

**THE COUNCIL ON OPEN DATA ANNUAL REPORT**  
**January 10, 2016**

The Honorable Larry Hogan  
Governor  
State House Annapolis MD 21401

The Honorable Thomas V. Mike Miller, Jr.  
President of the Senate  
H-107 State House Annapolis MD 21401-1991

The Honorable Michael E. Busch  
Speaker of the House H-101  
State House Annapolis MD 21401-1991

**Executive Summary:** The Council on Open Data has met quarterly in calendar year 2015. The Council’s accomplishments include:

<b>Council on Open Data Major Accomplishments—2015</b>	<b>Page Number</b>
<ul style="list-style-type: none"> <li>Maryland modified State Government Section 10-901 through 10-905, “Automated Mapping—Geographic Information Systems.”</li> </ul>	4
<ul style="list-style-type: none"> <li>The Department of Information Technology (DoIT) created a joint search for Maryland’s two open data sites: MD iMAP and the Open Data Portal.</li> </ul>	4
<ul style="list-style-type: none"> <li>The State Department of Assessments and Taxation (SDAT), Department of Planning (MDP), and DoIT made mass real property assessment records from SDAT and MDP freely available.</li> </ul>	6
<ul style="list-style-type: none"> <li>State agencies published new datasets on <a href="http://data.maryland.gov">data.maryland.gov</a> and <a href="http://data.imap.maryland.gov">data.imap.maryland.gov</a>. Agencies also created new <a href="#">dashboards</a> and <a href="#">maps</a> to help the public explore the data.</li> </ul>	8
<ul style="list-style-type: none"> <li>DoIT launched the <a href="#">Dataset Freshness Report</a> to automatically find data that require updates.</li> </ul>	10
<ul style="list-style-type: none"> <li>DoIT made it easier for local governments to share their public data by providing free access to <a href="#">MD Geoshare</a> for publishing map data and <a href="#">microsites</a> for publishing alphanumeric data.</li> </ul>	10
<ul style="list-style-type: none"> <li>DoIT made it possible for citizens and firms to <a href="#">download Maryland aerial imagery</a> to their own systems.</li> </ul>	12
<ul style="list-style-type: none"> <li>The Secretary of State and DoIT created an <a href="#">online open meetings calendar</a> and RSS data feed. These more modern interfaces supplement but do not replace the traditional Maryland Register based notifications.</li> </ul>	12
<ul style="list-style-type: none"> <li>data.gov added all services from MD iMAP.</li> </ul>	13

The Council’s goals and recommendations for calendar year 2016 are:

<b>Council on Open Data Recommendations and Goals—2016</b>	<b>Page Number</b>
<ul style="list-style-type: none"> <li>The Department of Budget and Management (DBM), DoIT, and state agencies should collaborate with the Governor’s Office of Performance Improvement (GOPI) to open and publish Managing for Results (MFR) data and other datasets identified by GOPI.</li> </ul>	14
<ul style="list-style-type: none"> <li>GOPI should monitor agency and gubernatorial initiatives and identify opportunities to make data public.</li> </ul>	15
<ul style="list-style-type: none"> <li>Departments engaged in permitting and compliance, including but not limited to Department of Labor Licensing and Regulation (DLLR), the Department of Health and Mental Hygiene (DHMH), and Maryland Department of the Environment (MDE) should make more information available as open data.</li> </ul>	16
<ul style="list-style-type: none"> <li>DoIT should develop and provide regular training sessions for agency staff on how to make data public.</li> </ul>	18
<ul style="list-style-type: none"> <li>DoIT should inform research librarians in Maryland’s public libraries to train them on finding and working with Maryland’s Open Data websites.</li> </ul>	18
<ul style="list-style-type: none"> <li>The Governor’s Office of Crime Control and Prevention (GOCCP) and DoIT should development a dashboard to help citizens analyze crime data by county.</li> </ul>	19
<ul style="list-style-type: none"> <li>DBM and DoIT should publish Maryland’s Operating Budget as open data and develop an interactive dashboard to help citizens explore budget data.</li> </ul>	19
<ul style="list-style-type: none"> <li>DoIT should incorporate a statewide dataset inventory into Maryland’s Information Technology Management Plan.</li> </ul>	19
<ul style="list-style-type: none"> <li>DoIT, with input from the council, should report on the costs and benefits of a potential statewide Public Information Act (PIA) tracking database.</li> </ul>	20
<ul style="list-style-type: none"> <li>DoIT, with input from the council, should evaluate open source alternatives to Maryland’s current open data portals.</li> </ul>	21
<ul style="list-style-type: none"> <li>The Office of the Attorney General (OAG) and DoIT should leverage new provisions of the PIA to encourage agencies to identify additional datasets for publication as open data.</li> </ul>	21
<ul style="list-style-type: none"> <li>DoIT should make full address points and LIDAR data available to the public as open data portals.</li> </ul>	22

**Background and Summary.** The [Open Data Act](#) (State Government, Chapter 69, Section 10-1401 through 10-1404) became effective June 1, 2014. Since then, the Council on Open Data has met quarterly, publishing extensive meeting materials online. Some of the council’s major accomplishments in 2015 are listed in the table below. Please refer to the page numbers shown for additional details.

Council on Open Data Major Accomplishments—2015	Page Number
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Even as the Council on Open Data has taken these concrete steps, per the Open Data Act, to make “...open data ... machine readable and released to the public in ways that make the data easy to find, accessible, and usable,” additional action is needed from the Council and state agencies to facilitate the completion of this directive.

In August 2014 the Center for Data Innovation ranked Maryland in a [six-way tie for first place](#) for the best Open Data policies and websites in the country. This #1 ranking, however, was largely based on policies in the Open Data Act, which at the time was newly passed. Maryland state agencies are required in statute to publish their data as Open Data, making it fully accessible by the public. To be effect this directive must be accompanied by training, education, incentives, oversight, and enforcement of agencies’ participation in Open Data. It is the hope of the Council on Open Data that this report outlines a strategy for 2016 to address current shortcomings in the State’s Open Data programs.

Following a brief overview of the council's 2015 accomplishments, this report's primary focus is forward-looking, covering suggested means to improve service delivery of Maryland's information resources to the public.

### **Part 1: Council on Open Data Accomplishments—2015**

Full accomplishments of the council and participating state agencies in 2014 can be found by reviewing the meeting minutes, briefing memos, and presentations from each meeting, all included on the council's website. A summary of this year's accomplishments is included below.

- **Maryland modified State Government Section 10-901 through 10-905, “Automated Mapping–Geographic Information Systems.”**
  - This 1992 statute had the goal of sustainably funding the first generation of digital maps. It allowed state and local agencies to pass along “a reasonable share” of overhead costs to customers. Now state agencies are no longer allowed to pass long overhead costs. [Washington County GIS](#) and [Prince George's County Planning](#) made their GIS data publicly available this year in response to this change. Following is the full repealed language: ~~“Governmental units may charge ... “a reasonable share of the overhead costs of the system.”~~
  - ~~“Only a person who has entered into a contract with a governmental unit may have on-line access to the geographic data in a system under the terms of the contract.”~~
- **DoIT created a joint search for Maryland's two open data sites: MD iMAP and the Open Data Portal.**
  - Maryland's two open data sites are now searchable through a single data catalogue. All map layers from MD iMAP, Maryland's geographic information portal, are now searchable directly from Maryland's Open Data Portal, [data.maryland.gov](http://data.maryland.gov). Instead of toggling between MD iMAP to search 440 maps and [data.maryland.gov](http://data.maryland.gov) to search 330 datasets, as of November 6, 2015, all of Maryland's open data is now searchable at [data.maryland.gov](http://data.maryland.gov).
  - Search results link directly to MD iMAP layers. MD iMAP metadata is copied to [data.maryland.gov](http://data.maryland.gov). DoIT re-indexes all MD iMAP layers on [data.maryland.gov](http://data.maryland.gov) monthly.
  - Counties' open data sites also are included. Search results from [dataMontgomery](#) and [OpenHoward](#) were added to these search results this year, joining [OpenBaltimore](#).

The screenshot shows the Maryland Open Data Portal interface. At the top, it features the Maryland state logo and the text 'Department of Information Technology OPEN DATA PORTAL'. A search bar contains the text 'Search for Datasets, Maps, and Graphs'. Below the search bar, there are navigation options for 'Local Data' and social media links. The main content area displays search results for the query 'state police'. The results are organized into a table with columns for 'Name', 'Popularity', and 'Type'. Three results are visible: 1) '2012 Vehicle Collisions Investigated by MSP Rockville Barrack' with 212 views; 2) 'MD iMAP: State Police Barracks' with 70 views, which is circled in red; and 3) 'Crime-API' with 14 views. A left sidebar contains filters for 'View Types' (Data Lens pages, Datasets, Charts, Maps, Calendars, Filtered Views, External Datasets, Files and Documents, Forms) and 'Categories' (Administrative, Agriculture, Biota, Boundaries, Budget, Public Safety). A 'Topics' section at the bottom left lists 'maryland'.

Name	Popularity	Type
 2012 Vehicle Collisions Investigated by MSP Rockville Barrack Collisions investigated by the Maryland State Police in 2012 (does not include collisions investigated by local jurisdictions). Collisions investigated by the Maryland State Police in 2012 (does not include collisions investigated by local jurisdictions). No matching rows found	212 views	
 MD iMAP: State Police Barracks This is a MD iMAP hosted service. Find more information at This is a MD iMAP hosted service. Find more information at at http://imap.maryland.gov. This dataset contains Maryland Police Facilities (State, County, Municipal, Federal, University and Other State Agencies). Last Updated: 08/13/2014 Map Service Link: Police/MapServer?rel=ho:follow external->http://geodata.md.gov/imap/rest/services/PublicSafety/MD_Police/MapServer ADDITIONAL LICENSE TERMS: The Spatial Data and the information therein (collectively the "Data") is provided "as is" without warranty of any kind either expressed or implied.	70 views	
 Crime-API Provided by data.montgomerycountymd.gov **See the Attachment section in the About menu for a quick start guide** Updated daily postings on Montgomery County's open data website, dataMontgomery, provide the public with direct access to crime statistic databases - including raw data, mapping and search functions - of reported County crime. The data presented is derived from reported crimes classified according to Maryland criminal code and documented by approved police incident reports. The data is compiled by "EJustice", a respected law enforcement records-management system used by the Montgomery County Police Department and many other law enforcement agencies. To protect victim privacy, as	14 views	

Figure 1: Search results for “State Police” on Maryland’s Open Data Portal, data.maryland.gov. The result circled in red links to MD iMAP, Maryland’s geographic information portal. The three search results shown are from data.maryland.gov, MD iMAP, and dataMontgomery, respectively.

The screenshot shows the MD iMAP website interface. At the top, there is a navigation bar with 'MENU' and links for 'Maryland.gov', 'Phone Directory', 'State Agencies', and 'Online Services'. The main header features the 'MARYLAND .gov' logo and 'MD iMAP MARYLAND'S MAPPING & GIS DATA PORTAL'. A search bar is present with the text 'Search for open data' and a 'SEARCH WITHIN MAP' checkbox. A 'My Activity' button is also visible.

The map displays several blue dots representing police barracks across Maryland. A tooltip for one dot shows 'Agency Name: Maryland State Police'. The map includes a search bar, zoom controls, and map style options (MAP, SATELLITE, etc.).

Below the map, the title 'State Police Barracks' is displayed along with 'Open In ArcGIS', 'Share', 'Download Dataset', and 'APIs' options. A tabbed interface shows 'Details' and 'Table' views. The 'Table' view shows 24 rows of data.

Address	City	State	ZIP Code	Type	County	Areas Served	Barrack
9500 Mitch...	La Plata	MD	20646	State	Charles	Charles	Barr
23200 Leon...	Leonardtown	MD	20650	State	St. Mary's	St. Mary's	Barr
210 Main St...	Prince Fred...	MD	20678	State	Calvert	Calvert	Barr
10100 Rho...	College Park	MD	20740	State	Prince Geor...	Prince George...	Barr
3500 Forest...	District Heig...	MD	20747	State	Prince Geor...	Prince George...	Barr
7777 Washi...	Jessup	MD	20794	State	Howard	Howard	Barr

Figure 2: Links on data.maryland.gov lead users to data.imap.maryland.gov, where the data can be downloaded.

- SDAT, MDP, and DoIT made mass real property assessment records from SDAT and MDP available.** DoIT has published mass full real property assessments statewide to data.maryland.gov. The dataset can be found [here](#). The records use the State Department of Assessments and Taxation’s full records combined with select data from the Maryland

Department of Planning, e.g., latitude and longitude. Anyone in Maryland can now easily look up their property's assessed value, complete with all information tracked by SDAT. SDAT and MDP make these data available through [Real Property Search](#) and [FINDER Online](#), respectively. DoIT's dataset of real property assessments is unique because the records were not previously publicly available en masse. Real Property Search loads one property's record at a time, whereas DoIT's dataset shows all approximately 2.4 million records in a single, public data table. *FINDER* Online shows the data on a statewide map, but also loads one record at a time. Please note that neither *FINDER* Online nor Real Property Search have been deprecated; all three ways of accessing real property records have their own strengths, e.g., *FINDER* Online is the only method which includes a map.

- The preferred way to access [DoIT's real property data](#), is an interactive dashboard called a Data Lens. The dashboard includes graphs like number of properties by county, by city, and by zip code. Land, property, and improvement values are cross-filterable and cross-searchable. The underlying data are fully downloadable and geocoded by MDP.
- MDP has also increased its offerings for its public [Property Map Products](#) this year. MDP put its full *MdProperty View* data [online and publicly available for the first time](#), after charging for access to the data for about 20 years.

Maryland.gov

## Maryland Real Property Assessments: Hidden Property Owner Names - Data Lens

Please read all metadata before accessing the dataset. Note that records shown here are updated at different frequencies from data in products from MDP and SDAT. Please see the full documentation at...

Show more ▾

Download API

Showing the number of Rows

MDP Street Address (MDP Field: ADDRESS)	MDP Street Address City (MDP Field: CITY)	MDP Street Address Zip Code (MDP Field: ZIPCODE)
<input type="text" value="Search"/> <input type="button" value="Q"/> Type some text and press Enter to search (Examples: '13177 POINT LOOKOUT ROAD' or '16101 PINEY POINT ROAD')	<input type="text" value="Search"/> <input type="button" value="Q"/> Type some text and press Enter to search (Examples: 'BALTIMORE' or 'CLEAR SPRING')	<input type="text" value="Search"/> <input type="button" value="Q"/> Type some text and press Enter to search (Examples: '21842' or '21218')

Number of Rows by County Name (MDP Field: CNTYNAME)	Number of Rows by MDP Street Address City (MDP Field: CITY)	Number of Rows by MDP Street Address Zip Code (MDP Field: ZIPCODE)																								
<table border="1"><thead><tr><th>County Name</th><th>Number of Rows</th></tr></thead><tbody><tr><td>Prince George's County</td><td>~250K</td></tr><tr><td>Baltimore County</td><td>~150K</td></tr><tr><td>Montgomery County</td><td>~100K</td></tr></tbody></table>	County Name	Number of Rows	Prince George's County	~250K	Baltimore County	~150K	Montgomery County	~100K	<table border="1"><thead><tr><th>City</th><th>Number of Rows</th></tr></thead><tbody><tr><td>SILVER SPRING</td><td>~150K</td></tr><tr><td>BALTIMORE</td><td>~100K</td></tr><tr><td>(No value)</td><td>~50K</td></tr></tbody></table>	City	Number of Rows	SILVER SPRING	~150K	BALTIMORE	~100K	(No value)	~50K	<table border="1"><thead><tr><th>Zip Code</th><th>Number of Rows</th></tr></thead><tbody><tr><td>21224</td><td>~150K</td></tr><tr><td>21842</td><td>~100K</td></tr><tr><td>(No value)</td><td>~50K</td></tr></tbody></table>	Zip Code	Number of Rows	21224	~150K	21842	~100K	(No value)	~50K
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- State agencies published new datasets on [data.maryland.gov](http://data.maryland.gov) and [data.imap.maryland.gov](http://data.imap.maryland.gov). Agencies also created new [dashboards](#) and [maps](#) to help the public explore the data.

Selection of High-Value Datasets, Maps, and Dashboards - New for 2015		
data.maryland.gov		
Link	Description	Date Added
<a href="#">FY14 Payments Data</a>	The newest data shows all payments larger than \$25,000 made by the State in FY2014. 19,906 transactions are shown for this year alone. This was one of the most accessed datasets of the year.	January 2015
<a href="#">Maryland Real Property Assessments</a>	DoIT, SDAT, and MDP made public full records for real property assessment data available for the first time, now available with monthly updates, for all 2.38 million properties statewide.	September 2015
<a href="#">Violent Crime &amp; Property Crime by County: 1975 to Present</a>	GOCCP made these data available to DoIT in preparation for a dashboard of crime data.	
<a href="#">Maryland State Agency Contact Information</a>	Full listing of principal departments within the Executive Branch, including contact information: phone, email, website, social media, etc. Also includes Public Information Act (PIA) representatives' names, addresses, phone, numbers, and email addresses for each agency.	October 2015
<a href="#">Dataset Freshness Report</a>	Shows whether data on the Open Data Portal and MD iMAP are up to date, or require updating.	December 2015
Dashboards		
Link	Description	Date Added
<a href="#">MEA Smart Energy Investment Dashboard</a>	MEA and ESRGC mapped grants awarded to renewable energy, energy efficiency, and transportation projects.	January 2015
<a href="#">Give Maryland</a>	DHCD and ESRGC just launched this interactive map of tax credits awarded to Maryland non-profits, additional available tax credits, and direct links to donate to Maryland non-profits.	September 2015

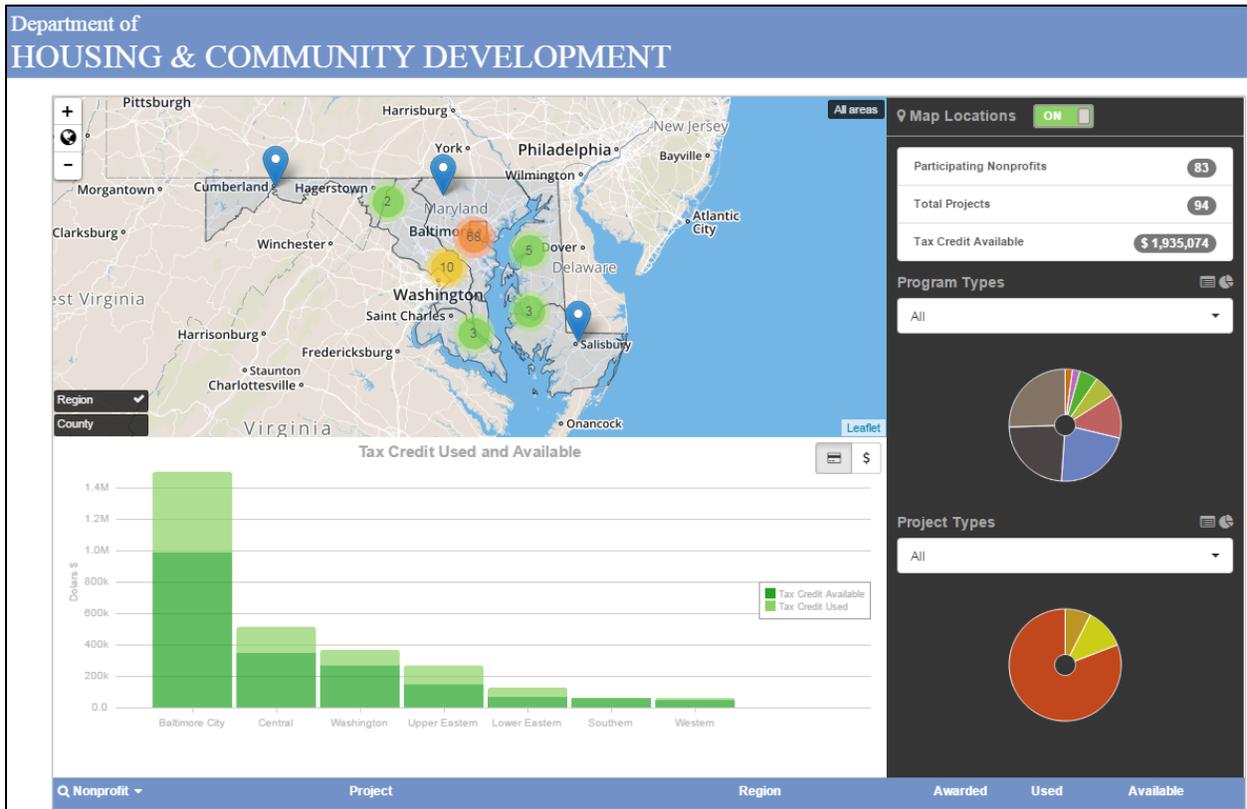


Figure 3: Screenshot from the [GiveMaryland](http://givemaryland.org) dashboard ([givemaryland.org](http://givemaryland.org)), developed by the Eastern Shore Regional GIS Cooperative (ESRGC) for the Department of Housing and Community Development (DHCD).

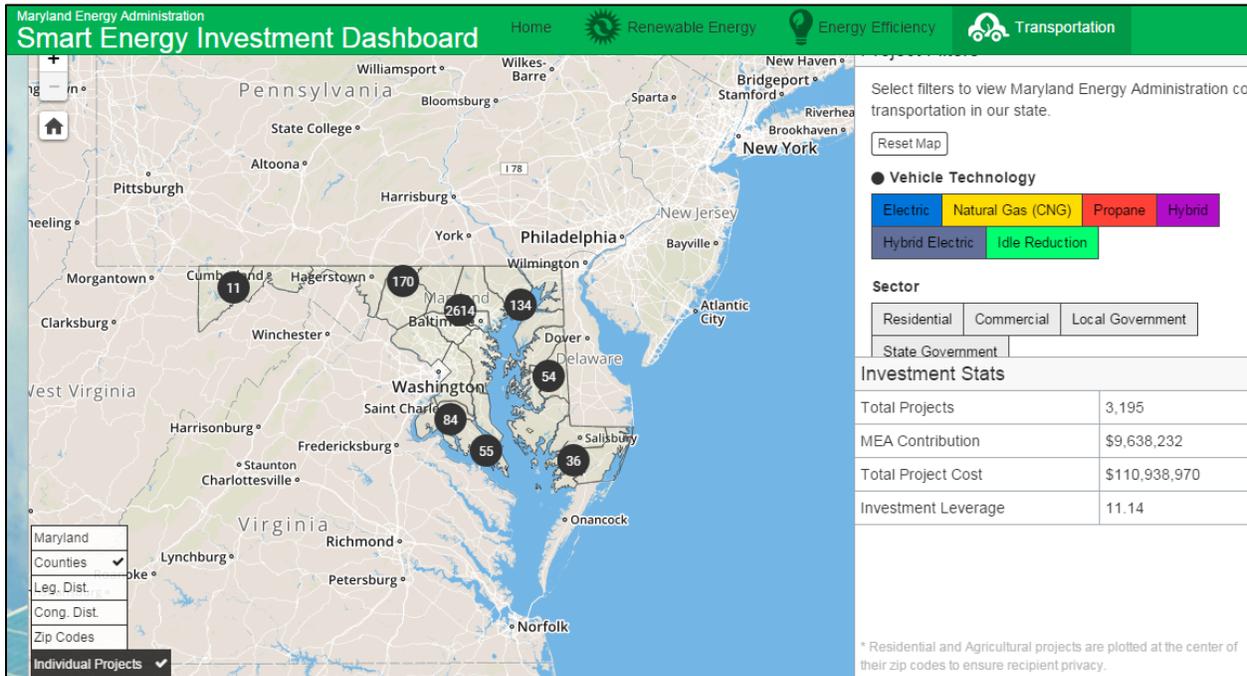


Figure 4: Screenshot of the Maryland Energy Administration's Smart Energy Investment Dashboard.

- **DoIT launched the [Dataset Freshness Report](#) to automatically find datasets that require updates.**
  - At the most recent meeting of the council (November 10, 2015), DoIT provided users of the Open Data Portal, [data.maryland.gov](http://data.maryland.gov), with a new tool to check whether datasets require updating. Called the Dataset Freshness Report, the tool is itself a dataset on [data.maryland.gov](http://data.maryland.gov). Every dataset on [data.maryland.gov](http://data.maryland.gov) is evaluated to see whether it has been updated recently enough. For example, in the following screenshot, the Open Data Portal dataset “Summer Food Service Program Participation” is a dataset of annual data, i.e., new numbers are reported each year. Since the date of the most recent data change was 61 days ago, the tool automatically determines that the dataset is up to date (its value for “Updated Recently Enough?” is “Yes”). This tool will be made live to the public at the next council meeting, allowing citizens to hold state agencies directly accountable if they are failing to update their Open Data Portal datasets.
  - By automatically calculating whether its datasets are fresh or stale, Maryland is doing something that no other open data site in the country is doing. Maryland is leading in this area, and the vendor for the Open Data Portal, Socrata, has expressed interest in using Maryland’s new tools to assist other customers. DoIT has provided the code to [OpenPGC](#), Prince George’s County’s Open Data site, which is now using it to keep an eye on its own open data site.

Dataset Name	Summer Food Service Program Participation
Link	<a href="https://data.maryland.gov/d/adfi-nfw7">https://data.maryland.gov/d/adfi-nfw7</a>
Updated Recently Enough?	Yes
Owner	data.maryland.gov Administration
User who Made Last Update	<a href="https://data.maryland.gov/profile/cs6p-bz62">https://data.maryland.gov/profile/cs6p-bz62</a>
Update Frequency	Annually
Date of Most Recent Data Change	Wed Sep 02 2015 11:08:33 GMT-0400 (EDT), 61 days ago
Number of Rows	7

Figure 5: An example of tracking whether a single dataset is up to date. Because the dataset contains annual data and was updated less than one year ago (61 days ago), DoIT’s algorithm evaluates it as up to date.

- **DoIT made it easier for local governments to share their public data by providing free access to [MD Geoshare](#) for publishing map data and [microsites](#) for publishing alphanumeric data.**
  - ArcGIS Online: Additional organizational account with up to 250 named users and 37,500 annual service credits. Name users may be employees or contractors of any local

government, regional government, university, or public authority within the State of Maryland.

- The mission for Maryland Geoshare is publicly sharing GIS data and tools to support decision makers with information that helps Maryland’s citizens -- and privately sharing GIS data among government agencies to support public missions such as providing situational awareness during emergencies and recovering from disasters. The data are not currently publicly available but the council is open to making the data available at a later date, if participating local governments desire. Employees of local governments can sign up for Maryland Geoshare at no additional cost, allowing services the state purchases to be distributed among localities.
- A similar approach on the Open Data Portal allows municipalities, counties, or any government in the state with a population less than 100,000 to create their own Open Data site for free. So far, Mt. Rainier and the City of Frederick have signed up. There is no cost to local governments, and each local site can have up to 50 datasets hosted (compared to 500 for the statewide site). Any local government interested in signing up can use [this form](#).

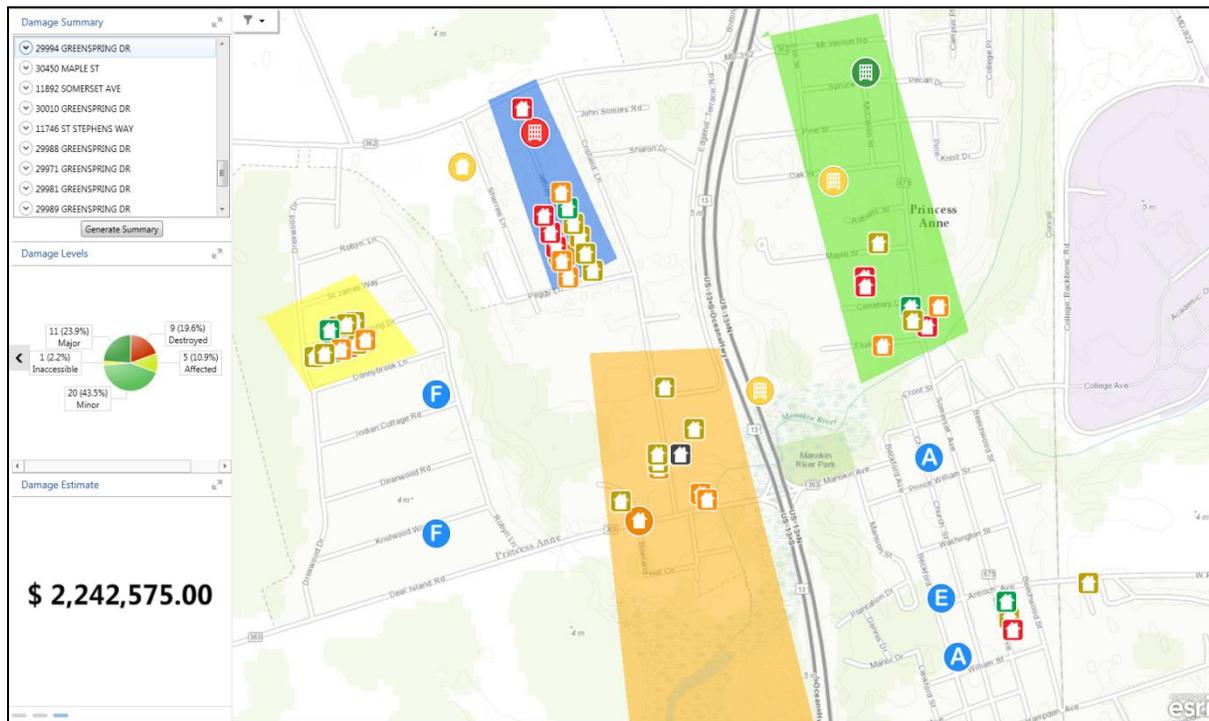


Figure 6: Damage assessment with Maryland Geoshare

- DoIT made it possible for citizens and firms to [download Maryland aerial imagery](#) to their own systems.
- The Geographic Information Office (GIO) within DoIT has made aerial imagery from many collection years, including specialty imagery, available for free download on MD iMAP. The available imagery can be found at <http://imap.maryland.gov/Pages/imagery-download.aspx>.
- Downloads can be obtained for [focused areas](#) or [predefined areas](#).
- Offering the imagery for free saves government money overall by not requiring local governments to pay for their own separate copies of maps which state agencies have already produced.

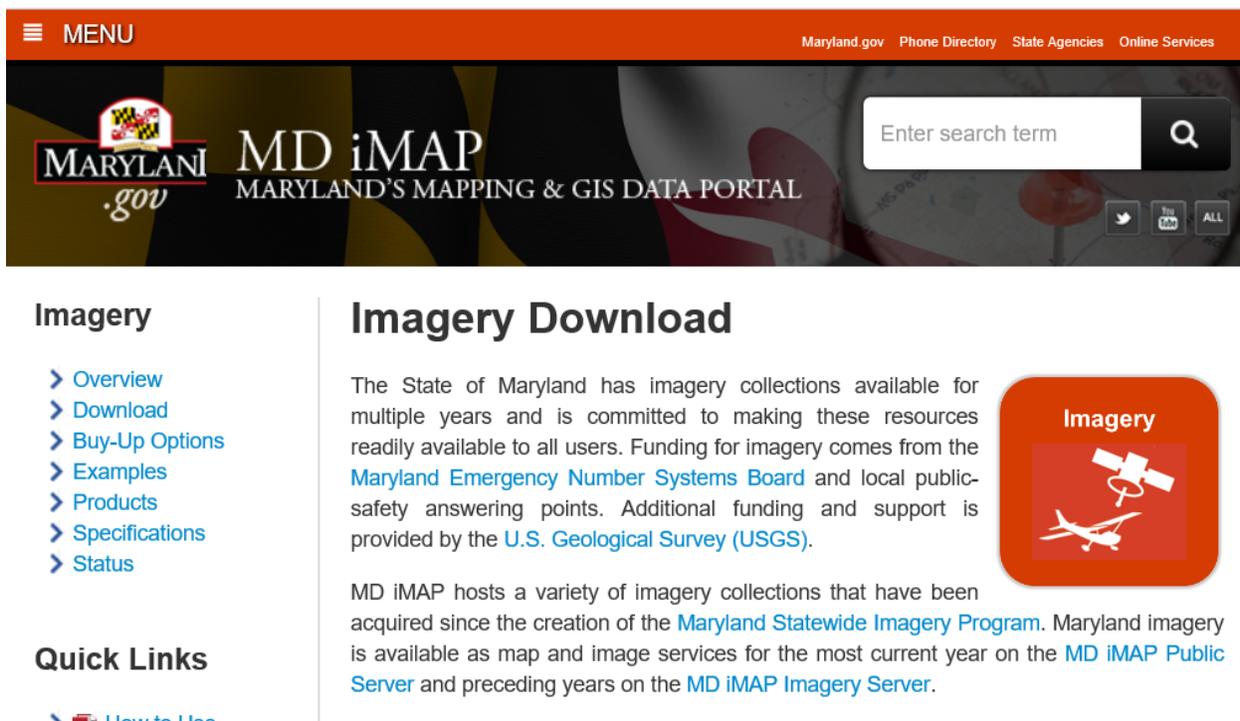


Figure 7: MD iMAP has made it possible to download the state's imagery data.

- The Secretary of State and DoIT created an [online open meetings calendar](#) and RSS data feed. These more modern interfaces supplement but do not replace the traditional Maryland Register based notifications.
  - Open Meetings which are already listed in the Maryland Register are now mirrored on this new, online calendar. Whereas the Register lists open meetings in periodic, public PDF files, the new version provides many more options for staying informed on open meetings. As seen in the screenshot below, the interface is an interactive calendar which allows users, state employees and public users alike to browse for open meetings by date, category (e.g., health), location, or keyword. Users can also subscribe to this calendar's RSS feed, which allows for automatic notifications, through email or external

applications, of newly listed open meetings. Please note that this does not replace the PDFs listing upcoming open meetings, which historically have been the main way to see these events. Instead, the new calendar just gives users additional options.

The screenshot displays the 'Meetings & Events' page on Maryland.gov. At the top left is the Maryland state logo and the text 'MARYLAND.GOV'. Below this is a navigation bar with icons for 'day', 'week', 'month', and 'year' views. A message reads: 'Please note participating agencies in the drop-down menu. Please use the Help button to the right for any assistance while using the Calendar.' To the right of the message are icons for 'subscribe', 'download', 'help', and 'print'. The main content area is divided into two sections. On the left is a calendar for 'November 2015' with a 'Display Month:' dropdown menu set to 'Select'. On the right is the 'DATE/TIME VIEW' for 'NOVEMBER 8, 2015 - NOVEMBER 6, 2016'. Below this is a table with columns for 'Start Date and Time', 'Event Details', and 'Location'. The table lists two events: 'Maryland Agricultural Commission' on Tuesday, November 10, 2015, from 8:30 AM to 12:00 PM, and 'Council for Open Data meeting' at MDOT Headquarters from 1:00 PM to 3:00 PM.

Figure 8: New Maryland.gov open meetings calendar

- **data.gov added all services from MD iMAP.**
  - The Council and the Department of Information Technology work to federate Maryland’s Open Data websites so that as much public data as possible can be centralized. This applies not only to the integration of the Open Data Portal and MD iMAP, as previously discussed (see p. 4), but also to federation of Maryland’s county-level open data sites. This means that the Open Data Portal, which primarily includes data produced by state agencies, also links to all Open Data from Baltimore City’s, Montgomery County’s, and Howard County’s Open Data sites (with federation from Prince George’s County’s Open Data site recommended for 2016).
  - This process of federating counties’ Open Data to the state open data site, the Open Data Portal, is analogous to how Maryland’s sites work with larger, federal sites. Data.gov is the federal Open Data Portal and primarily contains data produced by federal agencies – but it also automatically lists data found on state’s Open Data sites. Maryland’s Open Data Portal’s contents have been listed on data.gov for many years, but 2015 marked the first time that data.gov federated data from MD iMAP, Maryland’s geographic information portal. Now all of Maryland’s Open Data can be found on data.gov.

**Part 2: Recommendations and Goals for 2016.**

Council on Open Data Recommendations and Goals—2016	Page Number
<ul style="list-style-type: none"> <li>The Department of Budget and Management (DBM), DoIT, and state agencies should collaborate with the Governor’s Office of Performance Improvement (GOPI) to open and publish Managing for Results (MFR) data and other datasets identified by GOPI.</li> </ul>	14
<ul style="list-style-type: none"> <li>GOPI should monitor agency and gubernatorial initiatives and identify opportunities to make data public.</li> </ul>	15
<ul style="list-style-type: none"> <li>Departments engaged in permitting and compliance, including but not limited to Department of Labor Licensing and Regulation (DLLR), the Department of Health and Mental Hygiene (DHMH), and Maryland Department of the Environment (MDE) should make more information available as open data.</li> </ul>	16
<ul style="list-style-type: none"> <li>DoIT should develop and provide regular training sessions for agency staff on how to make data public.</li> </ul>	18
<ul style="list-style-type: none"> <li>DoIT should inform research librarians in Maryland’s public libraries to train them on finding and working with Maryland’s Open Data websites.</li> </ul>	18
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<ul style="list-style-type: none"> <li>DoIT, with input from the council, should report on the costs and benefits of a potential statewide Public Information Act (PIA) tracking database.</li> </ul>	20
<ul style="list-style-type: none"> <li>DoIT, with input from the council, should evaluate open source alternatives to Maryland’s current open data portals.</li> </ul>	21
<ul style="list-style-type: none"> <li>The Office of the Attorney General (OAG) and DoIT should leverage new provisions of the PIA to encourage agencies to identify additional datasets for publication as open data.</li> </ul>	21
<ul style="list-style-type: none"> <li>DoIT should make full address points and LIDAR data available to the public as open data.</li> </ul>	22

- The DBM, DoIT, and state agencies should collaborate with GOPI to open and publish MFR data and other datasets identified by GOPI.** Governor Hogan signed Executive Order 01.01.2015.26 on October 8, 2015, creating the Governor’s Office of Performance Improvement (GOPI). The order “...established [GOPI] as a separate business unit within the Executive Department to improve business processes throughout Maryland state agencies through greater accountability.” GOPI’s primary data sources are going to be extensions of datasets that, in the previous administration, were submitted to the Governor’s Office through the StateStat program (now deprecated), as well as Managing for Results (MFR) data from the Department of Budget and Management.

  - Active agency participation will be needed.* GOPI and DoIT have begun the intensive process of uploading all of GOPI’s data to the Open Data Portal. An example can be

found [here](#), showing metrics of business licensing tracked by the Department of Commerce and submitted to GOPI. This effort will require active participation and buy-in from all agencies participating in GOPI meetings. DoIT will provide technical expertise to agencies, script data extracts where necessary, and actively work with GOPI. If state agencies do not cooperate with GOPI and DoIT, however, this initiative will fail, and GOPI's data sources—its means of performance improvement—will be in jeopardy. State agencies must follow data formatting instructions from DoIT and GOPI for this initiative to succeed, and not all agencies have been willing to do this in the past.

- ***Integration of MFR data into GOPI and open data.*** MFR predated the creation of the StateStat program. The programs' data sources were overlapping, but both programs also tracked unique data. The programs aimed to achieve similar ends—performance improvement for state agencies—with MFR's focus on budgetary decision making and StateStat's focus on policy. Allowing GOPI direct access to MFR's raw data is a natural next step and untapped synergy. The council recommends that, whenever possible, MFR data be made available to GOPI in a format that can be uploaded to [data.maryland.gov](http://data.maryland.gov) as open data. Unless any MFR data contains Personally Identifying Information (PII), would pose a security risk if made public, or meets a small number of discrete exceptions listed in the Open Data Act, the Open Data Act compels state agencies to publicly release all MFR data as open data.
- **GOPI should monitor agency and gubernatorial initiatives and identify opportunities to make data public.**
  - Governor Hogan's Executive Order establishing the Governor's Office of Performance Improvement was released on October 8, 2015 (see previous section for more details). GOPI's plans to use Open Data as its primary data source and analysis medium bring a clear direction and renewed focus for Maryland's Open Data and performance management programs. The establishment of GOPI is an opportunity for more agencies and state employees to jump into Open Data: making their data public and improving service delivery.
  - The start of 2015 saw less active participation in Maryland's Open Data programs from state agencies, compared to participation in 2014. The Council instructed all participating agencies to upload 3 datasets to [data.maryland.gov](http://data.maryland.gov). Only a handful uploaded any datasets, and out of those datasets updated in that push, none have been updated since. The Council on Open Data is able to follow up on specific datasets, either during Council meetings or with Council members between the meetings, but more formalized oversight is needed to make sure agencies are complying with the Open Data Act -- both by publishing their data resources as Open Data and updating these datasets as new data become available. The Council recommends that GOPI monitor quality and quantity of each agency's dataset uploads as part of its regular meetings. The Council also

recommends that agencies' Open Data compliance continue to be monitored through the Council on Open Data. The Dataset Freshness Report (see previous section) will facilitate this active oversight.

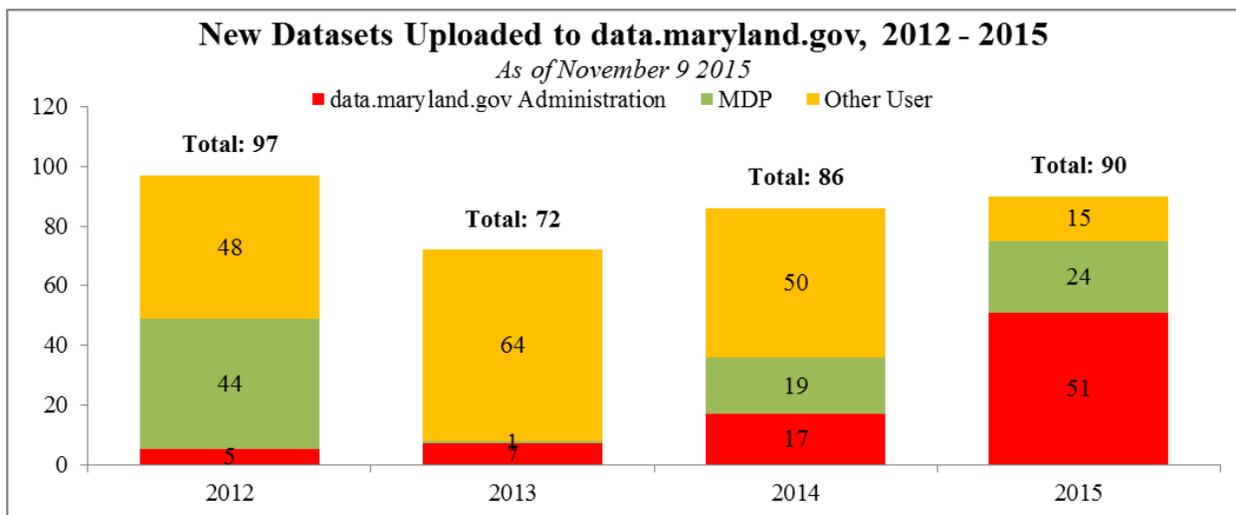
- Departments engaged in permitting and compliance, including but not limited to DLLR, DHMH, and MDE should make information available as open data.** The Council attempted to identify gaps in the state's open data publication. The US City Open Data Census, a crowd-sourced ranking of all city-level Open Data programs, measures the quality of datasets like crime, budget, GIS, property assessments, and restaurant inspections. While the program only covers cities and therefore does not include Maryland, the list is a good benchmark of what information is most important and valuable to both the public at large and the developer community. **The most obvious gaps in the state data publication are in the areas of permits and compliance. Despite numerous agencies engaged in permitting and compliance, there is no current information on permits or compliance actions on data.maryland.gov.**

The table below shows the Council on Open Data's subjective evaluation of Maryland's Open Data Program, measured using the US City Open Data Census's list of included datasets.

Maryland's Open Data Program versus US City Open Data Census Datasets	
Dataset (from US City Open Data Census List)	Current Status for Maryland
<ul style="list-style-type: none"> <li>Budget</li> </ul>	<b>In Progress.</b> FY16's Capital Budget Map is hosted on MD iMAP. DBM, DoIT, and ESRGC are uploading the full Operating budgets for FY14-F16.
<ul style="list-style-type: none"> <li>Crime</li> </ul>	<b>In Progress.</b> Annual crime data are on the Open Data Portal. GOCCP, DoIT, and ESRGC are creating an interactive crime dashboard. More data, and more real-time data, are needed from the Maryland State Police, e.g., arrest logs updated daily, deaths in police custody, crime logs.
<ul style="list-style-type: none"> <li>Zoning (GIS)</li> </ul>	 <a href="#">Link</a> . Generalized statewide zoning is compiled from county and local government sources. See <a href="#">MDP's mapping products</a> .
<ul style="list-style-type: none"> <li>Property Assessments</li> </ul>	 See DoIT's <a href="#">Open Data real property assessments</a> , as well as <a href="#">MDP's mapping products</a> and SDAT's <a href="#">Real Property Search</a>
<ul style="list-style-type: none"> <li>Restaurant Inspections</li> </ul>	<b>N/A.</b> Maryland counties conduct their own restaurant inspections. DHMH (the Department of Health and Mental Hygiene) does not have a centralized data source for restaurant inspections.
<ul style="list-style-type: none"> <li>Permits</li> </ul>	 The state has numerous permitting operations. None of them currently publish information on the state portals.

<b>Maryland's Open Data Program versus US City Open Data Census Datasets</b>	
<b>Dataset (from US City Open Data Census List)</b>	<b>Current Status for Maryland</b>
<ul style="list-style-type: none"> <li>• Transit</li> </ul>	 <a href="#">Link</a> Maryland's open data for transportation needs improvement. This link shows available resources on data.maryland.gov and data.imap.maryland.gov.
<ul style="list-style-type: none"> <li>• Property Deeds</li> </ul>	 <a href="#">Link</a> The Council recommends these data be added to the Open Data Portal. Currently they available through a separate site.
<ul style="list-style-type: none"> <li>• Parcels</li> </ul>	 <a href="#">Link</a>
<ul style="list-style-type: none"> <li>• Campaign Finance Contributions</li> </ul>	 <a href="#">Link</a> . This information is made publicly available by the State Ethics Commission. DoIT is working with the Ethics Commission to publish the full dataset as Open Data.
<ul style="list-style-type: none"> <li>• Business Listings</li> </ul>	<b>In Progress.</b> DoIT and the State Department of Assessments and Taxation (SDAT) are in the initial stages of publishing business listings as Open Data.
<ul style="list-style-type: none"> <li>• Spending</li> </ul>	 <a href="#">Link for FY2014 spending</a> . Data are available as far back as FY2008.
<ul style="list-style-type: none"> <li>• Procurement Contracts</li> </ul>	 <a href="#">Link</a> . This information is available through the eMaryland Marketplace. However, because the data are copyrighted, they do not constitute open data. The Council recommends that these data be published as open data.
<ul style="list-style-type: none"> <li>• Code Enforcement Violations</li> </ul>	 In the Council's view, code enforcement records, as well as listings of permits, is currently one of the biggest gaps in Maryland's Open Data available, especially when compared to other states. Code enforcement data are closely tied to permitting data.
<ul style="list-style-type: none"> <li>• Public Buildings</li> </ul>	<b>In Progress.</b> DoIT is in the progress of creating a map of state facility buildings statewide, on the behalf of the Maryland Emergency Management Agency (MEMA).
<ul style="list-style-type: none"> <li>• Lobbyist Activity</li> </ul>	 <a href="#">Link</a> . This information is made publicly available by the State Ethics Commission. DoIT is working with the Ethics Commission to publish the full dataset as Open Data.
<ul style="list-style-type: none"> <li>• Service Requests (311)</li> </ul>	<b>N/A.</b> 311 is a not a state function. Some aggregate statistics on customer service and call centers is currently reported to GOPI. However, these do not cover requests at the individual level, only summary statistics.
<ul style="list-style-type: none"> <li>• Web Analytics</li> </ul>	<b>In Progress</b> DoIT plans to publish these data to the Open Data Portal in early 2016.
<ul style="list-style-type: none"> <li>• Asset Disclosure</li> </ul>	<b>In Progress</b> The state's real property holdings have been published as part of larger data sets. Other state assets are not online.

- DoIT should develop and provide regular training sessions for agency staff on how to make data public.** As seen in the graph below, the vast majority of new datasets uploaded to the Open Data Portal this year were from the administrative team for the site itself within DoIT. Users outside of DoIT and MDP collectively uploaded 15 new datasets in 2015 – a sharp decrease compared to previous years. DoIT’s role is to make it easier and cheaper for agencies to publish Open Data. Doubtless the gubernatorial and agency leadership transitions played a role, but there have been other factors as well. While the total number of datasets uploaded increased in 2015, the decrease in non-DoIT participation shows the need for DoIT to provide additional training sessions for agencies on using Maryland’s two open data sites and working with open data. Establishing regular and formalized training schedules is a necessary prerequisite to increased oversight of agencies’ participation in open data (see previous section).
- DoIT should ask all agencies how DoIT can better assist existing State data processes by using open data. Examples could include: DoIT assisting agencies pulling data from legacy databases; DoIT automating agencies’ existing manual processes to publish data; DoIT helping agencies move from offline, static reports to interactive, online dashboards, etc. DoIT has previously posed these questions to agencies through the Council on Open Data, but DoIT should make a greater effort to engage additional State employees systematically and offer assistance.



- DoIT should inform research librarians in Maryland’s public libraries to train them on finding and working with Maryland’s Open Data websites.** The Council recognizes that Maryland’s libraries play an essential role in helping the public find, understand and utilize information. As data.maryland.gov and imap.maryland.gov are relatively new, librarians may

not be familiar with them. By educating librarians and academics the state can leverage their expertise to reach a broad public audience at low cost.

- **The Governor’s Office of Crime Control and Prevention (GOCCP) and DoIT should develop a dashboard to help citizens analyze crime data by county.** The dashboard will use an existing GOCCP dataset on the Open Data Portal, containing annual data going back to 1975 for every county of detailed crime statistics. This includes both violent and property crimes.
- **DBM and DoIT should publish Maryland’s Operating Budget as Open Data and develop an interactive dashboard to help citizens analyze budget data.**
  - DoIT, the Eastern Shore Regional GIS Cooperative (ESRGC), and DBM held a kickoff meeting on November 6<sup>th</sup>. DoIT has developed several prototype dashboards, one of which can be seen [here](#). At a minimum the dashboard will cover Proposed and Actual budgeted amounts for FY2014, FY2015, and FY2016. DBM has made the full operating budget data available to DoIT, but this information will not be published in a public data.maryland.gov dataset until the dashboard is complete. The data will include all appropriations down to the Object level of detail. This is the same level of detail historically published in the annual budget book.
- **DoIT should incorporate a statewide dataset inventory into Maryland’s Information Technology Management Plan.**
  - The State of Maryland takes asset management seriously. Every office chair and telephone is marked with a state identification number and an inventory is maintained as these items are acquired and disposed. However, the state has never attempted to inventory what is perhaps its most valuable asset: its data holdings. As envisioned, a statewide data inventory would include all data, both open and closed, based on the definitions above.
  - The Council on Open Data is focused on data itself, not systems. However, to sufficiently inventory the state’s data, an inventory of the systems in which the data resides might be necessary. There is a many-to-many relationship between data and systems. In other words, one system can contain many datasets and one dataset can be utilized by many systems.
  - If such an inventory were created, it would be instrumental in knowing what data state agencies collect and whether they consider that data to be “open” to the public or closed. Such an inventory would be key in identifying data that is “open” as defined by the law, but not yet published. Conversely, the inventory would also help identify closed data in need of greater security.

- Although having an inventory would be beneficial, conducting and maintaining the inventory would be a significant undertaking. The inventory would by necessity be a data call to agencies – even though submission of the data itself to the inventory would not be requested, collecting information or metadata about the state’s data would require significant agency time and effort. Instead of creating a separate process for agencies to inventory their datasets, the Council recommends that the Department of Information Technology (DoIT) add additional items to its existing Information Technology Management Plan. All agencies are already required to inventory their systems as part of the Management Plan. This recommendation would add a second level of detail to that process, requiring information about datasets (generally one level deeper than databases). DoIT also needs to carefully consider the burden such a data call would place on agencies to complete and on DoIT staff to administer.
  - The DoIT Geographic Information Office has created a draft [web application](#) to facilitate the call for inventory submissions. Some of these questions are absolutely necessary in any dataset inventory, but some are duplicitous with the existing IT Management Plan’s items.
  - DoIT also needs to consider whether the inventory itself meets the definition of “Open Data.” One on hand, making data about data (in other words, metadata) public seems to be a fundamental first step in making more of the state’s data public under the rules put forth by the Open Data Act. On the other hand, if too much of the inventory is made public, it might provide a road map for nefarious users looking for “closed” data (this could be mitigated by excluding “closed” data sources or by hiding systems details from the public-facing version of the inventory).
- **DoIT, with input from the Council, should report on the costs and benefits of a potential statewide PIA tracking database. If the Council determines that the benefits outweigh the costs, then an RFP should be issued.**
    - A statewide data inventory would be the natural first step to creating a statewide tracking system for Public Information Act (PIA) requests. It might also facilitate PIA requests by letting the public know exactly what pieces of information exist, thereby possibly increasing the volume of PIA requests. The converse is that if citizens seeking specific information see in the inventory that no such information is available, PIA requests for nonexistent data might not be submitted in the first place. On balance, governments which have implemented centralized PIA tracking systems usually see an overall decrease in overall volume of new PIA requests ([Montgomery County’s PIA tracking](#) is one example) – and a sharp decrease in repeat or redundant PIA requests.
    - At this time the Office of the Attorney General (OAG) sees agencies’ current PIA response procedures as effective, especially given agencies’ new requirement to assign central PIA contacts and make PIA contacts’ names and contact information public.

- The Council discussed creating a PIA tracking database and reaction was mixed. Reaction from state agencies was almost uniformly negative. The Maryland Department of the Environment in particular expressed concern that its PIA responses can be thousands of pages apiece. This could be addressed if only the request’s metadata, i.e., only the information about the request but not the response itself, were to be included in the PIA tracking database. The Council’s representatives’ primary objections are that such a tracking database would be unwieldy and costly.
  - Given the lack of support from OAG and the members of the Council on Open Data at this time, it is the Council’s recommendation that a statewide PIA tracking database be continued to discussed in 2016. The Council cannot in good faith recommend against creating a central PIA database, despite objections voiced by some representatives. Such a system would have clear advantages and efficiencies compared to the current system, where all agencies track their PIA responses separately and in disparate formats. The Council recommends that, contingent on the results of discussions in 2016 Council on Open Data meetings, a Request for Proposal for a PIA tracking database be issued if necessary no later than one year from now, i.e., at the end of 2016.
- **DoIT with input from the Council should evaluate open source alternatives to Maryland’s current open data portals.** Maryland pays ESRI for all ArcGIS Online services, including data.imap.maryland.gov. Maryland is also currently paying Socrata Inc. for its Open Data Portal product, which is the backend for data.maryland.gov. The Council recommends that Maryland continue purchasing the aforementioned products from ESRI and Socrata for the time being. However, additional vendors have begun offering new Open Data products since Maryland launched its sites. Even more promising, an open source alternative has become available: CKAN. While the Council believes that CKAN is not yet robust enough to replace Socrata’s or ESRI’s Open Data products, the Council recommends formal consideration of CKAN with possible migration in a two-to-three year horizon. Any plan must take into account the costs of transition -- not just the cost of the software or service itself – but also the time and hours required to retrain staff to use a new site, recreate services, etc.
  - **The Office of the Attorney General (OAG) and DoIT should leverage new provisions of the PIA to encourage agencies to identify additional datasets for publication as open data.**
    - The 2015 session of the General Assembly saw three new bills pass which affect the Public Information Act (PIA). Some of these are directly applicable to Maryland’s Open Data programs. The most relevant to open data is that, as of October 1, each state agency is required to identify and make public lists of datasets or information sources which frequently receive PIA requests and can be put online publicly, as a

means to preempt additional PIA requests. The Council recommends that these data sources be published to the Open Data Portal and to MD iMAP. The Office of the Attorney General and DoIT should help to monitor this process and ensure that as the data are made publicly available, they are made available as open data, not in siloed locations deep within individual state agencies' websites.

- **DoIT should make full address points and LIDAR data available to the public as open data.**
  - The MD iMAP system contains data on every address in the state. While this data is available for [geocoding](#) it is not downloadable or machine readable. DoIT has determined that it needs to reach agreements with the local governments that provide the address data to the state. Note: the address data is the location of physical structures only (usually buildings) and does not include any information on the occupants or use of those structures.
  - “[LiDAR](#), stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses combined with timing and locational data recorded by the laser system generate precise, three-dimensional information about the topography, vegetation and other features on the earth’s surface.” (*Source: What is LiDAR? NOAA, January 22, 2013*) The state in cooperation with Salisbury University holds a significant amount of LIDAR data, most of it created by local governments and the United States Geological Survey. Because of the volume of this information, it is difficult for users to download the data and work with it. DoIT and the University’s Eastern Shore Regional GIS Cooperative (ESRGC) are working to overcome these technical limitations.