8 & 13 and an enterprise license agreement through the State’s Geographic Information Office (GIO) for ESRI’s ArcGIS Version 10.1; both support parcel maintenance activities and COGO and deed plot entry.

For primary work tasks on counties that have already been integrated or that are currently undergoing integration, MDP uses Smart Data Strategies, Inc. DREAMaps Mapper™ software and ESRI Parcel Editing Tools for ArcGIS parcel maintenance. As the ESRI off the shelf tools continue to evolve, MDP's plan is to move towards the ESRI bundled tools and away from the custom software.

Smart Data Strategies, Inc.  
DREAMaps Mapper™



The AutoCAD licenses are currently used for data maintenance for counties that have not yet gone through the MDP/County data integration process. These licenses are also used for support work, for example, point movement and selected feature conversion, for counties that are currently undergoing integration. MDP plans to phase out AutoCAD Licenses over 3 year period, reducing licenses by 1-2 per year over this time period.

As new county users begin to support the maintenance process, and due to current and anticipated staff changes at MDP, there is a need to create a comprehensive parcel update procedures manual to support the update process. Work on this project is already underway.

## Parcel Map Dataset Delivery: MDiMAP Parcel Data

Parcel data has been aggregated and is hosted as part of a statewide web mapping service, the MDiMAP online mapping portal:

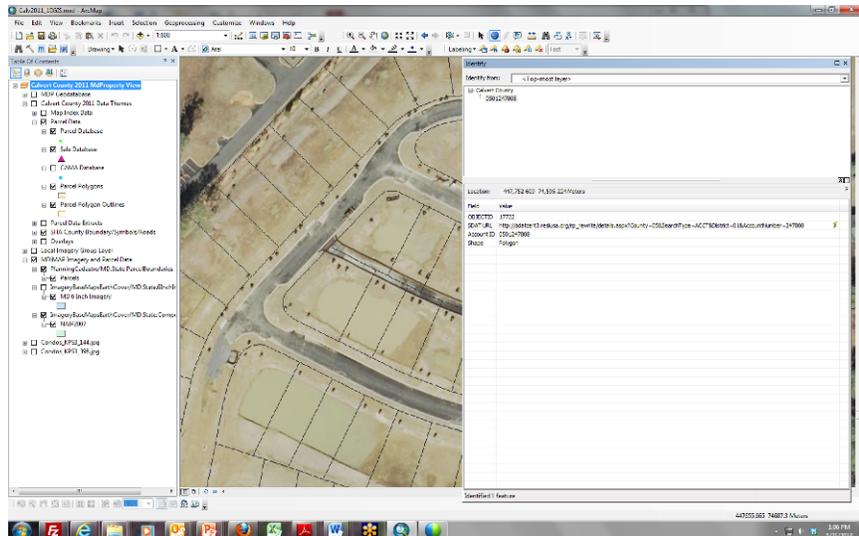
<http://imap.maryland.gov/Pages/applications.aspx>

These data have been available to the GIS User community since late 2010. Along with the ortho-imagery, the parcel map dataset is one of the most commonly accessed datasets in MDiMAP.

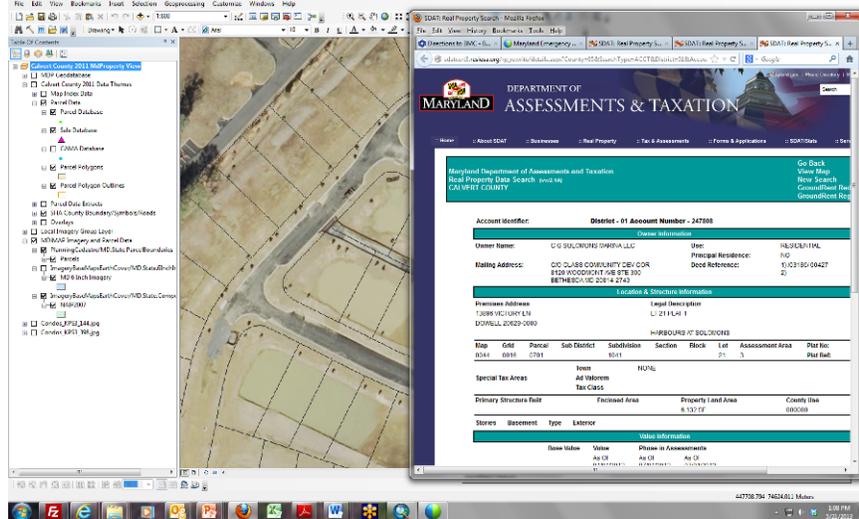
Usage statistics for MDiMAP are provided below:

Connections via Online Applications	406,315 August 2013	4,015,224 Annual, for the 12 months prior
Service Connections utilizing GIS Software	68,855	674,556 Annual, for the 12 months prior

Parcel Data in MDiMAP:



Parcel Data in MDiMAP showing a parcel linked to an SDAT record via the Real Property website



The MDiMAP parcel map service contains parcel boundaries with a link to selected information from the Real Property database, as shown on the previous page. The MDiMAP parcel dataset is a cached map service that is suitable for display and single parcel queries. It does not support feature based or multiple-parcel attribute analysis. It also does not support queries of one-to-many relationships, for example, in the case of condominium parcels. No parcel points are included in this map service.

Parcel data in MDiMAP are updated on a periodic 3-6 month basis depending on the county. Updates are based on county-derived datasets, or the service is updated from MDP parcel polygons for those counties where the MDP/County parcel integration work is complete. As part of the update process, MDP normalizes the county data to ensure that there is consistency in the parcel account number format and the dataset structure and adds a web link to the SDAT real property website for each parcel account number.

The MDiMAP parcel map dataset update process is generally working well. However, some needed future enhancements to the dataset have been identified, and in one case, already implemented:

- Merge data into a single geodatabase instead of countywide files; this enhancement has now been completed.
- Increase the refresh cycle to quarterly updates statewide.
- Add a link to [plats.net](http://plats.net) in order to enable accessing of a corresponding plat via a parcel query.
- Add a link to open Google StreetView and or Microsoft Birds Eye View from within MDiMAP.
- Improve the parcel map dataset metadata

Additional future MDiMAP parcel map dataset enhancements that are contingent upon the establishment and implementation of a statewide of open data policy include:

- Add parcel points to the parcel map dataset
- Create the parcel point data as a Web Feature Service to support functionality for download, query and analysis of data
- Add annotation data for reference or add a tax map service, a feature currently only available to *FINDER* Online Subscribers
- Increase the refresh cycle to quarterly updates statewide for all counties

## Parcel Map Dataset Delivery: MDP Property Map Data Products

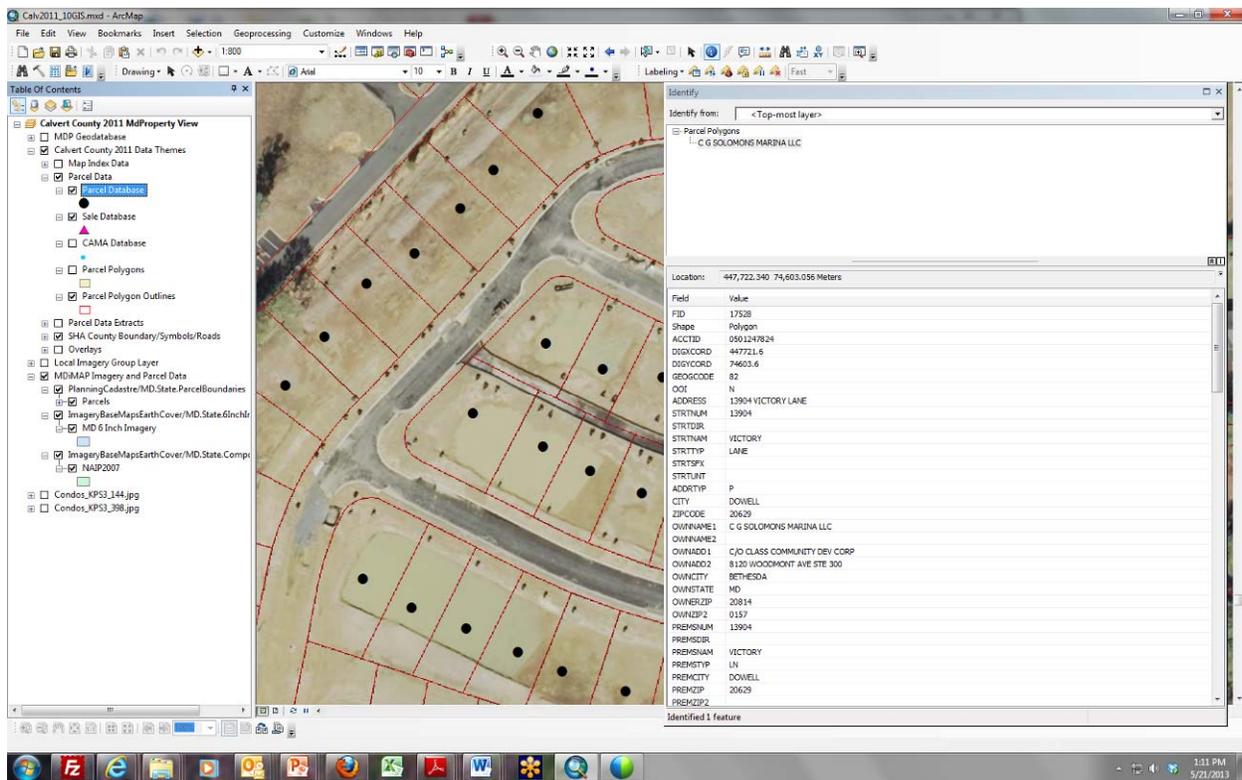
As mentioned above, since 1997 MDP has produced a series of products collectively referred to as **MDP's Property Map Products**. These products include:

***MdProperty View***. a visually accessible dataset that allows for interaction with a jurisdiction's tax maps (counties) and parcel information (counties and Baltimore City) and over 20 additional map and data layers using ESRI's ArcGIS software. A highly customized project file (.mxd) is included that allows for easy navigation, map display and analysis.

Organizations or individuals interested in a single jurisdiction (county or Baltimore City) and wanting to perform advanced queries, analyses or reporting on parcel data opt for *MdProperty View*. However, those who don't need to perform these advanced functions usually consider one of MDP's other GIS related software products, described below.

*MdProperty View* is sold by jurisdiction (county or Baltimore City) with licensing levels of 1, 2-3, 4-6 and 7+ (unlimited licensing). The cost pr jurisdiction ranges from \$295 to \$1,400 depending on the licensing level; a full unlimited license for the entire State, the typical licensing level for State agencies, costs \$23,000.

### ***MdProperty View* User Interface**



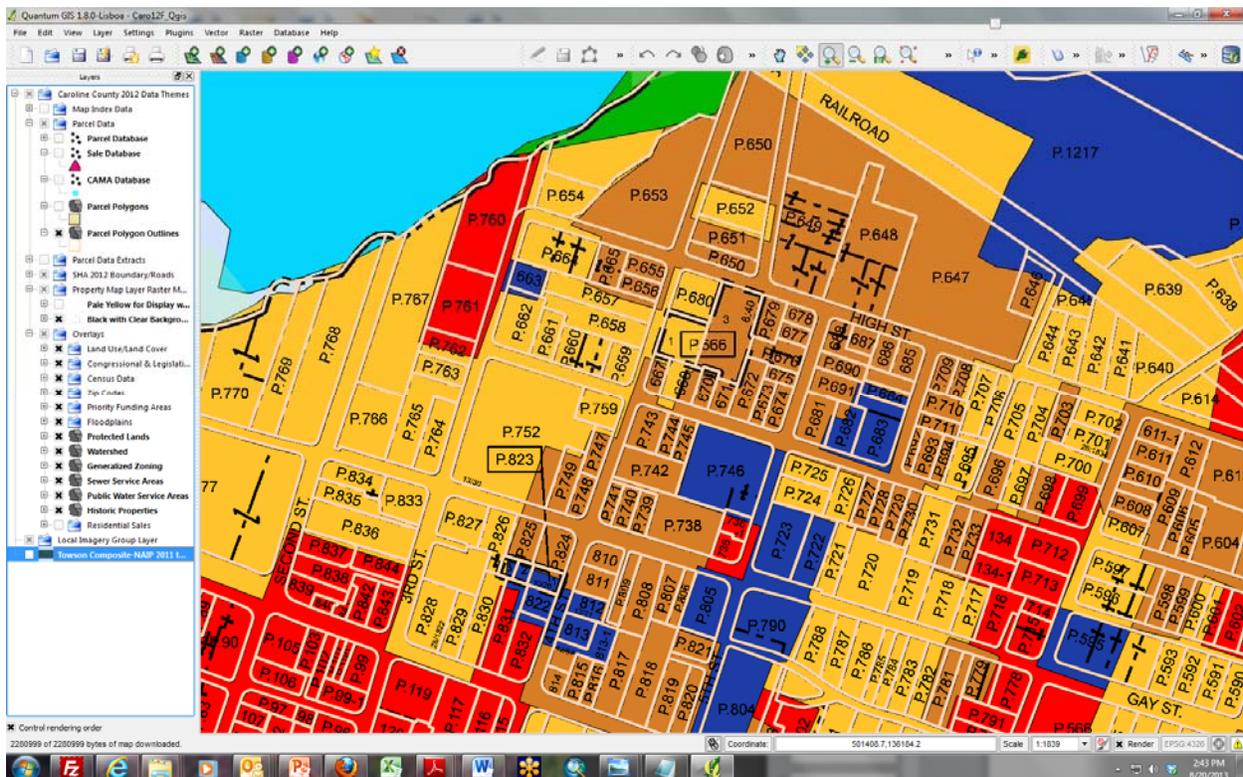
**FINDER Quantum:** a recently released product (2103), comprised of Quantum GIS software, an official project of the Open Source Geospatial Foundation (OSGeo), bundled with the same map and data layers that are included in *MdProperty View*. This product is designed for the independent or small-business Subscribers who is interested in open source and/or lower cost solutions to support desktop mapping applications. A highly customized project file (.qgs) is included that allows for easy navigation, map display and analysis.

*Throughout the planning process for this FGDC grant, significant product development work has been performed in support of FINDER Quantum.* This work included research on open source desktop mapping options; selection and testing of the Quantum GIS application as the platform for distribution of MDP's open source solution; development of Quantum GIS standardized project templates; and development of the product documentation, the Subscribers Guide and a *FINDER Quantum* training manual.

Organizations or individuals wanting to perform advanced queries, analyses or reporting on parcel data typically opt for this open source MDP GIS-related software product instead of *MdProperty View* which is an ArcGIS based product.

*FINDER Quantum* is currently sold by jurisdiction (county or Baltimore City) with licensing levels of 1-2, 3-7, 8-14, 15-24 and 25+ (unlimited licensing). The cost per jurisdiction ranges from \$95 to \$880 depending on the licensing level; a full unlimited license for the entire State costs \$15,045, but the typical multi-user subscription to *FINDER Quantum* is for a statewide single-user license at \$3,330.

### **FINDER Quantum User Interface**



**FINDER Online:** MDP’s subscription-based web mapping application that provides rapid access to a comprehensive set of property related information. Other planning, environmental and census data are available to overlay with the property and imagery base map data.

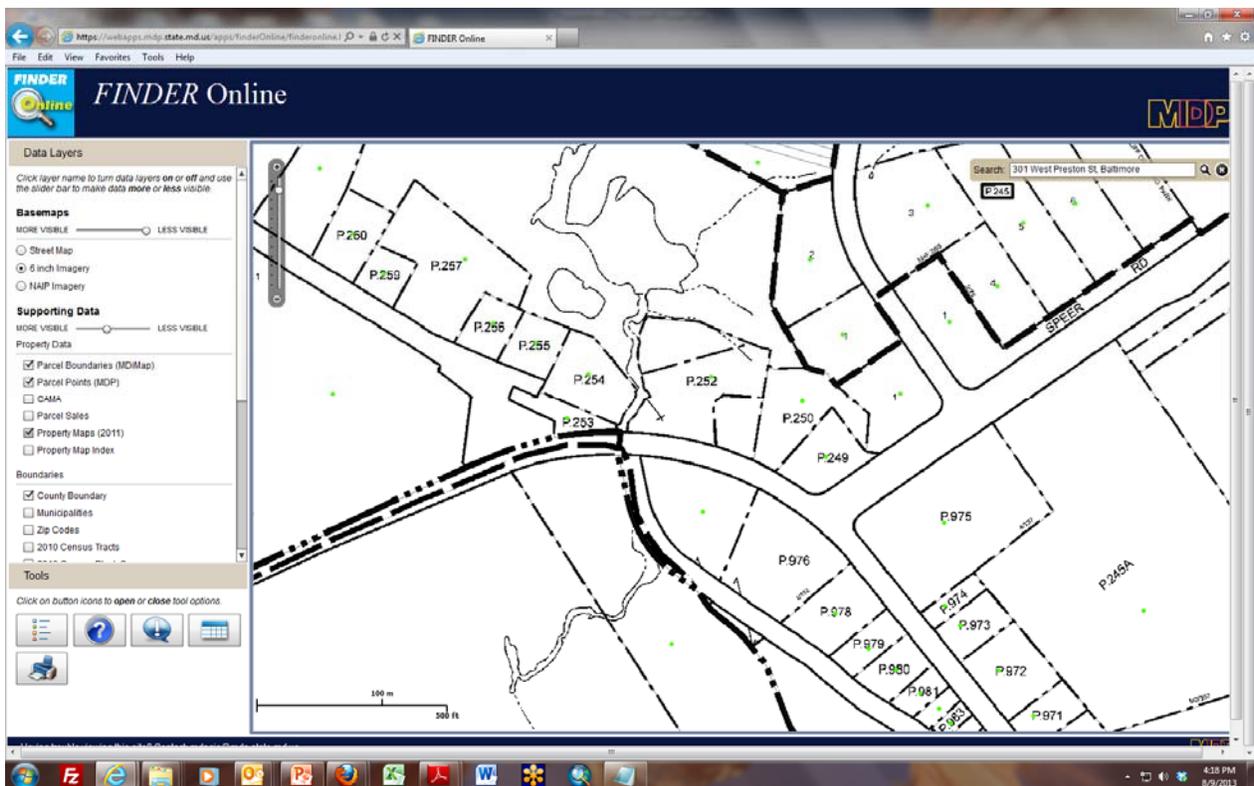
Subscribers can locate a specific property by address, zip code, municipality name or by zooming into an area of interest. Attribute information can be accessed for parcel, sale and CAMA data; attribute data can be extracted for parcel, sale and CAMA data and area maps can be generated in a variety of map formats.

The *FINDER* Online application was recently updated from an outdated ArcGIS Internet Mapping Service (IMS) application to an ArcGIS Flex application. This upgrade has resulted in significant performance and functionality enhancements.

*FINDER* Online is designed for query and display; Subscribers who want to perform advanced queries, analyses or reporting on parcel data generally opt for *MdProperty View* or *FINDER* Quantum.

The annual license fee for *FINDER* Online is \$250 per year for the entire State – pricing for an individual jurisdiction (county or Baltimore City) is not available.

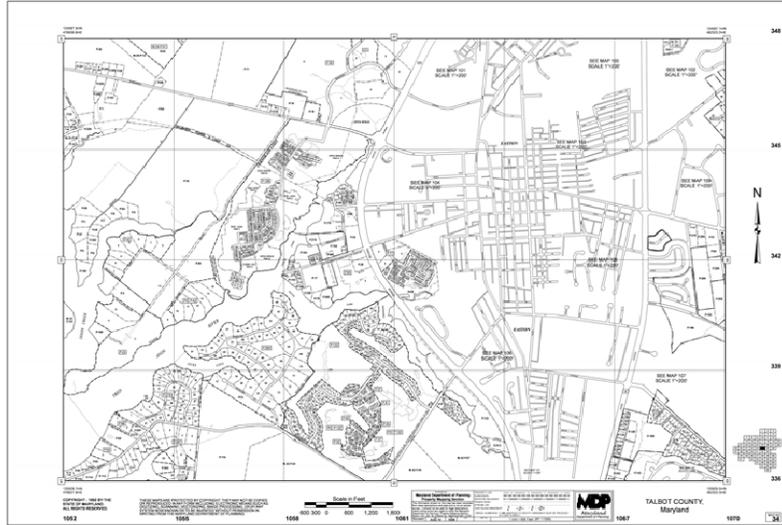
### **FINDER Online User Interface**



## Property (Tax) Maps:

copies of official tax maps are available as standalone products in either a digital format (TIF or PDF) or as hard copy paper products. MDP recently developed a tax map ordering system to facilitate purchasing these products.

Digital tax maps are \$10.00 per map and are available in TIF format.



Paper tax maps are \$25.00 per map, which includes processing, shipping and handling. If the order is for 50 or more tax maps, the price is \$5.00 per map.

## Access To and Future Plans For MDP's Property Map Products

The Property Map Products home page view below shows the suite of products described above:

<http://planning.maryland.gov/OurProducts/PropertyMapProducts/PropertyMapProducts.shtml>

**MARYLAND DEPARTMENT OF PLANNING**

HOME OUR WORK **OUR PRODUCTS** YOUR PART REDISTRICTING HISTORICAL TRUST DATA CENTER

**INSIDE MDP**  
About Us  
Sustainable Communities  
Smart Growth  
Local Government Planning  
State Clearinghouse  
Maryland Planning Directors Roundtable  
Maryland Sustainable Growth Commission  
Maryland Planning Commissioners Association  
Jefferson Patterson Park & Museum

**PROPERTY MAP QUICK LINKS**  
Property Map Products  
MdProperty View  
FINDER Quantum  
FINDER Online  
Tax Maps  
Production Schedule  
Credits & Acknowledgements  
Contact Us

**OTHER**

**MdProperty View DVDs**  
[View Screenshots](#)

Desktop GIS with Advanced query, analysis and reporting capabilities

- ▶ Annual DVD Subscription
- ▶ Uses ESRI's ArcGIS Software
- ▶ Includes xy linkages to Parcel, Sale and CAMA data
- ▶ Includes polygon shapefiles for selected jurisdictions
- ▶ Includes digital Tax Maps
- ▶ Includes high-resolution color digital-ortho imagery
- ▶ Includes an SHA centerline file and SHA digital grid map data
- ▶ Includes over 20 additional map and data layers
- ▶ Sold by jurisdiction (Counties/Baltimore City)

Cost ranges from **\$295 to \$695 per jurisdiction**

[More >](#)

**FINDER Quantum DVDs**  
[View Screenshots](#)

User-Friendly Desktop GIS to use with **free** downloadable GIS software

- ▶ Annual DVD Subscription
- ▶ Uses Quantum GIS Software
- ▶ Includes xy linkages to Parcel, Sale and CAMA data
- ▶ Includes polygon shapefiles for selected jurisdictions
- ▶ Includes digital Tax Maps
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Cost ranges from **\$95 to \$195 per jurisdiction**

[More >](#)

**FINDER Online**  
[View Screenshots](#)

MDP's Custom Online Map and Data Viewer with Search Capabilities

- ▶ Annual Online Subscription
- ▶ Created and hosted online by MDP
- ▶ Includes xy linkages to Parcel, Sale and CAMA data
- ▶ Includes link to MD IMAP Parcel Map Service
- ▶ Includes digital Tax Maps
- ▶ Includes high-resolution color digital-ortho imagery
- ▶ Includes an SHA centerline file and SHA digital grid map data
- ▶ Includes over 15 additional map and data layers
- ▶ Sold by entire State – **not by jurisdiction**

Cost is **\$250 for the entire State**

[More >](#)

**Tax Maps**

2' by 3' B&W paper maps with color detail or digital TIF map images

- ▶ Includes legend and border information
- ▶ Images are not georeferenced
- ▶ 600 feet per inch scale in non-town areas
- ▶ Typically 200 feet per inch scale in incorporated town areas

**Paper Tax Maps** available via UPS®:

- ▶ \$25 per paper map
- ▶ \$5 per map for 50 or more paper maps

**Digital Tax Maps** available via email or DVD:

- ▶ \$10 per digital TIF tax map

All orders also available for pickup by prior arrangement

[More >](#)

The enhancement of MDP's product suite is a continuous process typically tied to product Edition years. As discussed above, both *FINDER* Quantum and *FINDER* Online were redeveloped within the past year; therefore future enhancements will be refinements instead of major redevelopment efforts. *MdProperty View* was redesigned in 2011, so enhancements to that product are also expected to be relatively minor for the next few years.

The table below shows the details upcoming planned enhancements for each of MDP's Property Map Products described above:

<i>MdProperty View</i>	<ul style="list-style-type: none"> <li>Add the NAIP 2013 Image Service</li> <li>Add the county Public Safety Address Points (PSAP) dataset</li> <li>Add building polygons</li> </ul>
<i>FINDER</i> Quantum	<ul style="list-style-type: none"> <li>Add same new datasets to this product as those added to <i>MdProperty View</i></li> <li>Develop a training manual and presentation</li> <li>Conduct Subscriber training sessions</li> </ul>
<i>FINDER</i> Online	<ul style="list-style-type: none"> <li>Enhance navigation (parcel account number, tax map) functions</li> <li>Incorporate Google Earth Street View</li> <li>Develop a <i>FINDER</i> Online Lite version for use on mobile devices and iPads</li> <li>Develop more a more advanced query interface and/or preselect queries</li> </ul>
Property (Tax) Maps	<ul style="list-style-type: none"> <li>Support .pdf file format and availability statewide</li> </ul>

## **MDP's Efforts to Refine the Parcel Delivery Business Model**

The most significant policy issue still to be addressed that greatly impacts the accessibility and use of the parcel map dataset is the existing MDP business model. The Maryland Department of Planning (MDP) currently provides parcel-based data to State, local and federal government agencies; to private sector and non-profit organizations; and to individuals on a licensed, subscription basis for *MdProperty View*, *FINDER* Quantum and *FINDER* Online, as described above. In many cases, agencies and organizations subscribe to more than one data product.

Existing State agency Subscribers currently generate approximately \$227,000 in revenue and include the following agencies:

- Maryland Department of Agriculture (MDA)
- Maryland Department of Business and Economic Development (DBED)
- Maryland Department of the Environment
- Maryland Department of General Services (DGS)
- Maryland Department of Health and Mental Hygiene (DHMH)
- Maryland Department of Housing and Community Development (DHCD) Maryland
- Maryland Department of Human Resources
- Maryland Department of Natural Resources (DNR)
- Maryland Department of Transportation – Aviation Administration
- Maryland Department of Transportation – State Highway Administration
- Maryland Department of Transportation – Office of Real Estate
- Maryland Emergency Management Agency (MEMA)

Data sales from other entities (non-State agency contributors) generated approximately \$275, 000. This includes revenue received as royalty payments from MDP’s business partners.

<b>Year</b>	<b>Revenue</b>
2008	\$393,007
2009	\$306,952
2010	\$291,011
2011	\$232,778
2012	\$275,861

Revenue has been declining over the last several years as other sources of information become available, including MDP’s support for providing parcel data to MDiMAP. The declining revenue has meant that MDP has had to make up that revenue deficit through general operating funds.

*MDP’s objective is for MDP and the Department of Information Technology (DoIT) to make to make the funding of parcel data maintenance a reimbursable fund expenditure – and to make the parcel map dataset and MDP’s resulting Property Map Products available a part of the open data initiative. MDP Budgets for parcel mapping would be then adjusted to reflect this change in policy.*

A second option would be to reallocate funds across State agencies. Existing State agencies who contribute to the ESRI Enterprise License Agreement (ELA) would provide the funding; these would be agencies that have established, higher end GIS functions.

MDP would work with DoIT to provide an acceptable allocation for each State agency. In general, existing ELA Subscriber agencies would be asked to contribute more, and agencies that are not currently Subscribers would be required to contribute a much smaller amount. Since many of these agencies are current users of parcel data via MDiMAP or through collection of county-based data, it would be reasonable to have them contribute to this effort.

As part of the budget planning process, MDP would work with the Department of Budget and Management (DBM) to define the appropriate allocation approach. The opening up of this data has the full support of the MDiMAP Executive Committee (representing public and private sector agencies) and of the Maryland State Geographic Information Committee (MSGIC), which represents the GIS community at large.

As part of MPD's review of the business model, the benefits of the open data approach have been identified and are listed below:

### **Policy Benefits of Open Data**

- Establishes Maryland as a leader in open data initiatives
- Receives widespread support within the MSGIC Community
- Increases the distribution of parcel maps and data within State agencies and between the State and other organizations
- Allows the Governor's *One Map* vision to be fulfilled; as it currently stands, the parcel map dataset is the last major dataset to be excluded from *One Map*
- Ensures that the complete parcel map dataset would be available for open use on MDiMAP, Socrata, etc. – currently only a limited number of dataset fields and graphic features are available via MDiMAP and no parcel data at all are available through the Socrata open data portal
- Encourages additional local government entities to move toward open data sharing of their GIS datasets
- Ensures consistent State open distribution practices that are more congruent with practice in other states – a recent survey by MDP confirms that the majority of states do not charge for parcel data

### **Data Sharing Benefits of Open Data**

- All State agencies would gain access to consistent and uniform parcel data. Currently only some State agencies are MDP Subscribers; other State agencies continue to use old and outdated parcel data; some of these State agencies try to obtain parcel data from the counties or other sources. Some State agencies also use

less accurate centerline data where parcel-based data would result in more accurate spatial analyses.

- Counties and other local government agencies would be able to use the parcel map dataset more broadly; currently only those counties with MDP data sharing agreements in place (most counties) and a select subset of State municipalities have access to Property Map Products parcel data.
- The private sector and universities would be able to leverage the data more extensively and successfully for additional applications. Internet mapping sites would likely incorporate the parcel map dataset into their web mapping applications (for example, currently only 3-4 counties have parcel boundaries available via Google Earth).

### **Technical Benefits of Open Data**

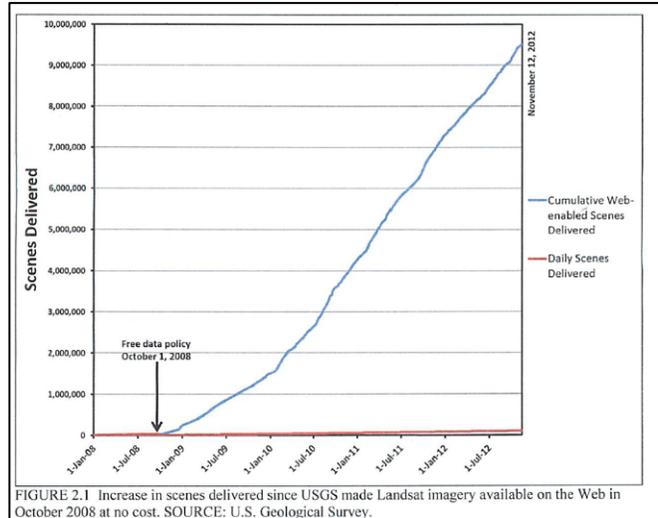
- Other State agencies would be able to access the parcel map dataset directly through MDiMAP or a Central Enterprise database. This would eliminate or reduce duplicative State agency data loading, increase the consistency across State agencies of the parcel data used for critical analyses and increase the currency and timeliness of parcel data available to State agencies.
- MDP would be able to develop desktop and mobile applications that provide full access to the parcel map dataset.
- MDP would be able to host a data download portal, eliminating the need to ship individual product DVDs to *MdProperty View* and *FINDER* Quantum Subscribers.
- MDP's Subscriber Database and most product invoicing activities could be eliminated or significantly reduced.

All property (tax) map data would be available as part of a web viewer, reducing the need to produce paper plots of tax maps. This could also benefit the general public – if tax maps were available through a viewer or digitally the need to maintain plots at all SDAT Public Information counters could be minimized, because open data sharing would enable people to access tax map information without going into their local SDAT or county office.

It should be noted that the movement towards open data distribution will in all likelihood greatly increase usage of MDP's Property Map Products. Although there will be some efficiencies in not having to perform ongoing billing and collection functions, these products will still need to be redeveloped for users as data needs evolve, distribution mechanisms will need to be in place and the number of questions by users needing to be addressed, resulting in the need for expanded data documentation and help documents, will likely increase significantly. The increase in parcel data users will also shine a spotlight on the importance of data quality.

The slide to the right shows the increase in access to USGS Landsat scenes after they changed the policy from a fee based to an open structure.

This exponential increase is likely to be experienced with regards to the use of the parcel map dataset as well.



## Parcel Delivery: SDAT Real Property Website

The State Department of Assessments and Taxation (SDAT) Real Property Database is a primary channel for public and private users to access real property data and maps. Tax map data are accessed on a routine basis via a view map button on the real property data page.

<http://sdat.resiusa.org/RealProperty/Pages/default.aspx>.

### Impact of SDAT Site Security Concerns

In addition to accessing the maps and real property page data from the SDAT website directly, many GIS users access this same information via hyperlinks in the GIS parcel polygon data (through MDiMAP parcel boundaries) or through other locally developed parcel or address datasets. Recently concerns have been expressed regarding security issues associated with providing the user community direct access to these pages via hyperlinks. Although it is understood that security issues need to be addressed, continuing support for this functionality is a critical component of the GIS user community's requirements.

The table below shows usage statistics for the SDAT Real Property Search Website:

Real Property Data Searches	2,500,000 per month
Views of Tax Maps on Real Property Website	150,000 per month

## Real Property Search

The screenshot displays the 'Real Property Data Search (v2)' interface. It includes a search bar, a progress indicator with three steps (1. Search Method, 2. Enter Search Parameters, 3. Results), and a search result for 'MONTGOMERY COUNTY'. The results are organized into several sections:

- Account Identifier:** District - 09 Account Number - 00842223
- Owner Information:** Owner Name: MARSHALL, DEN C JR & D O; Use: Principal Residence: RESIDENTIAL, YES; Mailing Address: 31 WALKER AVE, GAITHERSBURG MD 20877-2703; Deed Reference: 1)/11013/ 00645 2)
- Location & Structure Information:** Premises Address: 31 WALKER AVE, GAITHERSBURG 20877-2703; Legal Description: WALKERS ADD 7025/001; Map: Grid: FT52 0000 0000; Parcel: 0000; Sub-District: 0218; Section: P31; Block: 2012; Lot: 36; Assessment Year: 2012; Plat No: ; Plat Ref: ; Town: GAITHERSBURG; Tax Class: 49
- Special Tax Areas:** Ad Valorem: 49
- Primary Structure Built:** 1911; Above Grade Enclosed Area: 2,934 SF; Finished Basement Area: ; Property Land Area: 10,019 SF; County Use: 111
- Stories:** 2; **Basement:** YES; **Type:** STANDARD UNIT; **Exterior:** FRAME; **Full/Half Bath:** 1 full / 1 half; **Garage:** ; **Last Major Renovation:** ;
- Value Information:** Base Value: 194,500; Value As of 01/01/2012: 156,600; Phase in Assessments As of 07/01/2013: 145,900; As of 07/01/2014: 301,500

## Views of Tax Maps

The screenshot displays the 'Montgomery County' tax map interface. It shows a map of a property with a grid overlay. The map includes the following information:

- Montgomery County**
- District: 09** Account Number: 00842223
- Map Labels:** REALTY PARK, CENTRAL AVE, AVENUE
- Parcel Numbers:** 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
- Map Controls:** +, -, PT. I, PT. II, PT. III, PT. IV, PT. V, PT. VI, PT. VII, PT. VIII, PT. IX, PT. X, PT. XI, PT. XII, PT. XIII, PT. XIV, PT. XV, PT. XVI, PT. XVII, PT. XVIII, PT. XIX, PT. XX, PT. XXI, PT. XXII, PT. XXIII, PT. XXIV, PT. XXV, PT. XXVI, PT. XXVII, PT. XXVIII, PT. XXIX, PT. XXX, PT. XXXI, PT. XXXII, PT. XXXIII, PT. XXXIV, PT. XXXV, PT. XXXVI, PT. XXXVII, PT. XXXVIII, PT. XXXIX, PT. XL, PT. XLI, PT. XLII, PT. XLIII, PT. XLIV, PT. XLV, PT. XLVI, PT. XLVII, PT. XLVIII, PT. XLIX, PT. L, PT. LI, PT. LII, PT. LIII, PT. LIV, PT. LV, PT. LVI, PT. LVII, PT. LVIII, PT. LIX, PT. LX, PT. LXI, PT. LXII, PT. LXIII, PT. LXIV, PT. LXV, PT. LXVI, PT. LXVII, PT. LXVIII, PT. LXIX, PT. LXX, PT. LXXI, PT. LXXII, PT. LXXIII, PT. LXXIV, PT. LXXV, PT. LXXVI, PT. LXXVII, PT. LXXVIII, PT. LXXIX, PT. LXXX, PT. LXXXI, PT. LXXXII, PT. LXXXIII, PT. LXXXIV, PT. LXXXV, PT. LXXXVI, PT. LXXXVII, PT. LXXXVIII, PT. LXXXIX, PT. XL, PT. XLI, PT. XLII, PT. XLIII, PT. XLIV, PT. XLV, PT. XLVI, PT. XLVII, PT. XLVIII, PT. XLIX, PT. L, PT. LI, PT. LII, PT. LIII, PT. LIV, PT. LV, PT. LVI, PT. LVII, PT. LVIII, PT. LIX, PT. LX, PT. LXI, PT. LXII, PT. LXIII, PT. LXIV, PT. LXV, PT. LXVI, PT. LXVII, PT. LXVIII, PT. LXIX, PT. LXX, PT. LXXI, PT. LXXII, PT. LXXIII, PT. LXXIV, PT. LXXV, PT. LXXVI, PT. LXXVII, PT. LXXVIII, PT. LXXIX, PT. LXXX, PT. LXXXI, PT. LXXXII, PT. LXXXIII, PT. LXXXIV, PT. LXXXV, PT. LXXXVI, PT. LXXXVII, PT. LXXXVIII, PT. LXXXIX, PT. XL, PT. XLI, PT. XLII, PT. XLIII, PT. XLIV, PT. XLV, PT. XLVI, PT. XLVII, PT. XLVIII, PT. XLIX, PT. L, PT. LI, PT. LII, PT. LIII, PT. LIV, PT. LV, PT. LVI, PT. LVII, PT. LVIII, PT. LIX, PT. LX, PT. LXI, PT. LXII, PT. LXIII, PT. LXIV, PT. LXV, PT. LXVI, PT. LXVII, PT. LXVIII, PT. LXIX, PT. LXX, PT. LXXI, PT. LXXII, PT. LXXIII, PT. LXXIV, PT. LXXV, PT. LXXVI, PT. LXXVII, PT. LXXVIII, PT. LXXIX, PT. LXXX, PT. LXXXI, PT. LXXXII, PT. LXXXIII, PT. LXXXIV, PT. LXXXV, PT. LXXXVI, PT. LXXXVII, PT. LXXXVIII, PT. LXXXIX

Recent enhancements to the SDAT Real Property map display application were developed by the Towson University Center for GIS (CGIS) with support from MDP and have included:

- Display of tax maps via a map service instead of as individual TIFFs
- Access to Pan and Zoom functions
- Updates on a six-month versus annual basis

These enhancements have significantly improved the overall quality of the information that is accessible via SDAT. The ability to Pan and Zoom has been particularly useful to users looking at large acreage or adjacent parcels. The Pan and Zoom functions have reduced the need for map plotting and reduced the need for citizens to walk into one of the SDAT field offices in order to view large parcels and the parcels that surround them.

## State Efforts to Facilitate Parcel Integration

Over the past three years, MDP has made an effort to be very inclusive regarding the parcel map dataset integration effort. These efforts have manifested primarily as outreach to stakeholders at MSGIC and MDiMAP meetings as described below. There has also been outreach to the Maryland Society of Surveyors through a presentation at their annual meeting, as well as a presentation to the State's Open Data Committee working group and the State's Legislative Task force on Open Data and Transparency.

## Data Sharing Agreements

In an effort to be inclusive with regards to parcel data sharing, formal data sharing agreements, or (MOUs), in support of the exchange of parcel-related data have been established with many counties and local jurisdictions throughout the life of this project. The current status of county, Annapolis and Baltimore City sharing agreements is shown below.

For most counties, a formal MOU is already in place. In a few instances a given jurisdiction has an open data sharing policy in place (for example, Howard County and Baltimore City) so no formal agreement is needed. In a few other instances (for example, Caroline and Somerset counties), MDP has assumed the primary responsibility for parcel maintenance and a less formal data sharing agreement is in place as an acknowledgement of shared responsibility.

<b>Jurisdiction</b>	<b>Data Sharing MOU/Agreement</b>	<b>Jurisdiction</b>	<b>Data Sharing MOU/Agreement</b>
Allegany	X	Harford	
Anne Arundel	X	Howard	Open Data
Annapolis	X	Kent	X
Baltimore City	Open Data	Montgomery	
Baltimore		Prince George's	
Calvert	X	Queen Anne's	X
Caroline	X	St. Mary's	
Carroll		Somerset	X
Cecil	X	Talbot	X
Charles	X	Washington	X
Dorchester	X	Wicomico	X
Frederick		Worcester	X
Garrett	X		

Most of the data sharing agreements currently in place support the full and open exchange of parcel-related data and give each organization the complete right to use and distribute those data as they see fit. Although significant progress has been made to date, there still is a major challenge in getting data sharing agreements in place with some of the more populous counties that have firmly established cost recovery policies in place. This is especially true for Baltimore, Montgomery and Prince George's counties.

## **Statewide Coordination**

There has been an increased effort associated with statewide coordination as a result of this project. The topic of statewide parcel mapping is a standing agenda item at the statewide MSGIC Executive Committee (monthly) and Technical (quarterly) meetings. At each meeting an update on parcel integration activities is presented and a forum for the discussion of issues associated with the development of a statewide parcel map dataset is provided. In addition to the MSGIC meetings, the requirements for parcel data are also regularly included as an agenda item at the MDiMAP technical and executive committee meetings. These coordination and awareness efforts at MSGIC and MDiMAP meetings will continue into the foreseeable future.

In addition to the State level coordination, MDP and the State will also work to present the results of this *Business Plan for Maryland* and work done on statewide parcel mapping at one or more national meetings. MDP expects to submit abstracts to present at the National States Geographic Information Council (NSGIC) mid-year meeting and/or the ESRI or Urban and Regional Information Systems Association (URISA) annual meetings.

## ***Business Plan for Maryland Statewide Parcel Data Development & Maintenance***

### **Conclusions and the Way Forward**

As a mandated legislative responsibility, the agency function of property (tax) map maintenance will in all likelihood continue to be a responsibility of the Maryland Department of Planning (MDP). Key to maintaining the viability of this function is the maintenance of current MDP staffing and funding levels.

Additionally, movement to an open data sharing model will, as discussed above, most likely require the addition of new MDP staff in support of parcel integration and ongoing data maintenance. Movement of these data out into the world will bring new requests for more and better data, and create new user support issues.

Because of this, MDP feels that the primary area of assistance that still needs to be addressed is budgetary. MDP as a State agency needs to be freed from the need for this project to operate as an enterprise fund in order to fulfill the requirements of the State, the Governor, the GIS community and the future. Therefore, as a final step in the parcel integration process, a formal business plan document will be prepared.

Additional funding issues related to MDP's Edgematching and Large County Dataset Integration Projects are also a major concern for MDP. Soon the agency will move to bring these projects before the Emergency Number Systems Board and other potential

funding entities to ensure that funding is already in place when these critical activities are ready to commence.

### **Major Overall Accomplishments to Date:**

- Monthly updates and discussion of parcel data integration goals and activities are being regularly provided at the MSGIC and MDiMAP Executive and Technical committee meetings.
- A summary matrix of all jurisdictions that have development parcel data has been developed. Contact information, a summary of database contents, maintenance activities and an overall assessment of each jurisdiction's parcel data has been performed.

A matrix summarizing the results of this work is included as **Attachment A**.

- A review of Maryland State revenue from parcel data for the past five years has been compiled; the review includes a summary of data sales to State agencies, local and federal government agencies; private and non-profit organizations; and individuals. As part of this review process; meetings were held with MDP's State Budget Analyst to discuss options and plans for putting parcel data into the public domain.

A copy of this review is included as **Attachment B**.

- MDP has worked with a private firm, Smart Data Strategies, Inc., to perform an evaluation of assessment data information (acreage and square footage) and to conduct an independent audit of the State's parcel data using their standardized methodology.

A copy of this report is included as **Attachment C**.

- A web-based review of all 50 states has been completed in order to identify what each state is doing with respect to publishing parcel data at the state level and to determine what states are selling data. In reviewing parcel data on the state websites. MDP also identified best practices for statewide web-based parcel mapping applications and identified what states are making parcel data available for download, and if so, at what cost.

## **Other Overall Accomplishments**

Significant project objectives that are already affecting the delivery of parcel map data statewide have already been completed. These include:

- Two MDP parcel-based products, *FINDER* Quantum and *FINDER* Online, were significantly redeveloped for the current Edition of these products.
- New integrated State/County parcel polygon datasets have already been developed or are underway for over half of Maryland's jurisdictions (counties and Baltimore City).
- Enhancements to the State Department of Assessments and Taxation (SDAT) Real Property website have been completed.
- Within MDiMAP, parcel data were merged into a single geodatabase instead of continuing to be delivered as countywide files.
- A workplan for future parcel data integration activities has been completed.
- Work is also underway to develop a Request for Proposal (RFP) for consultant assistance in conducting requirement work sessions.

How will this project continue into the future, grow and remain viable? Next steps include the following:

### **Ongoing and Upcoming Activities: Statewide Coordination**

- Continue to meet with and coordinate with MSGIC and MDiMAP on parcel data coordination and integration activities.
- Continue to meet with and provide information to MDP State Budget analysts on funding options with the objective of working towards making the parcel map dataset an open source dataset that is fully publically accessible.
- Enhance and expand integration and coordination with counties in support of parcel map dataset maintenance procedures.
- Continue to coordinate with Montgomery County as MDP develops large-county parcel integration strategies, guidelines and procedures.

## **Ongoing and Upcoming Activities: MDiMAP**

- Work to increase the refresh cycle of parcel data in MDiMAP to quarterly updates statewide.
- Add a link to [plats.net](http://plats.net) to each parcel account in MDiMAP in order to enable the accessing of a corresponding plat via a parcel query.
- Add a link to teach parcel account to open a Google StreetView and or a Microsoft Birds Eye View for a parcel from within MDiMAP.
- Improve the parcel map dataset metadata available from MDiMAP.

Once an Open Data policy is established, these additional activities related to MDiMAP can occur:

- Add parcel points to the MDiMAP parcel map dataset.
- Create the parcel point data as a Web Feature Service delivered by MDiMAP to support download, query and data analysis functionality to MDiMAP.
- Add text annotation data for reference or add a tax map service to MDiMAP.

## **Ongoing and Upcoming Activities: MDP's Property Map Products**

- Continue to support and enhance MDP's Property Map Products: *MdProperty View*, *FINDER* Quantum and *FINDER* Online.
- Develop a data download portal to ensure that Subscribers can access *MdProperty View* and *FINDER* Quantum data without the need to distribute data on DVD.
- Complete parcel integration activities for all counties in Maryland.

## **Additional Ongoing and Upcoming Activities**

- Enhance the content and search capabilities of parcel data contained within MDiMAP.
- Contract for Consultant work to conduct requirements work sessions and develop presentation materials for the work sessions.
- Conduct 3-4 requirements work sessions to include all interested stakeholders and document the results of the requirements work sessions.

## Budget Summary

A budget summary that can be used as a foundation for future planning is below.

Summary of Recommendations				Funding requirement above current baseline	
Priority	Target Start	Target Complete	Description & Benefit (these are a start but should be better match with headings in document)	One-time	Annual
High	2012	2016	Complete statewide parcel map that integrates state and local data reduces duplicate maintenance and providing more complete and accurate data to all users. This includes completing large counties that cannot be attempted at current funding levels.	\$ 200,000	Maintenance of existing staffing levels
High	2011	2014	Prepare MOUs to support data sharing between State (MDP) and other local agencies	NA	NA
Medium	2012	2014	Enhancement of MD Property View Products and tools - ArcGIS, Open Source, and Web Application. Develop FINDER Online Lite application and migrate FINDER Online to open development platform	\$40,000	Included as part of staff & maintenance operations
High	2013	2014	Open Parcel Map full and free distribution to other State Agencies via MDP. This eliminates need to sell and distribute data to other State Government agencies subscribers.	NA	\$ 350,000
High	2013	2014	Open Parcel Map full and free distribution on MD iMap. Meets the Governor's One Maryland One Map goal and allows data distribution to be greatly simplified. The data greatest value comes from its use not its sale.	NA	\$ 350,000
Medium	2014	2017	Parcel map normalization to a statewide minimum standard. This would allow for enhance cross-county analysis while permitting counties to maintain more than the minimum required attributes at their discretion.	NA	Included as part of staff & maintenance operations
Medium	2015	2016	Updated and improved tools for joint state/county maintenance including updated tools and procedures. This tools are needed to support the initiatives above.	\$40,000	Included as part of staff & maintenance operations
Medium		2014	County edgematching. This would also further cross-county analysis by improving data accuracy along county boundaries.	\$250,000	
Medium	2013	2014	MD iMap and SDAT basic distribution improvements. This will improve the usability of parcel data on MD iMap, but stop well short of fully open data.	NA	Included as part of staff & maintenance operations
<b>Total</b>				<b>\$ 530,000</b>	<b>\$ 700,000</b>

## **Attachments**

### **Attachment A:**

Summary of Maryland Jurisdiction Parcel Mapping Status

### **Attachment B:**

Summary of Other State Parcel Mapping Sites and Data Distribution Approaches

### **Attachment C:**

Selected Examples of State Parcel Websites

## **Feedback on the Cooperative Agreements Program (CAP)**

### *1. What are the CAP Program strengths and weaknesses?*

The primary strength of the program is that it provides baseline funding for focused business planning activities. The main weakness is the lack of funding for the 2013 and 2014 fiscal years. The State of Maryland and the GIS Community at large are disappointed that funding was cut for this important program.

### *2. Where did it make a difference?*

For MDP, it made a difference in being able to clearly define measurable tasks in order to complete parcel integration and enhancement tasks, in being able to research, migrate and develop new products and in helping redefine MDP's recommended business model. It also helped in developing a broader understanding of what other states are doing in terms of statewide parcel development.

### *3. Was the assistance you received sufficient or effective?*

The assistance was excellent. It was particularly useful to be able to get access to previous business plans on the FGDC website. The existing documents are an excellent source of implementation ideas and also assist in providing templates and guidelines for document preparation. The kickoff meeting was good and the invoicing support was also helpful.

### *4. What would you recommend that the FGDC do differently?*

MDP would recommend the business planning program areas be expanded to include addressing data, planimetric information, impervious surface datasets and land use/land cover information. These are all framework datasets that support the GIS activities cross State, federal and local government agencies.

### *5. Are there factors that are missing or are there additional needs that should be considered?*

It would be good to have business plans available on the FGDC website from states beyond those that received CAP grants. This would have eliminated some of the need to do background research. Additional cost benefit information on the advantages of open parcel data also would have been helpful.

### *6. Are there program management concerns that need to be addressed, such as the time frame?*

No. The timeframe (18 months) was adequate to complete the work involved.

### *7. If you were to do the project again, what would you do differently?*

MDP was able to work with USGS representatives to complete the task by working with in-house resources rather than by hiring a consultant. This flexibility in approach allowed us to produce a more customized product.