THE OFFICE OF
ENTERPRISE**TECHNOLOGY**
STATE OF MINNESOTA

Legislative Report

Enhanced Public Access to Government Data

January 15, 2011

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PROVIDING THE LEADERSHIP AND SERVICES THAT IMPROVE GOVERNMENT THROUGH THE EFFECTIVE USE OF INFORMATION TECHNOLOGY

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Sec. 9. Minnesota Statutes 2008, section 16E.05 is amended by adding a subdivision to read:

Subd. 4. **Standards for transparency.** The chief information officer, in consultation with the Information Policy Analysis Division of the Department of Administration, shall develop standards to enhance public access to electronic data maintained by state government, consistent with the requirements of chapter 13. The standards must ensure that:
(1) the state information architecture facilitates public access to agency data;
(2) publicly available data is managed using an approved state metadata model; and
(3) all geospatial data conform to an approved state geocode model.

Sec. 16. GOVERNMENT EFFICIENCY AND TRANSPARENCY STUDIES.

Subd. 2. **Transparency standards.** By January 15, 2011, the chief information officer shall report to the chairs and ranking minority members of the legislative committees with jurisdiction over the Office of Enterprise Technology regarding the development of the standards to enhance public access to data required under Minnesota Statutes, section 16E.05, subdivision 4. The report must describe the process for development of the standards, including the opportunity provided for public comment, and specify the components of the standards that have been implemented, including a description of the level of public use of the new opportunities for data access under the standards.

Introduction

The purpose of this report is to describe Minnesota's progress in developing standards to enhance public access to electronic state government data, explain the metadata and geocoding model standards creation process, describe current and planned standards, and provide information on public access and involvement in standards-development as well as publicly available datasets. The report, prepared by the Office of Enterprise Technology, in consultation with the Information Policy Analysis Division (IPAD), is in response to Minnesota Laws 2010, Chapter 392, Article 1, Sections 8, 9, and 16 passed during the 2010 Legislative session.

Background

Making government data more transparent has many benefits, including the potential to maximize the return on investments in collecting and managing state data by transcending agency silos, encouraging data to be disseminated in reusable and interoperable formats, and facilitating enhanced search abilities. As was the case for the Human Genome project, releasing public datasets beyond the walls of government allows for expanded public access, facilitating creativity and ingenuity.

However, the potential value of repurposing government public data is only realizable if several underpinning factors are in place:

- Data management meets established standards so that is more easily searchable across government boundaries and can be more readily used.
- Access to public data is aggregated so that it can be found.

If government reports are not standardized, the underlying data is, for the most part, programmatically inaccessible – making it difficult and effort-intensive to do additional analysis on the provided information, much less look at cross-government trends and performance. More readily available government public data would support more timely, third-party analysis and have the potential to empower more proactive public-initiated dialog.

Transparency activity at the State of Minnesota executive branch over the past two years has focused primarily on the following:

1. Establishment of a process for developing relevant standards through the State's Enterprise Architecture Program in order to ensure that state agencies utilize common standards in the organization of information and the development of information systems.
2. Establishment and approval of specific state metadata standards that address the organization and identification of data so it is more readily accessible and useable.
3. Launch of the Minnesota Open Data website that congregates primary State of Minnesota public datasets for use by Minnesota citizens and businesses.

These activities are outlined in this report.

Creating Standards through the Enterprise Architecture Program

The State of Minnesota has established a comprehensive Enterprise Architecture program to harmonize and coordinate information and telecommunications technology systems and services. The purpose of the enterprise architecture program is to align the information technology (IT) investments and implementations with the enterprise's business strategies. The Office of Enterprise Technology accomplishes this by working with the agencies as a community.

The goal of the enterprise architecture governance process is to provide the leadership and direction that can create alignment within the IT community, close the gaps in standards development and compliance, and encourage cross-agency collaboration and integration.

The primary outputs of the architecture program are architectural "artifacts", which are the policies, standards, guidelines, and processes that communicate the State's information technology architecture direction and decisions. The artifacts are developed under the direction of a formal Architecture Review Board through four architecture domain groups (business; information/data; information systems/applications; and technology), using the governance process described below, before formal issuance by the State Chief Information Officer.

Standards related to data transparency are developed, vetted and approved through the processes established by the Enterprise Architecture Program.

Architectural artifacts

Architectural artifacts include policies, standards and guidelines.

- A policy is a senior leadership statement that indicates the direction or intent of an organizational propose for a given subject area.
- A standard is a general or specific directive constraining detail decisions. A standard describes what must be done. It is required (normative).
- A guideline is non-mandatory. A guideline may provide historical and background information, describe the intended use of the standard, or explain ways to meet the standard. A guideline amplifies a standard (informative).

The artifacts are created by first identifying and articulating the "need." Potential solutions are then researched, and proposed policies, standards and guidelines (the artifacts) are formulated and vetted by agency representatives. The artifacts are made available through the Office of Enterprise Technology's website for examination by agencies, vendors and the general public.

How the artifacts make a difference

Architectural artifacts are the specifications used by systems designers to improve the efficiency and standardization of state applications and information systems. Being established through the formal governance process and published under the statutory authority of the State CIO imparts meaning and substance to the artifacts. Standards are published on the OET website, and are referenced in procurement documents and included in state contracts. Standards are referenced by other IT governance processes, including IT budget review and project oversight.

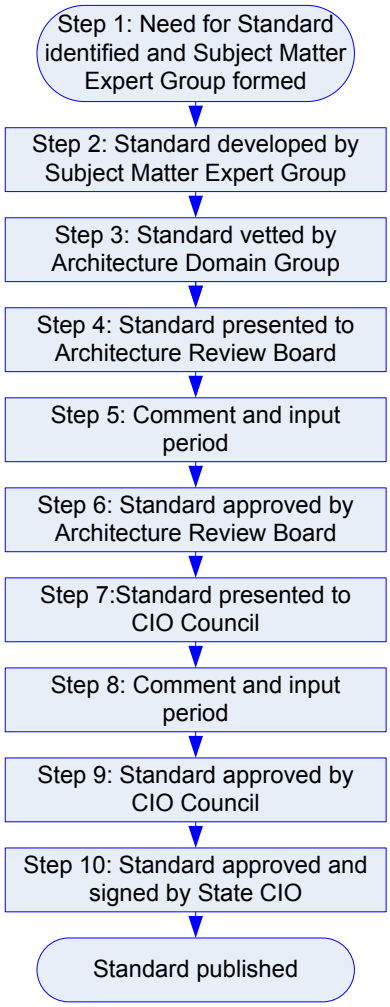
Formal process for decision making

The formal process for establishing policies standards and guidelines is kicked off with the formation of a subject matter expert (SME) group whose job it is to identify how a particular need for IT alignment may be met. For standards related to data transparency, the SME groups are made up of individuals with specialized knowledge of metadata and geospatial data.

The SME group drafts a proposed artifact which is reviewed and revised by one of the four architecture domain groups made up of agency representatives and OET enterprise architects.

The architecture domain team presents the proposed artifact to the Architecture Review Board for a period of review and comment. The artifact is then presented to the All-CIO Team for review and comment before issuance by the State CIO. This formal governance process is intended to ensure that parties affected by the artifacts will have an opportunity to influence the content.

(Figure 1: Architecture Standard Setting Process)



Public comment

An important aspect to the standards-creation process for transparency standards is the opportunity for public comments. After the standard has been created by subject matter experts and reviewed by their peers, the standard is posted publicly on the Office of Enterprise Technology website, giving interested parties an opportunity to submit specific comments. Please note that this aspect of the process is currently under development.

Metadata Standard

Metadata describes an information resource. Derived from the Greek term meta, meaning “among, with, or after change,” it indicates an abstraction of another concept, as in metalanguage. Metadata, then, is data about other data.

Metadata is used in order to make information more useful, including:

- Find-ability of relevant information and datasets
- Common elements for interoperability
- Fitness for use of the resource or dataset
- Compliance with retention, statutory, and regulatory requirements
- Compliance with accessibility requirements
- Compliance by vendors in implementing information systems

A metadata record consists of a set of elements (attributes or fields), that describe a resource. For example, a metadata system common in libraries - the library catalog - contains a set of metadata records with elements that describe a book or other library item: author, title, date, subject coverage, call number.

A metadata model (sometimes called a metamodel) is a data model for storing metadata. It can accommodate one or more metadata standards.

Dublin Core metadata standard (ISO Standard 15836; ANSI/NISO Standard Z38.95) is an international standard set of “core” metadata elements for describing a wide range of electronic resources. Comprised of 15 elements, it allows crosswalks from more complex metadata standards suitable for specific purposes, such as geospatial data. Basing metadata standards on Dublin Core standard allows interoperability among the more complex, community-specific metadata standards.

State of Minnesota Metadata Model

The State of Minnesota metadata model consists of four metadata standards that crosswalk to the Dublin Core metadata element set (see Appendix I for more detail). The four standards are:

Standard	Attributes	Approval Status
Web Content	Dublin Core Web Metadata Standard	Approved for the State of Minnesota
Recordkeeping	Minnesota Recordkeeping Metadata Standard - Dublin Core-based	Approved for the State of Minnesota
Geospatial	Minnesota Geographic Metadata Guidelines - based on the federal geographic metadata standard	Approved for the State of Minnesota
Datasets	Minnesota Dataset Metadata Standard - based on the federal dataset standard and following adaptation created by the National Association of State CIOs (NASCIO)	Approval is expected in 2011

Figure 2 below illustrates Minnesota's four enterprise standards and their relation to the Dublin Core metadata element set. Also identified is the relationship of the standards and Dublin Core to metadata standards that may be created at the community level and at the agency-specific level (an example of community-level metadata is an adaptation of Dublin Core for educational data and information; an example of agency-specific metadata is an adaptation of the Minnesota Dataset standard with elements that a single agency needs for their specific processes and data).

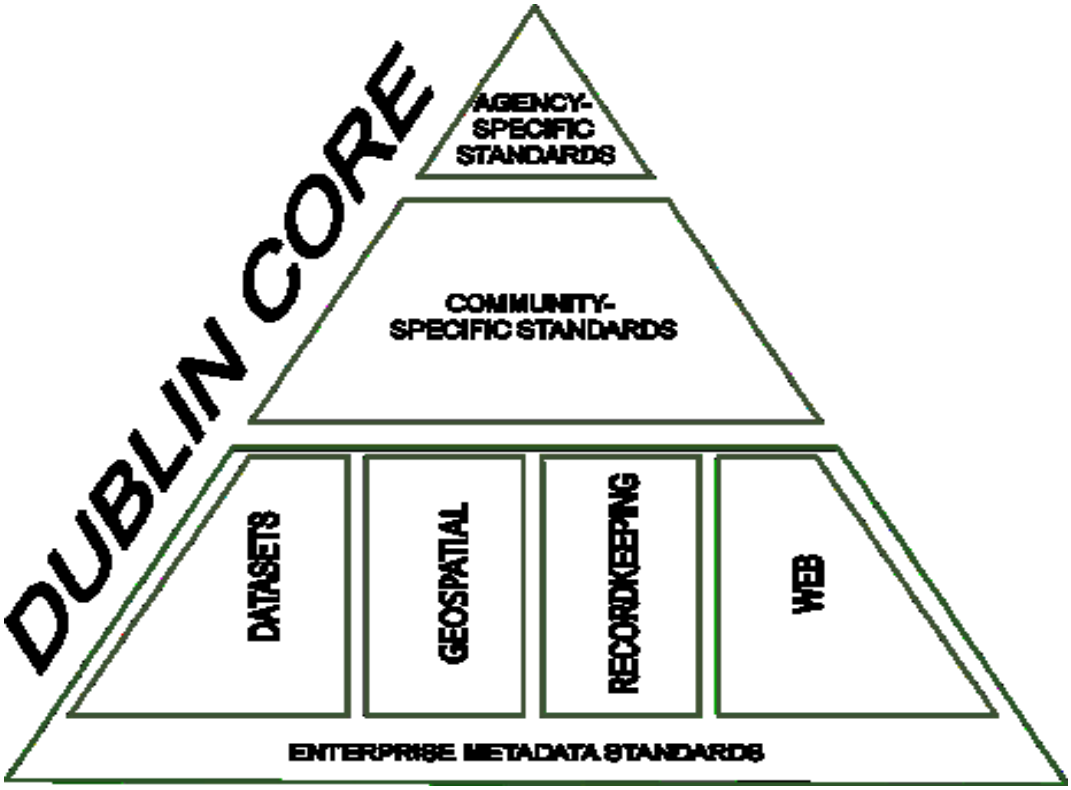


Figure 2: Minnesota Metadata Model in relation to the Dublin Core. See Appendix I for more detail

Enhancement to these standards would go through the Architecture Review Governance process above.

Use of the Metadata Model and Standards to Improve Search

Although it will be too difficult to require agencies to insert metadata to datasets that already exist, state government community websites will, going forward, use the standards for new datasets and, in some cases, datasets that can be modified. The metadata helps in web searches for public datasets.

Standards on Datafile Formats and Data Transparency

Standards exist within the State of Minnesota for specific file formats (CSV, XLS, ESRI, XML). However, it is the combined file format standard with accompanying metadata standards that makes the datasets findable.

Geocoding Standards

In 2010, the Minnesota Legislature directed that all state government geospatial data conform to an "approved state geocode model". In addition, a statewide geocoding function has been identified as one of several strategic investments for the Minnesota Geospatial Information Office (MnGeo) (Final Program Design Report, sections 4.9, 5.2.3, and 6.2). In response, the MnGeo Geocoding Workgroup was formed in May 2010 with the task to recommend a state geocode model, likely in the form of a service that would enable the translation of addresses or intersections into points on a map. The workgroup is building on the findings of the MetroGIS Geocoder Project and anticipates presenting its findings at the end of the 2011 fiscal year. One of the challenges faced by the workgroup is developing statewide support data sets that are required to develop this capacity, as illustrated in the graphic below.

For more information, see the workgroup's webpage: http://www.mngeo.state.mn.us/workgroup/geocoding/index.html

The Office of Enterprise Technology has met with the MnGeo's State Government Geospatial Advisory Council to discuss how best to collaborate regarding standards and website data. Virtually all geospatial data currently available on state agency clearinghouses conform to the Coordinate Interchange Standard for State Agencies.

Public Use: Public Access to Agency Electronic Data

Although data standards now exist and are required of agencies that manage public information, the absence of a portal to provide a comprehensive catalog of data resources means that secondary use of data is unnecessarily restricted to those who know how to find it. Data resources are therefore under-utilized or sometimes unavailable to the citizens and the marketplace, which cannot make effective re-use of this public data. As importantly, incomplete data resources – areas where agencies have not been proactive in providing digital information - are difficult to uncover and remedy.

The Office of Enterprise Technology, in collaboration with the Department of Administration's Policy Analysis Division (IPAD), determined that one way to facilitate access to agency public data is to launch a data portal website.

A state data portal begins to make state public data proactively available to it citizens. It also:

- Reduces ad-hoc and redundant request for public information
- Increases transparency
- Improves public image
- Improves data quality
- Encourages agencies to share data between agencies and among states
- Provides the potential to reduce redundant 'point to point' data feeds
- Spawns new opportunities for civic engagement
- Leads to consistent enterprise reporting data

National Transparency Efforts

The Federal Government has made open government one of its priorities and, as a first step, has developed a national portal to increase the ability of the public to easily find, download, and use federal datasets. Data.gov was launched on May 21, 2009, to serve as the single access point for publicly available authoritative federal data. As explained on the website: Data.gov

> *"Data.gov is leading the way in democratizing public sector data and driving innovation. The data is being surfaced from many locations making the Government data stores available to researchers to perform their own analysis. Developers are finding good uses for the datasets, providing interesting and useful applications that allow for new views and public analysis. This is a work in progress, but this movement is spreading to cities, states, and other countries. After just one year a community is born around open government data.*
> *"Just look at the numbers:*
>
> - *10 Other nations establishing open data*
> - *22 States now offering data sites*
> - *9 Cities in America with open data*
> - *236 New applications from Data.gov datasets*
> - *258 Data contacts in Federal Agencies*
> - *305,881 Datasets available on Data.gov"*

Minnesota Open Data: Portal to State Government Data

The Minnesota Open Data website (http://www.mn.gov/data/index.html) reflects the same principles at a state level, providing a gateway to the many public datasets within the executive branch. These rich sources of data and information offer to the general public an opportunity to download, "mash-up", and review relevant public information. By leveraging the metadata, geospatial, file format and taxonomy standards, the State increases the public's ability to locate public data across the 3,200 state websites with a feedback mechanism to improve and respond to the public, as well as metrics to monitor site traffic for relevance and usage.

Specifically, the websites goals are to:

- Collect and display public data already available but spread out or deep within state agencies
- Make public data available via links on a web page
- Leverage search engine to identify existing public datasets within the State of Minnesota
- Leverage existing geospatial data collection, publication and notification architecture (where appropriate)
- Use various datafile formats (i.e., XML, XLS, CSV)

The Minnesota Open Data website was recently launched with a limited number of public datasets and links to other government data sources. These initial entries were selected by the Office of Enterprise Technology based on relevant topics, ease of initial implementation, and available budgets. They include recommendations from agencies on public datasets and links that are already available but scattered throughout approximately 3,200 various state websites.

Dataset topics and web links were defined and displayed using the Federal Enterprise Architecture (FEA) Taxonomy, wherever possible. This standard ensures consistency in topics not just within the State of Minnesota but across other states.

The Minnesota Open Data website is intended to evolve over time with participation, and feedback both from state agencies and users of the website. Additional public datasets and tools will be added regularly as a result of agency submissions and to specific requests made by users of this site. Furthermore, the content, structure, and scope of the site will evolve over time and the catalogs will continue to grow as datasets are added and budgets are available.

Minnesota Open Data was developed and is hosted and supported by the Office of Enterprise Technology. Input was solicited and provided by various state agencies as to its content and style. For a view of the website's look and structure, see **Appendix II**.

Future Stages

Although the initial launch of a data portal highlights a limited portion of the rich variety of Minnesota public datasets presently available, we are actively working on a parallel effort to define a roadmap to match the ambitious goals laid out by the federal government. We will gauge our success and stage our efforts based on three guiding principles:

1. Transparency: enable greater accountability, efficiency, and economic opportunity by making government data and operations more open;
2. Participation: create early and effective opportunities to drive greater and more diverse expertise into government decision-making and
3. Collaboration: generate new ideas for solving problems by fostering cooperation across government departments, across levels of government, and with the public.

These three principles will help guide the creation of a three-phase roadmap for Minnesota's effort.

Phase 1, Transparency: Much of the valuable public data that exists within the executive branch is already available online. In this phase, our goal will be to follow a concept from the inventor of the World Wide Web: Sir Tim Berners-Lee. He recently made a recommendation to the UK's Prime Minister Gordon Brown to begin by exposing the "low-hanging fruit" of government information as ***Linked Data***. Linked data requires four immediate, attainable steps:

- Identify the data via URLs -- website addresses people can locate
- Make it available via HTTP so browsers can access it on the Web
- Provide metadata for useful context about the data, and
- Include links to other relevant URLs to improve discovery of related information

Leveraging existing enterprise tools such as the enterprise search engine which indexes and exposes over 1,000,000 searchable documents to the Minnesota Open Data portal today, we will create a data portal that aggregates the most relevant and valuable data currently available online and enhance it with useful context and other specific, related data.

Phase 2, Participation: Phase 2 will bring continuous improvement with a focus on bringing key data-bearing executive branch agencies into the initiative. Development of a metamodel will be an important step for providing context, traceability, ownership, and quality. Determining minimum mandatory information and establishing a short list of required metadata to provide needed context will be part of Phase 2.

We will create the MN.gov Data Council, a diverse group of agencies including those with the most relevant and frequently requested data, and those with technical expertise in data privacy and security, mash-ups, data linking and usability. The council will consider such questions as:

- What data is uniquely collected by that state agency
- What data availability would enhance the mission of the agency
- What data is in high demand
- Data evaluation based on known interest and usability factors
- Transforming data into a more automated, reusable format such as XML
- Notification services as new data becomes available
- Implementing a "suggestion box" as a means for identifying candidate data

It is important that as Minnesota Open Data grows, it does not disrupt the stewards of agencies' respective data. A stand-alone Minnesota Open Data system must be established and overseen by the Minnesota Open Data Council to be the primary delivery channel of aggregate data to the public domain and extract the data, using export or conversion utilities. Leveraging and applying the iteratively refined metamodel, the data will be migrated and transformed for easy access and interoperability with readily available and open standards-based tools.

Phase 3, Collaboration: With the goal of connecting relating data entities to each other holistically, we will need structured collaboration with members of the public domain, other states and, of course, the federal government's Data.gov initiative. Building on the evolving work in phase 2, the use of a common metamodel across all states will provide the greatest utility for finding comparative data. This will need to be driven by the federal government to ensure alignment and common standards are followed.

To accomplish this goal, the initiative must drive the harvested data sets, linked together by the federally defined criteria, to culminate in a full featured catalog. Leveraging Linked Data tools Data.gov has already endorsed, such as those provided by Triplify.org and RDFa.info, will increase structure not only to the data sets themselves but also to the metadata that is used to describe useful information about each dataset. Rather than the unmanaged, unsearchable practice today of scanned PDF image documents posted to the Web, new standards will emerge for states and their agency data stewards that ensure all relevant attributes of data and the information about that data are interoperable, accessible and meet usability demands.

A structured feedback loop with all data consumers will ensure Minnesota Open Data mining and presentation priorities are in alignment with identified needs of the requestors. The public domain will be openly invited to actively and regularly participate in shaping the future of Minnesota Open Data. Creative suggestions to include pertinent local government data, identifying ideas for mash-ups and other enhancements, or adding continually evolving functionality available elsewhere on the Web, the citizenry will ensure success in delivery of seamless access and valuable use of Minnesota Open Data. With a truly collaborative approach, Minnesota Open Data will continue to grow and change in the weeks, months, and years ahead.

Providing Support

Some web browser configurations - particularly those that are designed for high security computing environments - can interfere with access to certain datasets. This is most commonly related to government websites that use security certificates, and end user browsers that are not configured to recognize those certificates as being authoritative. If users are having difficulty downloading one or more datasets from the Minnesota Open Data website, instructions are provided on the site to contact their local IT support staff to determine whether browser configuration issues can be addressed.

Compliance with Section 508 of the Rehabilitation Act and Web Accessibility Guidelines

Minnesota Open Data shows its commitment to accessibility by ensuring that all functionality and all content are accessible to all website users. The Minnesota Open Data site is routinely tested for compliance with Section 508 of the

Rehabilitation Act using a technical standards check-list, in-depth testing with screen readers, policy experts, and person with disabilities. For more information on Section 508 technical standards, please visit www.Section508.gov.

In addition, Minnesota Open Data is routinely reviewed for alignment with the latest Web Accessibility Initiative Guidelines for W3C. The Web Accessibility Initiative Guidelines (available at http://www.W3.org/WAI/) define how browsers, media players, and other "user agents" support people with disabilities and work assistive technologies.

Search Capabilities

Minnesota Open Data includes searchable keywords that provide access to "raw" datasets and various links. In the "raw" data, users may access data in XML, Text/CSV, KML/KMZ, Feeds, XLS, or ESRI Shapefile formats. In some cases a search may take user to links that may have multiple datasets. Search results will also provide users with an option to view metadata on that specific dataset. Having both keywords and metadata tied to electronic datasets will improve the users' ability to locate specific public datasets by topic and metadata.

Although the website's primary purpose is to connect many state websites with public data and public datasets, there are some instances within state data links where public data is collected and published by a third party. Users will get a "warning" letting them know they are leaving an official state website.

Federal Public Datasets

The initial launch of the website will not have federal public data as a category. However, within some state agencies' public datasets there may be data provided to or from the federal government, and Minnesota Open Data will have a link to the federal government's data transparency website Data.gov. The next release of Minnesota Open Data will have a section with federal data links.

Metrics – WebTrends Data

Metrics will be captured to track and monitor traffic to the website. This will enable the State to see if the site is providing value and better access to public datasets. Metrics will also help provide statistics regarding what public datasets are searched frequently.

Agency, Community and User Feedback

An important aspect of making data available is to make available a feedback loop for continuous improvement. The website has embedded throughout the site places for users to provide feedback, suggestions and recommendations on existing public datasets as well as what they would like to see from a topic and dataset perspective. This feedback will be used to improve overall site usability, to increase the number of links to available public datasets, and/or to recommend to agencies possible new and/or combined datasets that could be developed.

Conclusion

The increased public desire for government transparency requires the State of Minnesota to creatively address means to break down the “silos” of public information. Through the establishment of data standards, and the development of a state portal, public datasets that were previously embedded within the agencies and their websites can be more easily accessible and shared, reducing the cost of daily scavenger hunts for data by government officials and citizens alike. Leveraging standards encourages open government by increasing efficiency, and cross-agency-state-federal collaboration.

Minnesota is not alone. Almost half of the states are already participating in open government initiatives and another third have the “state.gov/data” domain names already reserved, meaning they’re on their way.

Outstanding Issues and Recommendation and Next Steps

As the appetite for public data and increased transparencies grow, the State will need to address a variety of ongoing challenges:

Generating data: It is not clear how the State will be able to handle requests for the generation of new datasets. Minnesota will need a more robust infrastructure and ongoing funding to support the needs and requests from the general public. Roles and responsibilities will need to be clarified and the extent to which the state agencies can or should develop and/or cross-reference new public datasets upon request will be determined primarily by the available funding.

Website maintenance: OET will continue to improve the website through the participation of state agencies and will leverage public dataset submission and review infrastructure similar to what was implemented at the federal level but on a smaller scale. However, the pace of website growth and improvement will be determined by available resources. There is no current funding for the content management and maintenance of Minnesota Open Data.

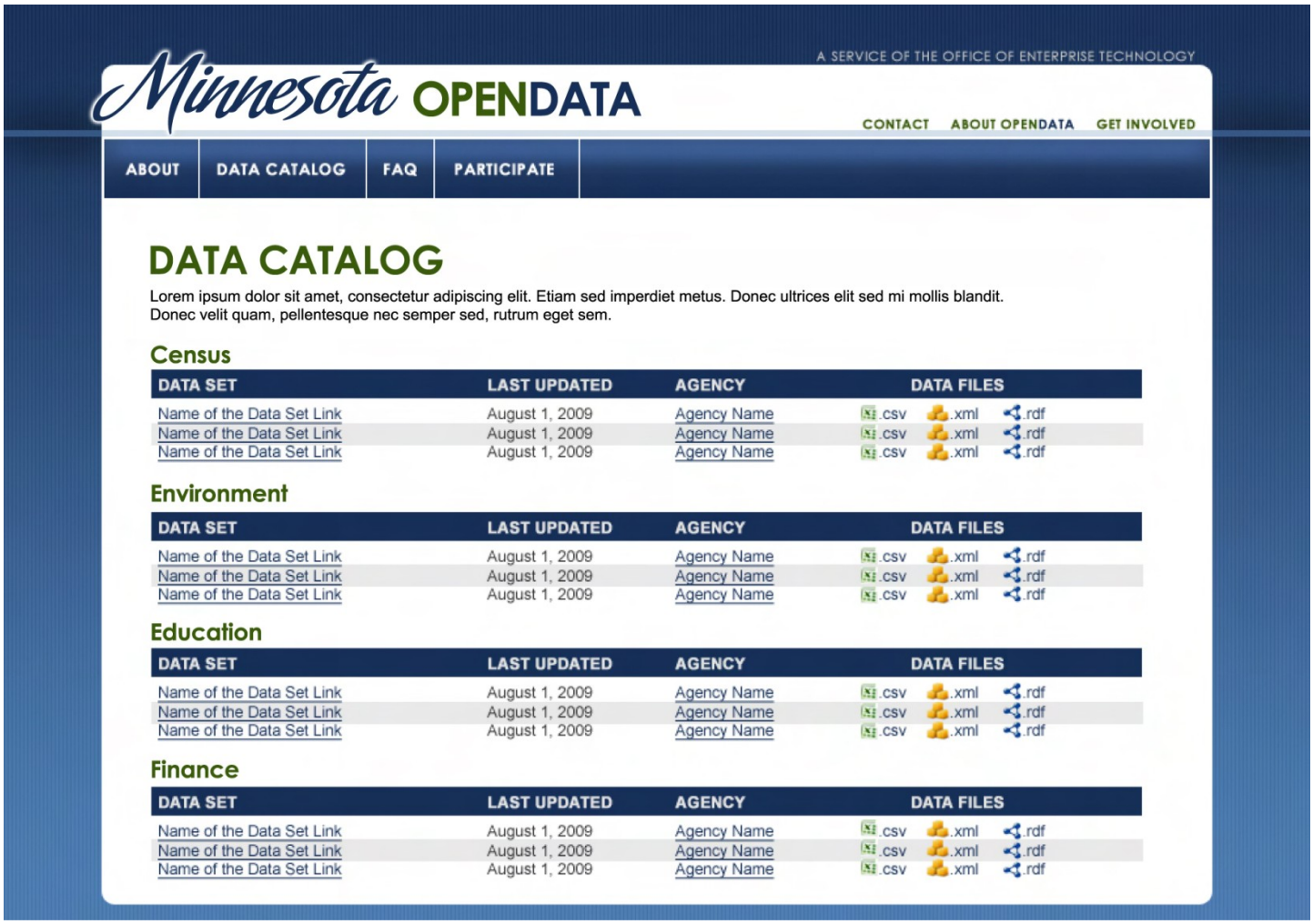
Additional standards: Although some standards are solidified and should make the implementation of a new public dataset somewhat easier, there are no resources allocated to their further development. (See data.gov Concept of Operations document that outlines implementation approach).

Appendix 1: Metadata Element Mappings

The following table maps elements from the Dublin Core Metadata Element Set (DCMES) to the Minnesota Recordkeeping Metadata Standard (RKMS), the Minnesota Geographic Metadata Guidelines (MGMG), and the existing NASCIO dataset. Note: the more specialized elements contained in the RKMS, MGMG, and in NASCIO standards do not map to the higher level Dublin Core Metadata Element Set, and are therefore not listed here.

State of Minnesota Standards Mapped to National and International Standards			
DCMES	**Maps to RKMS**	**Maps to MGMG**	**Maps to NASCIO**
Creator, Publisher, Contributor	1. Agent	Originator, Contact Person, Contact Organization, Contact Person Position, Contact Address, Contact City, Contact State or Province, Contact Postal Code, Contact Voice Phone, Contact Fax Phone, Contact E-mail Address, Publisher, Distributor, Distributor Contact Person, Distributor Organization, Distributor Position, Distributor Address, Distributor City, Distributor State or Province, Distributor Postal Code, Distributor Voice Phone, Distributor Fax Phone, Distributor E-mail Address	5. Owner 6. Originator 7. Point of Contact 16. Agency Program URL D1. Access Point
Rights	2. Rights Management	Access Constraints, Use Constraints, Distribution Liability	
Title	3. Title	Title	2. Title 3. Dataset Group Name 25. Metadata Standard Name?
Subject	4. Subject	Place Keywords, Theme Keywords	10. Subject Area 13. Keywords
Description	5. Description	Abstract, Purpose	4. Description 12. Specialized Data Category Designation 22.2 Geographic Granularity?
Source, Relation	7. Relation	Associated Data Sets, Lineage	11. Associated Data Sets 17. Agency Data Series URL
Coverage	8. Coverage	Time Period of Content Data, Currentness Reference, Spatial Extent of Data	20. Period of Coverage 21. Unit of Analysis? 22. Spatial Extent of Data
Date	10. Date	Publication Date	14. Publication Date 15. Date Updated
Types	11. Type	-	
Format	13. Format	Native Data Set Environment, Transfer Format Name, Transfer Format Version Number	D2. Media Format D3. File Size D4. File Format
Record Identifier	14. Record Identifier	Minnesota Clearinghouse ID	1. Unique ID

Appendix II – Minnesota Open Data Website


A SERVICE OF THE OFFICE OF ENTERPRISE TECHNOLOGY
Minnesota OPENDATA
CONTACT
ABOUT OPENDATA
GET INVOLVED
ABOUT
DATA CATALOG
FAQ
PARTICIPATE
DATA CATALOG
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam sed imperdiet metus. Donec ultrices elit sed mi mollis blandit. Donec velit quam, pellentesque nec semper sed, rutrum eget sem.
Census
DATA SET
LAST UPDATED
AGENCY
DATA FILES
Name of the Data Set Link
August 1, 2009
Agency Name
.csv
.xml
.rdf
Environment
Education
Finance