

Oregon Geospatial Standards Development Guidelines

Draft
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Please address comments to:
Milton Hill
Framework Coordinator
Geospatial Enterprise Office
milton.e.hill@state.or.us

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Purpose

The intent of this document is to revise, refresh, and consolidate the group of documents that guide geospatial standards development and maintenance in Oregon. These original documents include:

- “Oregon Geospatial Compatibility Guidelines” October, 2002
- “Oregon Standards Development Effort” date not known
- “Procedures for Amending GIS Standards” January, 2007

History

In the fall of 2000 a group of Oregon GIS practitioners met and discussed the future of GIS in Oregon. Outcomes from this event included a vision statement and objectives as well as the initial design for an inclusive data standards development process. By October 2002 these outcomes had been documented in “Oregon Geodata Compatibility Guidelines” (see Appendix A) and endorsed by the Oregon Geographic Information Council (OGIC). OGIC began formal development of geospatial standards with their announcement of the first GIS Standards Forum conducted December 4th, 2002. At this event draft standards for Elevation, Imagery and Metadata were presented and group consensus reached to forward two of the three to the OGIC. The Imagery and Metadata Standards were endorsed by OGIC at December 18th, 2002 meeting and became the first statewide geospatial standards in Oregon. Although these two standards essentially reflected their Federal counterparts their development still marked two important milestones; the Oregon GIS community, acting through OGIC and the GIS Standards Forum, had reached consensus on their adoption, and a flow chart for the development process was developed, endorsed, and utilized.

In the years since that first Forum, OGIC has endorsed more than 20 new standards as well as numerous revisions. During this time the development process has remained largely unchanged with the exception of minor edits and the addition of a procedure to amend existing standards, which was developed in 2007. The process has enabled consistent and community inclusive collaborative action for more than nine years – a success by any measure.

Direction

At their December 2010 meeting OGIC directed the Geospatial Enterprise Office (GEO) to conduct a review of the standards development process acknowledging it’s robust and results oriented function but also recognizing that the documentation was outdated and that there may be room for process improvement. Items to be addressed included:

- Intent is to mandate standards for State agencies and strongly encourage for others
- State CIO (OGIC Chair) has legislative authority to set standards
- Should CIOC be part of the endorsement process?
- Should some other State entity be included?
- What is the appropriate role for local/tribal/regional government?

Subsequently, GEO convened two meetings in early 2011. While the broad intent of these meetings was geospatial governance review considerable attention was focused on the standards development process. See Appendix B for complete meeting notes. Key findings from these meetings include:

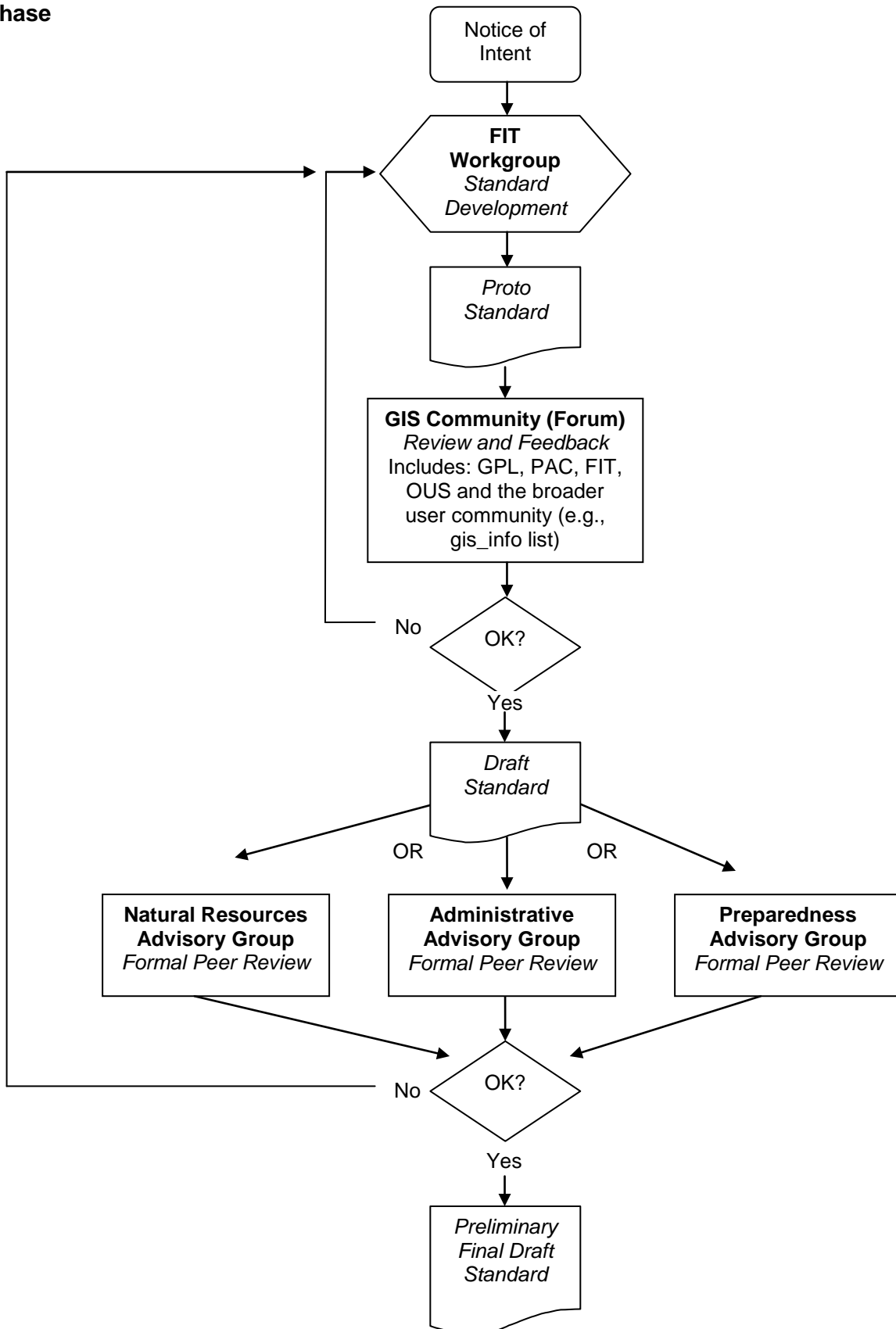
- The need to develop guidance on the scope and applicability of State CIO mandated standards prior to implementing them
- The need to review and potentially revise OWEB’s involvement in the standards development process with the goal of honoring OWEB’s statutory mandated role in coordinating natural resource geographic information as specified in is ORS 541.365 while managing workload
- Revision of the standards process to include peer review
- Update and combine the existing “Oregon Standards Development Effort” and Procedures for Amending GIS Standards in Oregon” documents.

As a result of the OGIC call for action and the governance review the following revised standards development process was developed. At this time the process is consider draft with review and editing encouraged. Once community review has occurred and input considered the process will be presented to OGIC for consideration.

New Process

FIT Standard Development Process, 2012

Drafting Phase



natural Resources Advisory Group – FIT Themes

| <i>FIT Themes</i> | <i>Representative Agencies</i> | <i>Contacts</i> |
|--|---|--|
| Bioscience Elevation Geoscience Hydrography | Oregon State University University of Oregon Oregon Water Resources Department Oregon Watershed Enhancement Board Oregon State Parks Department Oregon Department of Forestry Department of Geology and Mineral Industries Oregon Department of Environmental Quality Department of State Lands Oregon Department of Fish and Wildlife United States Geological Survey Oregon Department of Agriculture Local and Regional Governments Oregon Tribes | Jimmy Kagan Bob Harmon Ashley Seim Brady Callahan Emmor Nile Rudy Watzig Ian Madin Malavika Bishop Randy Sounhein Jon Bowers Sheri Schneider Ian Madin Brandt Melick Diana Walker |

Administrative/Cadastral/Transportation Advisory Group – FIT Themes

| <i>FIT Themes</i> | <i>Representatives Agencies</i> | <i>Contacts</i> |
|---|--|---|
| Administrative Boundaries Cadastral Geodetic Control Reference Transportation Land Use/Land Cover | Oregon Department of Agriculture Oregon Department of Forestry Oregon Department of Transportation Oregon Department of Revenue Oregon Geospatial Enterprise Office Oregon State University University of Oregon Department of Land Conservation Bureau of Land Management United States Geological Survey Port of Portland Department of Human Services Local and Regional Governments Oregon Tribes | Diana Walker Emmor Nile Chad Brady Ken Bays Phil McClellan Bill Clingman Dean Anderson Jimmy Kagan Randy Dana Corey Plank Jimmy Kagan Eric Brandt Sheri Schneider Sim Ogle |

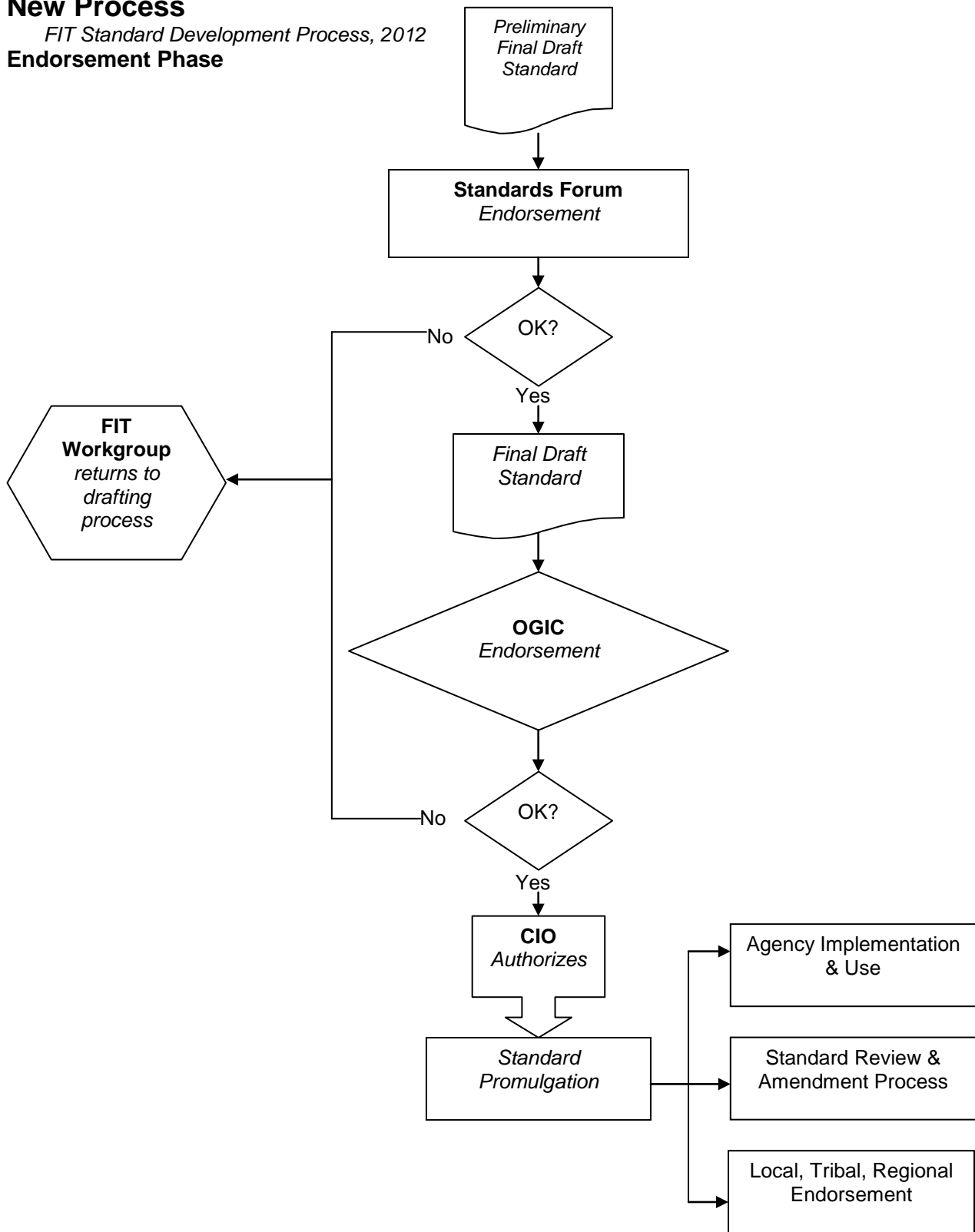
Preparedness/Hazards/Utilities Advisory Group – FIT Themes

| <i>FIT Themes</i> | <i>Representatives Agencies</i> | <i>Contacts</i> |
|--|---|--|
| Preparedness Utilities Hazards Climate Imagery | Oregon Department of Environmental Quality Oregon Emergency Management Department of Geology and Mineral Industries Land Conservation and Development Department of State Lands United States Geological Survey Port of Portland Local and Regional Governments Oregon Tribes | Don Pettit David Stuckey Ian Madin Christine Shirley Clark Niewendorp Tom Wiley Jonathan Allen Rob Witter Bill Burns Jed Roberts Jason McCloughry Randy Sounhein Sheri Schneider Emmor Nile Sim Ogle |

New Process

FIT Standard Development Process, 2012

Endorsement Phase



FIT Advisory Group

Advisory group purpose

- To provide a non-exhaustive list of potential experts in the field for the FIT elements assigned to that group.
- A FIT group that is seeking review of a standard could use these groups as a resource to obtain a diverse set of peer reviews.
- The advisory groups will convene virtually.

Guidance for how the advisory groups are to be utilized

- E-mail notification to the entire group that a standard is in review and at the advisory group step - seeking mandatory reviews
- Require minimum of three responses from the group, the standard cannot move forward in the process unless this is documented
- Require certain review criteria, e.g. grammar, usability, etc.
- Require a review from a non-Oregon state agency, e.g. tribe, local government, or other state
- Identify that the advisory groups are not exhaustive, if a known expert is not on the advisory list, that person can be a reviewer and potentially added to the advisory group
- Obtain permission from potential advisory group members to be on the list

Amending Existing Standards

Introduction

As standards are endorsed and implemented, they become living documents needing periodic review by the community of data sources and consumers. Each aspect must remain fully relevant, workable and serving the intended purpose. This document describes the process for amending a GIS standard in Oregon. Guidelines for preserving revision history (attached) supplement the process.

Initiating an Amendment

An issue or improvement for the existing standard will usually be identified by someone in the particular community of interest to the appropriate Framework Implementation Team (FIT), through the overall FIT Chair, or through another member of the Geospatial Enterprise Office (GEO). Depending on the nature or number of changes identified, two approaches are available.

Process for Minor Amendments

What is a minor amendment? Here are some examples:

1. Clerical changes providing clarity, correction, or consistency.
2. One or two details of process or data model designed to improve existing product or result.
3. Changes in organization, paragraph headings, terminology or legal or bibliographic reference.

The process for a minor amendment is set forth below:

1. Discuss issues and proposed changes with the appropriate FIT group.
2. Incorporate recommended changes into existing standard, indexing the version number (minor update would index the number after the dot, e.g., v1.3 to v1.4), with a notation in the revision history. Preserve changes or describe them with sufficient specificity.
3. The revised Standard will then be published on GEO's standards Web page. GEO and the relevant FIT group will announce the publication by posting messages to all the relevant listservers for a period of at least 30 days. During this period, comments and suggestions will

be collected by the contact listed on the standard, usually the FIT theme lead. If none are submitted, the standard will be posted without further process.

4. If comments or suggestions are received, they will be brought to the relevant FIT group for consideration and possible incorporation. Any changes trigger another publication and comment period. Repeat as necessary until consensus is reached. At this time, the updated standard will be posted without further process.

Process for Major Amendments

A substantive update encompasses all updates that cannot be categorized as minor. Examples include changing exchange formats, making significant changes to a data model, adding to the list of minimum attributes or changing optional items to required items.

When making substantive changes to a standard, follow the process set forth below:

1. Discuss issues and proposed changes with the appropriate FIT group. Make an effort to include additional participants from under-represented groups. This step will result in recommended changes.
2. Incorporate changes into existing standard, indexing the version number (major update would index the number before the dot, e.g., v1.3 to v2.0), with a notation in the revision history. Preserve changes for ease of review.
3. Publish the revised standard on GEO's standards Web page. GEO and the relevant FIT group will announce the publication by posting messages to all the relevant listservers for a period of at least 45 days. During this period, comments and suggestions will be collected by the contact listed on the standard, usually the FIT theme lead.
4. Any comments or suggestions will be brought to the relevant FIT group for consideration and possible incorporation. If further changes are made, this triggers another publication and comment period. Repeat as necessary.
5. When consensus is reached, the updated standard will be presented to the GIS community for approval. After approval, it will be placed on the Oregon Geographic Information Council's (OGIC) consent agenda for endorsement at the next quarterly meeting.

Guidelines for Reciting Revision History

As standards have been developed and endorsed, most efforts have recorded the date and occasion of revisions to the standard on the coversheet. This practice can provide valuable information but will benefit from consistent practices. The guidelines below will assist the preservation of revision history and clarify the implementation details.

Pre-endorsement Revision History

When developing a standard for the first time, track revisions to the draft on the coversheet. Begin with version 0.1, which is frequently a straw man. Preface the revision history list with "Pre-endorsement Revision History" on the cover sheet. It is strongly preferred that the list of revisions coincide with the version number of the draft standard document (0.2, 0.3, etc.). Use the pre-endorsement revision history to describe the development of the standard in the appropriate paragraph of the document (usually section 1.5).

Post-endorsement Revision History

After OGIC endorses a standard for the first time, the version becomes 1.0. A statement reflecting endorsement replaces the pre-endorsement revision history on the coversheet: "Endorsed by Oregon Geographic Information Council on [date]."

Subsequent amendments (minor or major) will index the version number as set forth in the *Procedures for Amending GIS Standards in Oregon*. Capture the revision history for major updates on the coversheet. Revision history for minor amendments may be captured on the coversheet but should be identified as such. Add additional date(s) of endorsement to the coversheet whenever renewed endorsement occurs. Describe the process for major amendments in the standard development paragraph to keep it current.

Future Considerations

It may be necessary to sweep or consolidate revision history on the coversheet as histories lengthen. Alternatively, revision history may be preserved in an appendix to the standard.

Appendix A

Oregon Geodata Compatibility Guidelines, October 2002

OREGON GEODATA COMPATIBILITY GUIDELINES

INTRODUCTION

There is a great need in Oregon for a Framework, or foundation, of easily and economically shareable information concerning the physical, biological, sociological, and economic features of our State. This kind of information is commonly called geographic information, which means that the information can be linked to specific geographic locations by such geographic locators as an address, a tax lot number, a mile post, a watershed unit, etc. It is widely acknowledged that 85% to 90% of all information collected and used by government agencies and utilities is geographically related. The use of guidelines and standards will make the collection, sharing and use of a geographic information Framework more efficient and less expensive.

The geographic data Framework in Oregon should be a consistent, standardized set of digital geospatial data and supporting services that will:

- provide a geospatial foundation to which an organization can add detail and attach attribute information
- provide a base on which an organization can accurately register and compile other themes of data, such as zoning, permits, assessment data, accident data, hazardous waste site data, etc.
- orient and link the results of an application to the landscape.

The Oregon geographic data Framework will help data producers locate their information in its correct position and provide a means of integrating this information with other geospatial data. Benefits from the development of a statewide geographic data Framework include reduced expenditures for data, increased ease of obtaining and using data collected by others, accelerated development of critical applications, increased number of customers for data products linked to the Framework, and improved recognition of programs.

One of the most important tasks in developing a geographic data Framework for Oregon is to develop data standards for the various data themes that are most commonly needed and shared by users. When data standards are clearly defined, useful data can and will be developed and shared by multiple data producers and users all across the state.

The guidelines presented here are intended to direct the creation of standards for geographic data and establish a vision for a statewide geodata Framework that closely parallels Framework development throughout the rest of the country. The national effort is guided by the Federal Geographic Data Committee.

ROAD MAP

Vision Statement

In the fall of 2000, a diverse group of individuals and organizations from the Oregon Geographic Information System (GIS) Community participated in a forum on GIS issues in Salem, Oregon. As a result of this forum, the Oregon GIS Community developed, and the Oregon Geographic Information Council adopted, the following **vision statement** to guide future activities.

The Oregon Geographic Information Council (OGIC) envisions an environment for developing and managing Oregon's geospatial assets that:

- a. Encourages and supports the contributions of everyone in the Geographic Information Community;*

- b. Leverages the human, technical, and information resources of the Geographic Information Community to accomplish measurable statewide and local objectives and to solve real problems;
- c. Provides an organized Framework to enable data integration and sharing of both spatial and non-spatial applications and information;
- d. Raises the awareness and knowledge of all citizens and businesses in the state about the uses and benefits of all geospatial technologies;
- e. Serves as a facilitator between geospatial technology and the broader realm of information technology;
- f. Prevents or discourages misuse or abuse of public data;
- g. Spreads the benefits of geographic information and geospatial technology broadly and equitably to improve the quality of life and the environment for Oregon's citizens.

The **objectives** to be achieved as a result of that vision were identified as follows:

- **Coordinate Geographic Information Management Statewide**
- **Promote the View of Geographic Information as a Critical Information Asset**
- **Promote Partnerships and Collaboration to Develop and Use Geographic Information**
- **Enable Access to Geographic Data**
- **Address Legal and Policy Issues Related to Geographic Data Distribution**
- **Improve Geographic Information Framework Management**
- **Enable Integration of Non-Framework Geographic Data**
- **Improve Data Quality**
- **Support Data Sharing**
- **Support Provision of Services for Geographic Information Development and Use**
- **Promote Broader Use and Benefit of Geographic Information Systems**

As another outcome of the forum, the Oregon Geographic Information Council developed the 'Oregon Strategic Plan for Geographic Information Management', adopted in June 2001. The Strategic Plan calls for the establishment of a Framework Implementation Team (FIT) and the design of an inclusive data standards development process. The Framework Implementation Team has been established and is composed of representatives from all levels of government, utilities, academia, and the private sector. The Oregon Geographic Information Council's Framework Implementation Team has identified and prioritized 13 primary Framework data themes, containing over 100 individual data elements. There are Framework Working Groups working concurrently on 10 of these themes, with over 200 people in the various groups. Each Group has two items on its agenda:

- *Develop or revise the implementation plan for the Framework theme*
- *Propose an existing or revised data content standard for the Framework theme*

The individual Framework Work Groups will conduct research to determine if a national standard or other state standard exists that will meet the needs of the GIS community in Oregon, perhaps with slight modification. The flowchart in Figure 1 indicates the drafting and endorsement phases of the standards initiative. A key element of the process is the presentation of each standard for endorsement by the GIS community at a semiannual Standards Forum.

The standards process is very inclusive and will be driven by the needs of the GIS community. When the community has determined the appropriate standards, those standards will be endorsed at the executive level in state government, mandated for state agencies and academic institutions, and strongly recommended for adoption and use by other levels of government and the private sector.

Standards Development and Endorsement Process

The Oregon Geographic Information Council (OGIC) and the Oregon Watershed Enhancement Board (OWEB) both have certain mandates related to data standards. The OGIC is mandated by a Governor's Executive Order to develop geographic information guidelines and standards to be adopted by the Information Technology Executive Council. The Oregon Watershed Enhancement Board is mandated by ORS541.365 to establish protocols, policies and procedures necessary to integrate and organize geographic information and to coordinate the information, data and data retrieval needs of the natural resource agencies of the state with the Oregon Geospatial Data Clearinghouse. The following standards development and endorsement process has been agreed upon by the Oregon Geographic Information Council and the Oregon Watershed Enhancement Board:

Formulation and Refinement

1. The Framework Implementation Team will identify standards requirements, including standards for each of the defined Framework data themes.
2. OWEB will identify those data themes that are relevant to the implementation of the Oregon Plan for Salmon and Watersheds (Oregon Plan) so that each FIT Working Group will know if OWEB Board approval will be required and involvement of the Oregon Plan teams will be necessary.
3. The Framework Implementation Team (FIT) Working Groups will draft and/or identify required standards. The FIT Working Groups will test proposed standards against the guidelines presented here. The FIT will submit proposed standards to the GIS Community for review.
4. The FIT Working Groups will revise standards as appropriate based on input and useability tests by the GIS Community. The FIT, the GIS Program Leaders (GPL), and the Interorganizational Resource Information Coordinating Council (IRICC) will review the revised standards. If the standard is related to the Oregon Plan, the OWEB staff will also review the revised standard.
5. The FIT Working Groups will revise standards as appropriate based on these reviews and the FIT will move each standard to the Endorsement phase of the process.

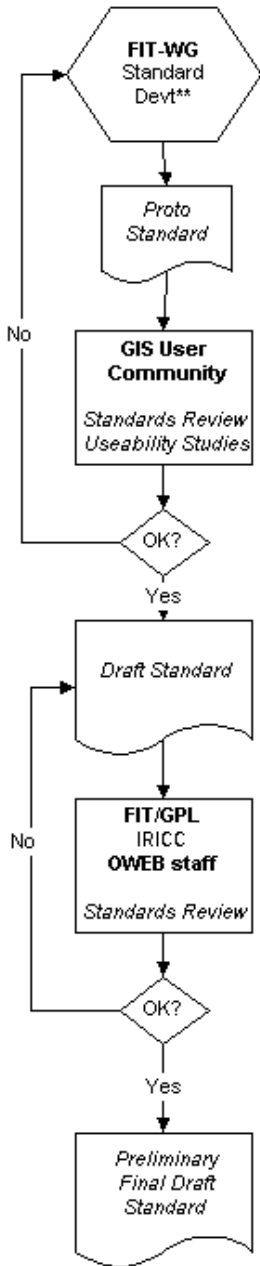
Endorsement

5. Each draft standard will be presented to the GIS Community at a Standards Forum. The FIT Working Groups will revise standards based on input from the Forum, if necessary.
6. If standards are endorsed at the Forum, OGIC's Policy Advisory Committee will review and recommend proposed standards to OGIC. If the standard is related to the Oregon Plan, an OWEB Program review will be completed before a recommendation is made to OGIC. If revisions are needed, the FIT Working Groups will make revisions and the reviews will be done again.
7. If the standard relates to the Oregon Plan and OGIC endorses it, OWEB will review and approve the proposed standard. OGIC, and OWEB if appropriate, will provide to the Oregon Information Technology Executive Council (ITEC) a policy recommendation for specific standards adoption.
8. The Oregon Information Technology Executive Council will review and adopt the proposed standards and authorize them for State agencies and academic institutions, while sending a recommendation for adoption to the OGIC and the OWEB for distribution to the GIS

Community at large. Any required revisions during the endorsement phase will be done by the FIT Working Groups.

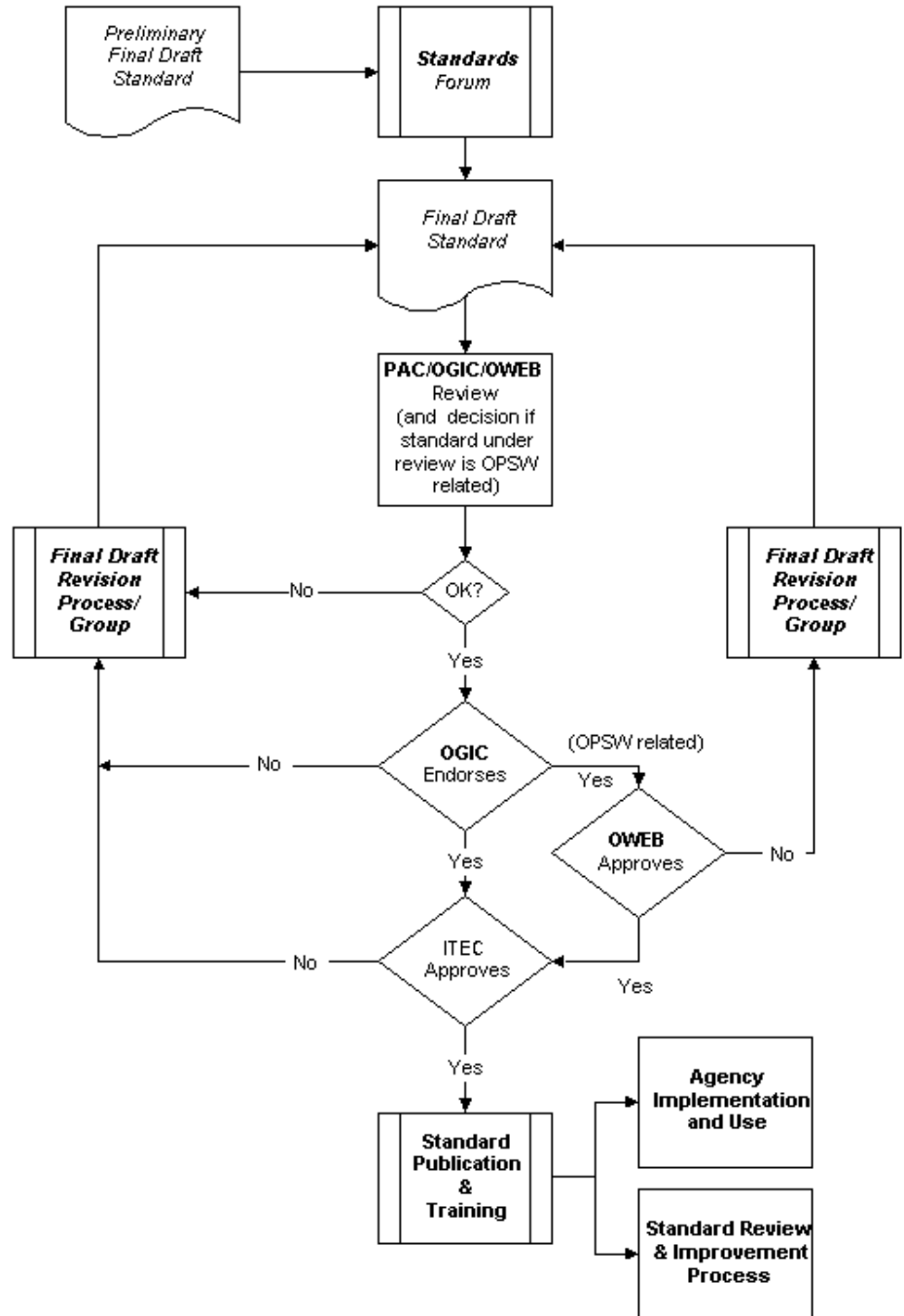
FIGURE 1

Drafting Phase
Standard 'Owner': FIT-WG



Endorsement Phase

Standard 'Owner':
Statewide GIS Coordinator



** The relationship of any specific standard under development to the Oregon Plan for Salmon and Watersheds (OPSW) will be made explicit as early as possible.

Standards Classification

The following table indicates the standards currently identified and scheduled for development by the Oregon FIT:

Table of Standards Classification

Data Useability and Transfer Standards

| | |
|--|--|
| Content Standard for Geospatial Metadata | Situs addresses, building outlines, archaeological sites |
| Projection and Datum Standard | Statewide road centerline network and related features |
| Archival Standard | Georeferenced image from photography or remote sensing |

Data Content Standards

| | |
|--|--|
| Geodetic Control | Digital elevation model of georeferenced vertical positions |
| Cadastral (property ownership) | Surface water network and related features |
| Administrative Boundaries | Geology, geomorphology, soils, caves, geohazards |
| Cultural Features | Fish habitats, fire data, terrestrial species ranges, vegetation |
| Transportation | Public and industrial ownership, land cover, land use |
| Digital Orthoimagery | Rainfall, snowfall, temperature ranges, rain intensity/flow |
| Elevation | Local service facilities and cross-country transmission features |
| Hydrography | |
| Geoscience Features | |
| Bioscience Features | |
| Land Cover/Use | |
| Climate Features | |
| Utilities | |
| Documents data sets, describing content, history, accuracy, quality, and other characteristics of data | |
| Defines a particular means for representing the three dimensional Earth on a two dimensional map surface | |
| Defines a particular methodology and protocol for archiving geodata as updates are made incrementally | |
| Basic reference Framework for all geodata | |
| Land rights data fundamental to a modern land records system | |
| Widely used district, service, and government boundaries | |

GUIDELINES

The objectives of this section of the Geodata Compatibility Guidelines are three-fold:

- to guide the overall process for creation and adoption of geodata standards
- to establish a vision for geodata Framework development throughout the state
- to provide a template for the development of individual geodata standards

There is a need among geodata users in Oregon for a few common themes of geographic data that can be easily and economically shared by all. To enable the ease and economy of data sharing, these common data themes must be developed in a standardized fashion.

The remainder of this document offers specific guidance on the formulation of proposed geodata standards. The technical and operational context subsection describes a distributed geographic data Framework in Oregon within which geodata standards should be developed. The issues in the technical/operations subsection represent the minimum set of topics to be addressed in the development of each individual geodata standard and describe the technical and operational context for the Oregon geodata Framework. The data characteristics subsection contains a brief description of the common Framework data themes that need to be standardized, including suggested minimum graphic and attribute content. Each individual data standard may contain recommended data characteristics that vary from the Guidelines, based on the theme expertise within the group tasked with developing individual standards.

Expectations

Statewide standards support the Oregon geodata Framework. There are several expectations for geodata standards:

Within Task Force Scope - Geodata standards will be within the scope of the vision statement and objectives of the Oregon Framework Implementation Team, as stated earlier in this document, and the goals and objectives of the Oregon Geographic Information Council. Geodata standards must relate to geospatial data, cover appropriate topical areas, and standardize either data or processes to advance data sharing and minimize duplication of effort.

Future Focused - Future focused means that geodata standards are intended to remove impedances to sharing information rather than changing existing successful data sharing arrangements. Geodata standards should be developed to promote new and enhanced interaction with existing coordinating mechanisms, such as OGIC and OWEB, that have interest in the generation, collection, use, and transfer of spatial data. Geodata standards need to focus on solving future problems. Geodata standards are not intended to re-formalize existing solutions.

Structured - Geodata standards need to be developed and presented in a structured manner that will lead to understandability and useability by consumers. This guideline provides minimal guidance for development and documentation of standards. There are many structured methodologies that can be employed by standards developers that will lead to complete and understandable standards. This guideline does not specify a development methodology.

Technology Independent - Geodata standards will not constrain technology development. They will not be developed or implemented in a way that limits the use of new and emerging technologies. To maximize use of the standard, they also will not be written or implemented in a way that limits any vendor or technology.

Integrated - Geodata standards will be integrated with one another and with related standards. This means there will not be overlapping definitions, authorities, or procedures. Standards development will be coordinated to eliminate duplicate efforts and to maximize the efforts of the volunteers contributing to and implementing standards. Geodata standards will lead to an integrated geographic data Framework for Oregon.

Evolving - Geodata standards will evolve as technology and institutional mandates change. The standards will be written to allow for evolution and will accommodate backward compatibility for information gathered under previously known standards. There will be known update and maintenance procedures that are timely and responsive to changes. The procedures will be documented as a part of the standards development process.

Supportable - Geodata standards must be supportable by the geospatial vendor community. They will be developed in a manner that is supportable by known or emerging technology.

Publicly Available - Geodata standards will have a broadly based public notice of their availability. Geodata standards will not be developed from copyrighted or proprietary standards that would limit the ability of the final standard to be publicly available. They will not contain any copyrights or other limitations on their use or reproduction. Geodata standards will be available electronically and via the Internet.

Complete and Consistent - Geodata standards will be complete in terms of the standards components and methodology described in this guideline. Geodata standards will have a consistent form and format.

Geodata Standards Goals

The goal of the Framework Implementation Team is to provide guidelines for the development and documentation of geodata standards, with a minimal structure for standards developers. This structure is intended to support FIT Working Groups, in their efforts to develop and recommend the use of geodata standards.

Geodata standards are intended to increase interoperability among automated geospatial information systems. A major objective of geodata standards is the eventual development of a statewide digital spatial information resource with the involvement of all geodata users, including but not limited to, utilities, academia, private sector, Federal, State, tribal, regional, and local governments. This statewide information resource, integrated by guidelines and standards, will enable sharing and efficient transfer of spatial data between producers and users. Enhanced coordination will build information partnerships among government institutions and the public and private sectors, avoiding wasteful duplication of effort and ensuring effective and economical management of information resources in meeting essential user requirements.

Geodata Standards Format

The following guidelines with regard to format will apply to all geodata standards developed and promulgated through the activities of the Oregon Framework Implementation Team, the Oregon Geographic Information Council, and the Oregon Watershed Enhancement Board:

- Geodata Standards shall have a title page that will include the title of the standard, the responsible FIT Working Group or other subcommittee, and contact information including postal and e-mail addresses.
- Geodata Standards shall have a table of contents. All pages will be numbered and dated.
- Geodata Standards shall contain an introduction that will describe the following:
 - Mission and Goals of Standard
 - Relationship to Existing Standards
 - Description of Standard
 - Applicability and Intended Uses of Standard
 - Standard Development Procedures
 - ⇒ Participants
 - ⇒ Comments and Reviews
 - Maintenance of the Standard
- The body of the standard shall follow the introduction.
 - The body of the standard will address all topics in the technical/operational subsection of this guideline.
 - If specific topics are not applicable to an individual data theme, describe why that topic does not apply.
 - Individual standards may necessitate additional technical/operational topics not articulated in this guideline.
 - The data characteristics of any individual standard may vary from those indicated in the data characteristics subsection of this guideline.
 - Every standard should contain a minimum set of graphic and attribute data elements.
 - Each standard may, in addition, include an optional set of graphic and attribute data elements.
- References will be listed in a separate section.

- The Framework Implementation Team shall receive digital copies of the standard from the working group in Microsoft Word format. Digital versions shall be made available at the Oregon Geospatial Data Clearinghouse's home page in PDF format at <http://www.gis.state.or.us>.

Standards will also address the following topics:

- Content
 - Identify what is being standardized and the scope of the standards project.
- Need
 - Identify why this standard is being proposed, describing as much as possible the benefits of developing the standard and the consequences of not developing the standard.
- Participation
 - Identify participating agencies or organizations and methods that were used to assure a consensual development process.
- Integration
 - Describe the relationship of this standards proposal to ongoing geodata standards efforts and existing geodata standards. If there are relationships with other existing standards, identify both the standard and the relationship.

Geodata Standards Technical and Operational Context

The following discussion establishes the context within which geodata standards for Oregon will be developed. Each of the issues below plays an important role in the direction of standards development and will be addressed as appropriate within the content of individual standards. At a minimum, each standard should be checked against all of the following issues to ensure that each issue has been resolved appropriately.

Data Environment

Access to a published version of geodata sets (current and past versions) by information networks and digital media should be supported. Users will be able to find available Framework geodata through the Oregon Geospatial Data Clearinghouse where all Framework metadata will be stored and accessible. It may be appropriate for some geodata sets, however, to be stored and maintained in a distributed environment at the site where they are produced. In this case, a copy of the official data set will be available from the Clearinghouse, or appropriate arrangements must be made to provide real-time data access from distributed locations.

Reference Systems

Use of a common means of referencing coordinate positions on the Earth is essential to allow geodata from various sources and different geographic locations to be joined and integrated. In addition, to be used as the locational Framework for other thematic data, the coordinate system must be well established, clearly specified, and consistent with national and world use. Multiple datums are currently in use for various data themes. The Oregon geodata Framework should support the use of a single consistent datum for referencing horizontal coordinate information and a single consistent datum for referencing vertical coordinate information. In addition, support should be given to efforts toward converting existing data to the latest recognized horizontal and vertical datums where such conversion is feasible and of value. The latest recognized datum for horizontal coordinate information for geodata is the North American Datum of 1983/1991. The latest recognized datum for vertical coordinate information is the North American Vertical Datum of 1988.

Integration of Themes

Geodata sets will be integrated across themes. This goal may be difficult to achieve for places where data for various themes are collected at different resolutions and by different data producers. However, as integrated geodata sets are developed, these data sets should be held to the same standards as geodata containing a single theme.

Encoding

Geodata should be encoded using vector or raster spatial data models as appropriate to theme and feature content. Raster data models are appropriate for image data; vector data models for geodetic control, planimetrics, hypsography, transportation, hydrography, administrative boundaries, infrastructure, cadastral data, land cover, soils, geology, etc. Vector-based spatial objects must conform to topological rules.

Resolution

To meet the different needs of users, the geographic data Framework in Oregon should support geodata at varying resolutions. Multiple resolutions of the same data theme (for example, land use data at different levels of generalization and having positional accuracies of 50, 10, and 1 meter) may exist for any given location. Where practical, and where suitable higher resolution data exist, the lower resolution data may be generalized from the higher resolution data. The data should be generalized according to a standardized set of rules for each theme. Alternate rule sets may be needed for a broad range of generalization.

Accuracy

Accuracy considerations are critical for data interoperability. The accuracy of any particular dataset should be appropriate for the applications for which it is used. The accuracy, at whatever level, must be documented in the metadata according to the minimum criteria indicated in the Oregon Core Metadata Standard.

Edge Matching

As a general principle, geometric seamlessness is desirable. However, the accuracy of geometric positions of geodata to be integrated from various sources should not be compromised to achieve geometric seamlessness. For example, if a road crosses the boundary of two (otherwise equivalent) geodata sets from two different sources, the positions of the road at the common edge should be geometrically joined only if it can be achieved within the positional accuracy of the dataset.

If it is not possible to achieve geometric seamlessness within the positional accuracy of the datasets, the disjoint lines that represent the location of the road should instead be associated through a common attribute feature, resulting in "logical seamlessness." The coding schemas necessary for such logical seamlessness should follow the schemas currently under development at the national level. The reasoning for this is based on the assumption that organizations that integrate data would not have information better than those that contributed the data, and so there is little basis for "repairing" the data. Of course, data producers should be encouraged to work with those in adjoining jurisdictions to align their data and remove these ambiguities.

Feature Identification Code

To allow maintenance of users' existing data investments, to minimize the effort required to integrate geodata from various sources, and to link data represented at different resolutions, a consistent method of identifying units of geodata is needed.

To provide for these capabilities, the geodata Framework in Oregon should employ a model of geographic reality that utilizes the concept of a 'feature', which is a description of geographic phenomena (for example, a road) at or near the Earth's surface. Each occurrence of a phenomenon (e.g., a road) should be assigned a unique, permanent feature identification code. A feature should be linked to spatial objects (such as points, lines, and polygons) to identify the location of the feature; different sets of spatial objects should exist for different resolutions.

The feature identification code:

- provides users a "key" through which they can associate geographic data from various sources to their own attribute data,
- serves as a tracking mechanism for performing transactional updates,
- provides a link among representations of a feature at different resolutions and across different areal extents.

Once assigned, the "permanent" code should change only when absolutely necessary and following a standardized process.

Attributes

When a feature is captured in digital form, it may be further described by a set of attributes and relationships. Attributes define the feature's characteristics; examples include name and function. Relationships may be defined to express interactions that occur between features, such as flow in a river system or connectivity in a transportation network.

Transactional Updating

The geodata Framework in Oregon should support transactional updating so that data producers make change files available and users only need to process changes. This approach reduces the impact of changes on existing investments. The metadata for geodata sets should support the concept of date stamping for individual features or, at a minimum, for individual tiles or other geographic organizational schemas.

Records Management and Archival

Past versions of geodata should be retained so that information is available for historical or process studies. Access to past versions is necessary to support historical thematic data and time-based studies essential in many applications. Past versions of geodata should be retained in an accessible geodata archive with the appropriate metadata.

Metadata

Metadata detailing the characteristics and quality of the geodata must be provided. Metadata must follow, at a minimum, the Oregon Core Metadata Standards and should make every effort to meet the more rigorous standards set forth in the Federal Metadata Content Standard, where feasible. Metadata is of crucial importance to the geodata Framework in Oregon. A user should be able to access metadata regarding any geodata set completed for any location easily and effectively. The metadata should provide sufficient information to allow the user to determine if that geodata set will meet the intended purpose, as well as telling the user how to access the data.

Data Characteristics

The information content of the Oregon geodata Framework should include the following commonly shared foundational data themes:

- geodetic control
- cadastral data
- administrative boundaries
- cultural features
- transportation
- digital orthoimagery
- elevation
- hydrography
- landcover/land use
- climate
- geoscience features
- bioscience features
- utilities

These themes serve as the shared foundation and reference upon which most, if not all, other thematic data sets are compiled. The Federal Geographic Data Committee's Development of a National Digital Geospatial Data Framework specifies a similar list of commonly shared data themes. In addition, many other states have adopted similar lists of data themes as a necessary foundation upon which to develop a shared and shareable statewide geodata Framework. The list of data themes above reflects the most commonly needed and shared geodata in Oregon. Each of the data themes indicated above should be standardized in order to ensure the ease and economy of data sharing state wide. The standards to be developed and adopted for each individual data theme should address, at a minimum, the graphic and attribute content indicated below. In addition, it is anticipated that the standards for each data theme will address a host of issues and data content appropriate to that theme, as determined by the data producers and users of that data theme.

Geodetic Control

Geodetic control provides the means for determining locations of features referenced to common, nationally-used horizontal and vertical coordinate systems. Geodetic data provide the basic reference Framework for all geodata and provide a method for relating different layers and sets of geodata to one another. Geodetic data are essential in developing a common coordinate reference for all other geographic features. Horizontal or vertical location is used as a basis for obtaining locations of other points. The Oregon geodata Framework should include, at a minimum, the following geodetic control feature and attribute data:

- geodetic control points, referenced to the National Spatial Reference System maintained by the National Geodetic Survey
- station name
- bench mark
- GPS base station
- monument/survey marker
- feature identification code
- latitude and longitude (with accuracy code) for each control point, or state plane coord., or UTM coord.
- ellipsoid height or orthometric height (with accuracy code) for each control point
- selected projection

The latitude, longitude, and ellipsoid height should be determined relative to the Geodetic Reference System of 1980 reference ellipsoid, a mathematical model of the Earth. The orthometric height should be determined relative to the most current geoid model for the United States, GEOID93, developed by the National Geodetic Survey.

Cadastral (property ownership)

Cadastral, or land rights, information is arguably the most important geographic data set for local government users. Cadastral information is the graphic and attribute data describing parcels of land and the rights people hold to those parcels. Cadastral data serves as the foundation upon which the majority of local thematic geodata is compiled. In Oregon, the Public Land Survey System (PLSS) serves as the cadastral reference grid to which land rights features and attributes are linked. The cadastral geodata Framework should include at least the following features and attributes:

- 1/4 section, section, township, and range lines (PLSS)
- PLSS section, township, and range numbers
- subdivision boundary, blocks, lots
- subdivision name
- tax lot boundary
- feature identification code
- accuracy level
- boundary corner
- document reference

Administrative Boundaries

Administrative and governmental boundaries are the district, service, governmental, election, and census polygons that serve to organize administrative and governmental functions. Administrative and governmental boundaries define geographic areas within which resources can be targeted and services can be reasonably managed. The geographic features for administrative and governmental boundaries that should be considered for inclusion in the Oregon geodata Framework are:

- fire or emergency district
- public school district
- utility service boundary
- tax code boundaries
- zoning development boundary
- wilderness
- greenways
- watershed council boundary
- political boundary
- county boundary
- city boundary
- American Indian Reservations and Trustlands
- zip code boundary
- census blocks and tracts

Each should have the name and the applicable Federal Information Processing Standard (FIPS) code, if available, to serve as its unique identifier. In addition, the boundaries of the features should include information about other features (such as roads, railroads, or streams) with which the boundaries are associated.

Cultural Features

Addresses are an important locational key for local governments, particularly for emergency services. Addresses are typically attribute information that are linked to individual tax lots as discrete situs addresses. One of the primary difficulties in developing an effective and comprehensive situs address database for local government is that there are often multiple addresses for individual tax lots, and sometimes a single address for multiple tax lots. Because of the one-to-many and many-to-one aspect of the relationship between addresses and tax lots, it is necessary, or at least advisable, to develop a graphic point coverage for situs addresses. There are also many other cultural features that are an important part of this theme. The geodata Framework for cultural features in Oregon should include the following feature and attribute data elements:

- situs address point coverage
- street number, name, prefix and/or suffix direction, and type
- archaeological sites
- public building outlines
- cemeteries
- demographic data
- historic sites
- fire water sources
- fire lookouts
- critical facilities
- hazardous materials
- recreation sites

Transportation

The primary and secondary road network and associated features, facilities, and attributes constitute the transportation theme. This theme includes a linear referencing system important for locating incidents within the network. In

addition, a feature identification code should be developed and applied to every segment of the network and to all associated features and facilities. The geodata Framework in Oregon for transportation data should include, at a minimum, the following feature and attribute data elements:

- airports
- bridges
- culverts
- traffic analysis zones
- transportation structures
- road centerlines
- address ranges
- railroads
- trails
- ports
- heliports
- light houses
- military operations
- navigation hazards
- airports, runways
- VOR
- cablecar and chairlifts
- linear referencing system
- name
- feature identification code
- functional classification

Digital Orthoimagery

An orthoimage is a georeferenced image prepared from a perspective photograph or other remotely-sensed data in which displacements of images due to sensor orientation and terrain relief have been removed. Many geographic features can be interpreted and compiled from the orthoimage. Orthoimages can serve as a backdrop, in addition to linking the results of an application to the landscape. The Oregon geodata Framework should include, at a minimum:

- digital orthoimages, cast on the latest available datum
- feature identification code for each image
- measurable accuracy and resolution
- image georeferencing

The geodata Framework will likely include imagery that varies in resolution from sub-meter to tens of meters. High-resolution data (one meter or smaller pixels) are thought to be the most useful to support local data needs. For some regional, state, and federal uses, lower resolution imagery may be required.

Elevation Data (hypsoigraphy)

Elevation refers to a spatially referenced vertical position above or below a datum surface. Digital, georeferenced elevation data can exist in several forms, including digital elevation models (DEMs), triangulated irregular networks, vector contour files, and spot elevations. The other forms of elevation data can be derived from DEMs, so the DEM should serve as the minimum element for elevation data within the Oregon geodata Framework. The geodata Framework for elevations of land surfaces should at least include:

- digital elevation models
- feature identification code
- density of elevation values
- selected base datum

Many existing land surface elevations are referenced to the National Geodetic Vertical Datum of 1929, but implementation of the National Geodetic Vertical Datum of 1988 should be addressed in any standard that deals with elevation data.

Hydrography

Hydrography defines a surface water feature that may or may not be connected to other surface water features. These surface water features are commonly referred to as reaches. The hydrography geodata Framework in Oregon should at least include the following feature and attribute components:

- stream reaches
- open water shorelines
- miscellaneous features (wells, springs, watersheds, etc.)
- name
- feature identification code
- connectivity (flow paths)
- direction of flow
- measurable accuracy level or range
- classification by reach type

Utilities

It may be that standards for utilities are developed in two or more phases, one or more for service facilities that are provided or managed at the local government level, and one or more for cross-country transmission lines, distribution lines, and facilities generally managed by public utilities or the private sector. The general data content for the infrastructure geodata Framework in Oregon should, at a minimum, include the following:

- transmission/distribution lines (electric, gas, telecommunications)
- water/wastewater/stormwater pipelines
- node facilities (manholes, valves, poles, transformers, towers, outfalls, etc.)
- feature identification code

Geoscience Features

[NOTE: Descriptive text for this theme needed here.] The features of the Geoscience Framework data theme for Oregon should include:

- geology
- geomorphology
- geohazards
- soils
- caves
- feature identification codes

Bioscience Features

Bioscience features relate to biological datasets of statewide concern. Many of the bioscience features relate to the biological information needs of the Oregon Plan for Salmon and Watersheds established by Executive Order. The goal of the Oregon Plan is to enhance, restore, and protect Oregon's native salmonid population, watersheds, fish, and wildlife habitat and water quality while sustaining a healthy economy. Thus, the features of the Bioscience Framework data theme for Oregon should include:

- plant, fish, and wildlife species locations and ranges
- fish and wildlife habitats
- current and historic vegetation communities
- wetlands
- seed zones
- fire occurrence, burned areas, fuel model

- feature identification codes

Landcover/Land Use

[NOTE: Descriptive text for this theme needed here.] The features of the Landcover/Land Use Framework data theme for Oregon should include:

- industrial ownership
- landcover
- land use
- public ownership
- feature identification codes

Climate

[NOTE: Descriptive text for this theme needed here.] The features of the Climate Framework data theme for Oregon should include:

- 100 year peak flow
- 24 hour rain intensity
- annual rainfall
- annual snowfall
- RAWS
- temperature ranges
- feature identification codes

[Note: Much of the text used in the body of the Guidelines document and in Appendices A and B was borrowed from the FGDC's Standards Reference Model, 1996 and the Development of a National Digital Geospatial Data Framework, 1995.]

Appendix B

Notes, Framework Governance Review, January 2012

Framework Governance Review

Thursday, January 27th
10am to Noon
Land Board Room
Department of State Lands
775 Summer St. NE
Salem, OR

This document represents our interpretation of the discussion that occurred at this meeting. Progress has been made in some areas but not in others. Referenced documents are available on the Framework page (<http://gis.oregon.gov/DAS/EISPD/GEO/fit/FIT.shtml>) in the "Framework Governance Review Documents" section. Suggestions, corrections and any other feedback welcomed.

Thanks!

Milt

milton.e.hill@state.or.us

Terms:

We discussed the need for a glossary. There are several specific to GIS (http://wiki.gis.com/wiki/index.php/GIS_Glossary and <http://resources.arcgis.com/glossary> among others) and we don't need to duplicate the available listings but we do have some specific uses for words or phrases that would benefit from a publically available glossary. Two Oregon specific glossaries have been located and we've combined them and made a few changes but more work needs to be done. Please review and submit suggestions. "**Oregon_GIS_Glossary_v0.1.doc**" is the draft of this new glossary.

The two existing sources referenced are:

- Appendix G. from the 1996 Oregon GIS Plan (<http://www.oregon.gov/DAS/EISPD/GEO/ogic/ogicplan.shtml#gloss>).
- Appendix A from the 2007 Framework Guidance document (<http://gis.oregon.gov/DAS/EISPD/GEO/docs/stewardship/navigatORFrameworkStewardshipv03.pdf>)

Framework Implementation Team (FIT) discussion:

Topics we heard in the discussion:

- FIT used to have regular meetings and people want this to happen again.
- Can we develop "health indicators" for the FIT Groups?
- Fit used to produce status reports. Perhaps we should reinstitute them?
- FITs are self organizing and voluntary so we have to be cautious of the bureaucratic burden asked of them and the leads. Too heavy of a burden may result in less participation.
- Some FITs work well with an informal structure and others don't.
- A Lead review offers the opportunity for the group to assess progress and direction. It also offers the opportunity for others to become involved.
- There appears to be little oversight and reporting from FITs. Perhaps there should be a periodic report to OGIC?
- What is the definition of Framework data?
- Do we have an up-to-date list of Framework data?

Follow ups and Proposed actions:

- Assure regular FIT meetings, perhaps every 6 months and alternating with Forums. This implies either a Forum or FIT meeting every three months.
- Attendance at these regular meetings: FIT Leads and active workgroup leads
- “Regularly scheduled meetings” have been included in the FIT Charter (section 6) (“**FIT_Charter_v0.1.doc**”)
- A definition for Framework data has been added to the glossary (“**Oregon_GIS_Glossary_v0.1.doc**”).
- Update the Framework Theme and Element list. The existing documents are from '07 and need work. This effort needs to be coordinated with a similar effort underway in the Preparedness FIT to create a catalog of data needed for preparedness and emergency response. We need your help with this. Contact Milt if you can volunteer some of your time. An example of the existing list is “**FW_Elements_Priority_Oct07.pdf**”. Please don’t edit this or spend a lot of time on any feedback until we develop a way to assimilate it.

FIT Charter:

We discussed several issues related to the Charter including Lead confirmation or endorsement, periodic review of the Leads and a stronger tie to Stewardship. With regards to the endorsement and review of FIT Leads we propose the following language in section 4.c.2 and 4.c.3.

2. *The FIT group Lead shall be proposed by consensus of the group and/or the FIT chair and subsequently endorsed by OGIC for a three year term.*
3. *Prior to the end of this term a FIT Group shall address the Lead position and propose either renewal or change to OGIC.*

See this proposal in the context of the entire document by opening “**FIT_Charter_v0.1.doc**”.

Additional suggestions that have yet to be included in the Charter:

- Ensure data is available with full FGDC metadata through the Spatial Data Explorer as both a downloadable file and map services.

Stewardship Governance and document development process:

We have model Stewardship Plan and Charter documents but no standard process for document development and review. OGIC asks that we investigate applying the Standards development process to Stewardship development.

Topics we heard in the discussion:

- The Standards development process is too involved for Stewardship. Make it simpler.
- Only applies to Stewardship Plans, not Charters.
- The model Stewardship documents are difficult to use. Can’t we make them easier to adapt to specific cases?
- Make stewardship documents like metadata – “machine readable” or parsable.
- How do we know which information appears in a Stewardship document as opposed to metadata and other documentation?
- Formal stewardship, in this context, is only for Framework data.
- BLM trains data stewards in the responsibilities associated with being a Steward. Perhaps we should do something similar?

Follow ups and Proposed actions:

- Develop a Stewardship Plan development process modeled after the Standards development process but less complex.
- Rework model Stewardship documents, involve interested parties in process. Make sure the final document is parsable.
- Revise the existing spatial data documentation matrix (“**Spatial_Data_Document_Matrix_v0.1.doc**”). It’s purpose is to document a common understanding regarding how spatial data documentation should be handled, i.e., what goes where. Assure that the final document matches specifications in the Metadata Standard and model Stewardship documents.
- BLM has provided some of their training materials. We’ll review these and distribute something prior to the meeting for discussion.

Standards documentation refresh:

The Framework Standards development process is robust and works well but the documentation is outdated. Items to be addressed include:

- Intent is to mandate standards for State agencies and strongly encourage for others.
- State CIO (OGIC Chair) has legislative authority to set standards.
- Should CIOC be part of the endorsement process?
- Should some other State entity be included?
- What is the appropriate role for local/tribal/regional government?

Topics we heard in the discussion:

- Need to emphasize that the intent is for an exchange standard and does not apply to internal business use.
- There is concern that the scope could be misinterpreted as applying to ANY copies or uses of spatial data.
- State CIO has the authority to mandate IT Standards for State Agencies. This includes the existing GIS Standards. How should we proceed?
- Once the State mandates a standard other organizations (AOC, etc.) could take the standard to their membership for consideration.
- Standards = efficiency for participants.
- Standards represent an individual burden for a common gain.
- Standards represent a public asset.
- OWEB has statutorily mandated role in spatial data management, please send reference.
- OWEB needs to review proposed changes to their role in Standards review process.
- Existing Standards review process doesn't identify specific reviewers. There is a concern that simply specifying groups (GPL, PAC, etc) to review documents may result in insufficient review.
- We should consider adding true peer review to the process. USGS may have an example process. It was suggested that we set a minimum, documented review process that includes, for example, three reviews.
- We should consider extending review opportunities to subject matter experts outside the state.

Follow ups and Proposed actions:

- Develop guidance on the scope and applicability of State CIO mandated standards prior to implementing them. We think this has already been done but haven't located it yet. If we can't find it we'll work on recreating it.
- GEO is working with OWEB to obtain their input of proposed changes to their involvement in standards review as specified in the existing standards process diagram. We'll do this soon and share the proposed diagram with everyone prior to the next meeting.
- Further revise the standards process diagram to include peer review.
- Update and combine the existing "Oregon Standards Development Effort" and Procedures for Amending GIS Standards in Oregon" documents.
- The revised statute that specifies OWEB's role in coordinating natural resource geographic information is ORS 541.365 (<http://www.leg.state.or.us/ors/541.html>) (scroll down to .365)

" 541.365 Conduct of watershed enhancement program; integration of geographic information. (1) The Oregon Watershed Enhancement Board shall conduct a watershed enhancement program to benefit all users of the waters of this state. The board shall conduct the program in a manner that:

(a) Provides the greatest possible opportunity for volunteer participation to achieve the goals of the program; and

(b) Coordinates the information, data and data retrieval needs of the natural resource agencies of the state with the State Service Center for Geographic Information Systems.

(2) In order to effectuate the program described in this section, the board shall establish protocols, policies and procedures necessary to integrate and organize geographic information and make it available to persons and entities involved in implementation of the Oregon Plan.

(3) In working with the State Service Center for Geographic Information Systems, the board shall ensure that:

(a) Information received by the center is formatted in a manner that results in an integrated geographic information system that meets the needs of all local, state, regional, tribal and federal entities involved in implementation of the Oregon Plan; and

(b) The data are available to local, state and federal agencies and to any person implementing activities under the Oregon Plan.

(4) The program developed under this section shall include development and implementation, in coordination with the natural resource agencies of the state, of a statewide monitoring program for activities conducted under the Oregon Plan. [1987 c.734 §5; 2001 c.841 §3a; 2001 c.842 §1]"

Framework Funding:

- Currently funded by the assessment to State Agencies
- This funding is leveraged to a great extent
- navigator Business Case indicates that a large funding gap exists (~\$100m)
- Is there a way to increase sustainable funding for Framework data development?
- Should local/tribal/regional Governments play a role?

Topics we heard in discussion:

- The ORMAP Program is a funding model that spreads pain and benefit. It's a fee on a business process that funds a service that benefits the business process.
- ORSTATS and vUSA projects results in cost savings and this should be documented
- The real power in cost savings needs to be communicated to business process owners and they aren't present at this meeting
- Perhaps we can target an existing infrastructure or business process fee or group of fees?
- Do we know of successful examples in other states? Unfortunately, no..
- Data duplication, thus wasted funds, is still a big problem. Improvement in communication would provide tremendous benefits. Those benefits would manifest themselves as a reduction in the actual funds required for NavigatOR.
- Sustainability of funding would be increased with stronger Local Govt/Tribal roles.

Follow ups and Proposed actions:

- Identify existing fee programs where GIS can offer a service.
- Propose how we might help.
- Involve OGIC