



VT GIS Action Plan

VT Enterprise GIS Consortium

2016

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Prepared For: Justin Johnson, VT Secretary of Administration

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Document History

Version	Date	Author(s)	Revision Notes
DRAFT 1	2/8/2016	Steve Sharp, VCGI	1 st draft presented to EGC
DRAFT 2	2/15/2016	EGC Subcommittee	Final draft for EGC review/approval
FINAL	2/17/2016	EGC	Final approved via EGC e-vote

Glossary of Terms

Dataset	A dataset (or data set) is a collection of data.
EGC	State of Vermont's Enterprise GIS Consortium
GIS	Geographic information System
Geospatial data	Geospatial data, also known as spatial data, is information about a physical object that can be represented by numerical values in a geographic coordinate system.
GPS	Global Positioning System
RPC	Regional Planning Commission
VCGI	VT Center for Geographic Information
Web service	A Web service is a service offered by an electronic device to another electronic device, communicating with each other via the World wide web.

Executive Summary

The General Assembly authorized the creation of Vermont’s Geographic Information System (VGIS) in 1988 through the state's Growth Management Act, and has provided policy direction in actions taken since then. Act 204 of 1994 created the VT Center for Geographic Information (VCGI) as a public, not-for-profit corporation charged by statute (10 VSA 122) with developing and implementing a comprehensive strategy for the development and use of Vermont’s Geographic Information System (VGIS). In 2014 the General Assembly moved (H.885 Sec. E. 800.1 10 V.S.A. § 122) VCGI into a new Division within the Agency of Commerce and Community Development (ACCD). In response to VCGI’s move into state government, the Secretary of Administration (Justin Johnson) requested that ACCD (VCGI’s parent organization) complete an analysis of “all facets of GIS in state government, with the involvement of the statewide GIS community”, and provide recommendations on how to structure GIS in state government for the future.

In response to this request, ACCD asked the Environmental Systems Research Institute (Esri) to facilitate a three-day workshop (September 2015) to collect information and insight from key stakeholders inside and outside of State government. Esri used this insight to craft a report providing recommendations on how the State could optimize the deployment and use of geospatial technology.

The State’s Enterprise GIS Consortium¹ (EGC) was asked by ACCD to review and respond to Esri’s report. As a result, the EGC established a subcommittee for this task, which after several weeks of discussion and debate, generated this Action Plan. EGC representatives subsequently reviewed and endorsed this final draft.

The Action Plan includes:

- A clear vision statement and specific goals designed to help guide the future use and deployment of geospatial technology in State government.
- Identified GIS needs and opportunities within State government.
- Recommended actions designed to help the State move toward implementation of the vision and goals outlined in this Action Plan.

¹ The EGC is a voluntary consortium of state government organizations focused on effective management of State’s Enterprise Geographic Information System (GIS). The EGC was chartered by the State of Vermont’s CIO in August 2008.

Methodology

The State's Enterprise GIS Consortium (EGC) crafted this Action Plan by leveraging insight from the following resources

- **Esri's "Vermont Location Strategy" report** (December 2015): This report identified "common GIS needs" across State government (based on interviews with State agencies), and included a detailed set of recommendations and actions to address those needs.
- **Vermont's Enterprise GIS Strategic Plan** (draft revisions 2005): The EGC initiated an effort to revise Vermont's Enterprise GIS Strategic Plan², and in the process goals and strategies which have been integrated into this Action Plan.

On January 6th, 2016, the EGC established a subcommittee to review Esri's report and craft an Action Plan. The subcommittee began deliberations on January 13th meeting weekly until it had crafted an Action Plan that it could present to the EGC's Representatives³ for review and approval.

² https://outside.vermont.gov/sites/egcgeo/Documents/EnterpriseGIS_SP_v2008A.pdf

³ Refer to Attachment – EGC Member Directory

Vision & Goals

Vision Statement: Vermont's continuing investment in geospatial information and technology will support robust public services, promote safe and healthy communities, sustain our natural heritage, enable intelligent planning and decision making, and drive a thriving economy.

Goals

- Provide common and authoritative datasets and services to be shared across agencies, business systems, and all stakeholders inside and outside of state government.
- Promote quality and consistency through best practices and standards.
- Support effective cross-departmental information sharing and collaboration.
- Promote transparency in government and an engaged constituency through improved and enhanced citizen services.
- Improve decision making inside and outside of state government.
- Implement an agile and standards-based approach for the configuration and provisioning of software applications and information products.
- Establish and maintain a robust State GIS governance structure.
- Empower an efficient and effective workforce by improving and enhancing departmental workflows.

Common GIS Needs & Recommended Actions

The EGC used Esri's report as a starting point to help identify common GIS needs among agencies and stakeholders. The numbers are for reference only.

Need #1: Governance of Vermont's Geographic Information System⁴

EGC Recommendation #1: With the dissolution of VCGI's Board of Directors, the State of Vermont needs a comprehensive GIS governance structure with clearly defined roles, responsibilities, and authority.

EGC Action Items #1:

1. Through Executive support, establish Vermont's Enterprise GIS Consortium as the State's GIS steering committee and governing body with the authority and responsibility to establish and maintain State GIS policies, standards, and guidelines and to steer and advise VCGI.
2. Broaden EGC membership to include representation from a range of stakeholders.

Need #2: VCGI's Roles, Responsibilities, and Resources⁵

EGC Recommendation #2: Act 179, passed in the spring 2014 legislative session, led to VCGI becoming a new Division within the Agency of Commerce and Community Development (ACCD). The Center successfully completed its transition into ACCD thanks to the tremendous support provided by ACCD's team. Now the State needs to review and possibly modify the Center's roles and responsibilities⁶. The State also needs to determine if VCGI is adequately resourced to fulfill its obligations.

EGC Action Items #2:

1. Evaluate VCGI's current roles, responsibilities, and authority defined under its enabling legislation. Contrast this to the needs of the VT GIS Community. Recommend modifications, as needed, that would help align VCGI's roles, responsibilities, and authority with the needs of the VT GIS Community.
2. Evaluate VCGI's current resource levels (staff and equipment) in light of its responsibilities, and identify any recommended changes.
3. Document findings and provide recommended changes to Agency of Administration for implementation.

⁴ Esri did not include a specific recommendation regarding an overarching GIS governance structure within State government, however, they did recommend data governance which is one component of a larger governance structure.

⁵ This need was inspired by "Activity #1 - Staff and equip the GIS Program Office with the appropriate authority, resources, and funding".

⁶ <http://legislature.vermont.gov/statutes/section/10/008/00123>

Need #3: Authoritative Data & Web Services⁷

EGC Recommendation #3: Establish a geospatial data governance structure to steer the creation, management, and dissemination of “authoritative” datasets and web services. Create and maintain a central geospatial data portal where State employees and the public can find “authoritative” datasets and web services which they are authorized to access. This will facilitate sharing and collaboration, reduce redundancy and duplication of effort while fostering better decision making through the use of common “authoritative” datasets and web services.

EGC Action Items #3:

1. Establish the EGC as the State’s geospatial data governance body responsible for establishing policies and standards regarding the creation, management, and dissemination of “authoritative datasets” and “authoritative web services”. Dovetail this with DII’s efforts to foster and support better data governance throughout State government.
2. Define the terms “authoritative dataset” and “authoritative web service”.
3. Develop policies and standards which guide the creation, management, and dissemination of “authoritative datasets” and “authoritative web services”.
4. Craft a "VT Geospatial Data Management Plan" that identifies authoritative datasets and web services and the "stewards" of those datasets/services.
5. Establish a mechanism for tagging authoritative datasets and web services within VT’s Open Geodata Portal to promote discovery and use.

Need #4: Geospatial Data Governance⁸

EGC Recommendation #4: The EGC believes that the State of Vermont needs to create a data governance structure designed to support the creation, management, and dissemination of “authoritative datasets”. Currently there are cases, such as town boundaries, where there are multiple agencies maintaining duplicate and inconsistent data due to the lack of proper data governance and oversight.

EGC Action Items #4:

1. Refer to the recommendations under EGC Action Items #3.

⁷ Derived from “Common Need #1” in Esri’s report. Modified to reflect the EGC’s viewpoint.

⁸ Derived from “Common Need #6” in Esri’s report. Modified to reflect the EGC’s viewpoint.

Need #5: Open Access to Geospatial Data⁹

EGC Recommendation #5: The EGC believes that the State’s geospatial datasets and services should be openly available¹⁰ via a central VT Open Geodata Portal. The EGC has recognized this need by working with VCGI to initiate the development of a VT Open Geodata Portal. The Portal should be interoperable with the State’s existing Open Data Portal. The EGC believes that agencies should be allowed to create their own Open Geodata Portals, however, they must be required to follow standards and must “federate” with the State’s central VT Open Geodata Portal.

EGC Action Items #5:

1. VCGI, with support from the EGC, will establish and implement VT Open Geodata Portal policies, standards, and how-to documents.
2. VCGI will build a “federated” VT Open Geodata Portal using Esri’s ArcGIS Online Open Data Platform, and populate it with datasets and web services.

Need #6: Enhancing Data & Information Sharing¹¹

EGC Recommendation #6: The EGC believes that the ArcGIS platform can help facilitate information sharing as suggested by Esri in their report. However, it is important to recognize that there are other software solutions available to support information sharing. Software isn't the only barrier to sharing; institutional “culture” is often the greatest barrier within State government. This is a long-term challenge that requires long-term institutional support to establish and maintain a culture where information sharing is expected and demanded.

EGC Action Items #6:

1. Develop and promote common GIS software standards within State government in order to simplify data and information sharing.
2. Develop guidelines for information and data sharing between agencies and departments within State government.
3. Implement Recommendations and Action Items outlined under Need #3, #4, and #5.

Need #7: Self-Service Mapping¹²

EGC Recommendation #7: Self-service mapping can be defined as desktop, web, and mobile mapping solutions that non-GIS professionals can use to make their own maps. The EGC believes that self-service mapping should be supported by improved identification and pairing of needs with

⁹ Derived from “Common Need #4” and “Activity #4” in Esri’s report. Modified to reflect the EGC’s viewpoint.

¹⁰ Unless there are specific security or confidentiality limitations that constrain data sharing.

¹¹ Derived from “Common Need #2” and “Activity #3” in Esri’s report. Modified to reflect the EGC’s viewpoint.

¹² Derived from “Common Need #3” in Esri’s report. Modified to reflect the EGC’s viewpoint.

existing resources (eg: agency ArcGIS Online accounts, Geocortex apps, web services, geoprocessing services, etc), as well as the development of new resources and training for users to be successful.

EGC Action Items #7:

1. Develop an overarching self-service mapping strategy for the State, pairing identified needs with existing and/or new self-service mapping solutions.
2. Develop and implement an outreach and training plan that increases awareness and use of existing self-service mapping solutions.
3. Evaluate the pros-and-cons of requiring the use of designated “authoritative datasets” within self-service mapping solutions hosted by State government.
4. Develop and provide Vermont branded templates.
5. Promote existing geospatial applications and services.

Need #8: Develop a strong GIS Workforce¹³

EGC Recommendation #8: The State will be unable to leverage the full benefits of GIS without a strong GIS workforce. The EGC generally agrees with Esri’s recommendation, that the State’s GIS professionals and users need to “stay current on the latest GIS methods, trends, and capabilities”. The EGC believes that a coordinated GIS workforce development plan would benefit the state by improving efficiency, access, and identify areas where additional training resources need to be offered. However, the EGC also believes that agencies and departments should retain the freedom to develop their own individual plans, while identifying training elements which they can coordinate with other agencies via the EGC.

EGC Action Items #8:

1. VCGI, with guidance from the EGC, will develop and implement a coordinated State GIS Workforce Development Plan.

Need #9: Use of Geo-enabled Mobile Technology¹⁴

EGC Recommendation #9: The EGC believes that geo-enabled mobile technology is a critical capability which the state should leverage to support workflows in the field. Specifics on how mobile technology is implemented should be addressed at the agency and departmental level. However, agencies need to be supported with the software, hardware, training, and infrastructure (eg: licensing, web services, offline caches, etc.) needed for success.

EGC Action Items #9:

1. Develop and promote guidelines for the use of geo-enabled mobile applications.
2. Evaluate the pros and cons of requiring and/or promoting the use of Esri’s Collector for ArcGIS Online solution for geo-enabled mobile applications.

¹³ Derived from “Common Need #8” in Esri’s report. Modified to reflect the EGC’s viewpoint.

¹⁴ Derived from “Common Need #5” in Esri’s report. Modified to reflect the EGC’s viewpoint.

Need #10: Esri Software Licensing¹⁵

EGC Recommendation #10: Esri has recommended that the State of Vermont negotiate an Enterprise License Agreement (ELA) with Esri. In their report, Esri noted that “an enterprise license agreement is a more cost-effective and efficient way to provide state agencies access to the ArcGIS platform”. It is reasonable to expect that an ELA would provide for greater and more standardized access to Esri’s suite of ArcGIS products. This would have the potential of helping those agencies and departments which currently lack sufficient access to Esri’s ArcGIS technology. However, based on conversations to-date with Esri, the EGC believes there is little evidence that an ELA would save the State money. An ELA would also likely require that a central licensing authority be established within State government to manage the licenses, which could introduce administrative challenges.

EGC Action Items #10:

1. VCGI, with guidance of the EGC, will work with Esri to estimate what it would cost the State of Vermont to have an Esri ELA.
2. VCGI, with guidance from the EGC, will work with Esri to determine what kind of oversight and agency “chargeback” model would be required to successfully implement and maintain an Esri ELA.
3. The EGC should make a final determination and recommendation to AOA and DII regarding an Esri ELA.

¹⁵ Derived from “Common Need #7” in Esri’s report. Modified to reflect the EGC’s viewpoint.
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Attachment A – EGC Member Directory

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