

State of Oregon

GIS PROGRAM LEADERS (GPL) COMMITTEE

Date: Tuesday, November 14, 2023

Time: 1:30 – 3:30 pm

MINUTES (Final)

SCRIBE: Alex Petzold (OEM)

Introductions/Roll Call

DAS/GEO: Tom Elder, Willow Crum, Rachel Smith

Business Oregon:

DHS: Ismael Padin

DLCD: Tanya Haddad

DOGAMI:

DOR: Thom York, Phil McClellan

DSL: Randy Sounhein

Esri: Lacey Summers, Chris Marsh

INR:

ODA: Jenn Ambrose

ODEQ: Malavika Bishop

ODF: Arthur Rodriguez

ODFW: Jon Bowers, Chris Cowin

LPRO: Ariel Low

ODOT: Phil Smith

OEM: Daniel Stoelb, Alex Petzold

OHA: Eric Main

OMD:

SOS:

OPRD: Brady Callahan

OSFM: Cassidy Wood, Morgan Kee

OSMB:

OWEB: Paula Wills

OWRD: Bob Harmon, Tad Larsen

Announcements

Thom York: Cadastral FIT Survey: Reminder to complete by end of the month 😊 if using Parcel data. Link to Survey: <https://arcg.is/1Om0av>

Tanya Haddad (in chat): GIS Day: PostGIS thursday:

<https://www.crunchydata.com/community/events/postgis-day-2023>

GEO/OGIC Update

Rachel Smith, GEO

If you are a state agency participating in EA, renewal conversations have started. Looking to talk to participating agencies. The first meeting is scheduled for November 29th. The meeting will cover information about the current EA, list of potential changes, and open discussion/feedback from participants. Agenda will be shared. If you can't make the meeting but have specific thoughts, follow-up with Rachel.

OGIC Data Sharing Committee: Wrapped up Framework Data Inventory at October meeting. Moving toward consultations with data custodians to let them know OGIC is designating their datasets to be shared. Wrapping up draft communications and confirming contact information. Plan to start with datasets that are already publicly shared, and consulting with custodians. Start with informal communication- touch base with GIS manager/coordinator before formal communication to agency directors/managers.

OGIC Outreach Committee: Planned to use GovDelivery for communications- sending out quarterly newsletters but cannot use that application. OGIC plans to create a new listserv to create a targeted audience for OGIC meeting information and notices. Planning for quarterly newsletter to get word out about OGIC initiatives. Listserv coming, will hear more from Rachel in the next couple months.

Framework Update

Melissa Foltz, GEO

Thom - Big thanks and congratulations to Melissa for hosting a successful Fall Framework Forum.

2023 Fall Framework Forum Feedback Survey: <https://forms.gle/MzEh9s1QtS5WsXMY6>
Reminder to fill out the Survey to improve future Forums.

Cadastral List Serve: https://omls.oregon.gov/mailman/listinfo/cadastral_fit
New FIT ListServ, to provide communicate to a broader audience. Sign up if interested. All themes now have a listserv available and found on GEOHub.

Recreation Standard: <https://www.oregon.gov/geo/Pages/standards.aspx>
The Land Use Land Cover Theme has released the OR Recreation Standard for comment. Comments need to be in by November 20th.

Utilities FIT Lead: Looking for new FIT Lead for Utilities and Bioscience. Reach out to Melissa if interested.

OGIC Approvals in October:

1. OGIC Approved final Framework Inventory List

2. Recommendations for Grant Program: Working on implementing approved recommendations. Discussion of OGIC priorities and datasets most in need of improvements. Produced five Candidates of highly-desired and/or in need of improvement: City Limits, School Districts, Surveyed PLSS Corners, Transmission Lines, and Routable Street Centerlines.

FIT Leads moving out of planning stage to focus on themes this coming year. Currently developing program performance metrics to gauge progress. Performance Measures and Charter updates expected to be presented at January OGIC Meeting. For the remainder of the year they will be working on the Program wide work plan, implementing changes made for the grant program, and making plans for releasing the next RFP- which is still up in the air.

Daniel Stoelb (OEM) in chat- Just requested their PrepFIT members to list out their top three datasets for development of a stewardship plan. The goal is to use that to start work in developing the work plan for that group.

Melissa - Standards and stewardship plans are an area of interest and it's good to see it on the list.

ArcGIS Tool Development

David Howes, dhowes.com

Thom - David Howes is a regular at many of the local GIS conferences. He runs instruction courses and workshops on python and various ArcGIS tools. He aided ORMAP Tools Committee in transitioning editing tools from ArcMap to ArcGIS Pro. One of those tools, the ORMAP Arrows Tool, he will be presenting today. Editing is still mostly occurring in the Desktop applications, placing emphasis on the need to migrate present editing tools to ArcGIS Pro, and David will be talking about tool developing with ArcGIS SDK along with other ways to migrate tools to ArcGIS Pro.

David Howes – Developer, specialty in GIS tools, processes and supporting infrastructure. Established GISPD.com in 2014 for doing friendly and helpful things for GIS professionals.

Part 1: Add-In Characteristics and Development Considerations: Presentation to show some characteristics of ArcGIS Pro add-ins, explain how they are developed, and offer suggestions on development practices.

1. ArcGIS Pro SDK for .NET Overview: .NET is a Microsoft Technology, a framework for programming, including multiple languages and resources. SDK (Software Development Kit) is a collection of things to help develop software. In ArcGIS Pro, there are three ways to enhance value:
 - a. Configure the program via settings
 - b. Write Python and Arcade scripts or use Tasks
 - c. Customize the program using the ArcGIS Pro SDK for .NET

Benefits for using ArcGIS Pro SDK for .NET include streamlining workflows, provide or remove functionality, and enhance the user experience.

2. Add-in Examples:

Add-in functionality is packaged in a zip file (.esriAddinX extension). Double clicking the file will launch ESRI ArcGIS installation utility and the add-in is available next time ArcGIS Pro is launched.

- a. *Feature Navigation: Select* - Allows users to move from feature to feature and create definition queries more efficiently.
- b. *Address Editor: Ribbon Button* – Opens a form that allows attribute editing, Generates PDF Report, etc..
- c. *Address Points Manager: Define Working Points, Edit Point, Update Details* – Define a working point set by choosing points from map or using form to define settings and edit/create address points, etc.. Connected to Avalon address database that can be updated when committing edits.
- d. *Map Maker: Toolbar, Select & Add Layer, Find Address, Select Taxlots* – Custom toolbar for bringing together a collection of existing tools to streamline workflows. Allows user to select taxlots and create mailing lists.

3. Development Considerations

- a.
- b. Technology
 - i. Microsoft Visual Studio, an immense and powerful program developed for working with .NET framework. Can be used to view and develop ESRI code/libraries and includes templates for getting started.
 - ii. Microsoft Windows Presentation Foundation is a framework for developing graphical user interfaces (GUIs) that are compatible with Pro.
 - iii. Asynchronous Programming - Pro ensures that the user interface always remains responsive by running separate computer processes simultaneously (multithreading). Multithreading allows processes to be run simultaneously and in the background. The SDK has built in measures/blocks to prevent developers from impacting critical system/application processes.
 - iv. Desktop Application Markup Language (DAML) – XML like language that defines the pieces of Add-ins and how they fit together with main program. The DAML for ArcGIS Pro contains approx. 50k lines of code that are read and executed each time the application is launched in order to dynamically build the programs GUI. If you want to save time, never close the program 😊. Highly flexible and powerful that allows for customization.
- c. Necessity – Before developing using SDK, consider what options are available and if they can meet.
- d. Workflow Alternatives – Tasks, Web Application, ArcGIS Runtime applications. Runtime is replacing App Studio.

- e. Processing Options - .NET, Python (scripts), Models, Geoprocessing tools, and services. These can be used elsewhere, as opposed to locking everything up inside an Add-in.
 - f. ArcGIS Pro SDK for .NET cs ArcObjects – Objects capabilities are extensive, while Pro for SDK for .NET is less extensive, but a more intuitive development pattern.
 - g. E.g., City of Lacey Address Points Manager – Add-in uses a python toolbox for (tabular) database interactions.
 - h. Upgrading from ArcGIS Desktop – Desktop add-ins can't be used in Pro, you will need to rewrite from scratch. This can present an opportunity to rethink approach to meeting requirements given available options.
 - i. User Experience - How much experience in Pro will users have? How much ootb ArcGIS Pro functionality can be incorporated into the workflow? How much should be hidden?
 - j. Prevent Bad Situations –
 - i. Avoid situations that can lead to errors by considering edge cases
 - ii. Prevent user from removing, renaming, or altering required items
 - iii. Check for required objects on start-up
 - iv. Lock Down Functionality & Project Items – Consider how to enforce/preserve intended order of operations (events)
 - k. Working with Others' Code – Run away? Can be instructive, but sometimes may be better to start again.
 - l. Write "Respectable" Code
 - i. Error handling & messaging
 - ii. Intuitive and consistent variable naming conventions
 - iii. Optimize and comment code
 - iv. Move hardcoded data items into config class for easy updating
 - m. Roadblocks
 - i. What do you do if things that you thought would work don't?
 - ii. Practice healthy skepticism and paranoia (anticipate and allow for challenges)
 - iii. Test core parts before committing to a scope and budget
4. General Considerations
- a. Clarity and Simplicity – (Einstein quotes..) Consider those who will come after you when writing code.
 - b. Truth and Error – (Wilber Wright quotes..) Look for opportunities to learn when addressing errors.

5. Discussion

Thom – Is Visual Studio Code the free version of Visual Studio?

David – No, these are separate programs. Visual Studio Code is a lightweight code editor/ IDE built around the idea of extensibility through plugins.

The free version of Visual Studio is called Visual Studio Community Edition. I (David) use the Community Edition, but keep in mind, if you have several professionals using it you may require a license.

Thom – Is source/version control built into something like Code, or do you have one that you prefer?

David – Not an expert in code repositories like that, but they are all built-in nowadays. Visual Studio uses Microsoft Team Foundation.

Tanya Haddad (DLCD) – As part of the Framework Data development program, DAS paid for an ArcMap tool that helped users create metadata by hiding fields that weren't required. How difficult is it to take a tool like that and bring it into Pro?

David – In theory, it is pretty straightforward, but you don't want to be complacent about it.

Thom – Possibly a questions for GEO with the move to GEOHub and the framework work focusing on metadata. Having a tool to facilitate that effort would pay huge dividends.

Melissa (GEO) – I can look into it, talk to our data team and see. They may have had conversations on this topic. Will look into it and report back on feasibility and timeline.

Thom – As David mentioned in his presentation, the solution may not be a Pro Add-in, it may already be present in a tool, be a web-based interface included in data upload/delivery, but finding some way to automate that process would be beneficial.

6. Closing Considerations

- a. For certain use cases, the ArcGIS Pro SDK for .NET is a rich and powerful option for providing custom GIS functionality
- b. Apply respectful coding practices
- c. Keep up with the technology and ensure that what you need really can be done before committing to a project

Part 2: ORMAPP Arrow Tools ArcGIS Pro Add-In Development: Provide an overview of the ORMAPP Arrow Tools add-in along with considerations.

1. Task: Replicate ArcMap feature creation add-in functionality in ArcGIS Pro - Tool to aid in the creation and positioning of Arrows referencing distances in cadastral maps.
2. *Demonstration of the Arrow Tool add-in in ArcMap and ArcGIS Pro*
 - a. ArcMap Tool Characteristics
 - i. Intermediate dynamic graphics are created
 - ii. Geometry updated on mouse move
 - iii. On completion, line feature created using graphic geometry
 - b. ArcGIS Pro Tool Characteristics (Not able to apply ArcMap approach...)
 - i. Graphics created/modified in response to mouse *clicks*
 - ii. Context menus provide feature modification options
3. Tech Support Approach
 - a. Provide limited information- detailed explanation and instructions
 - b. Include demonstrations if possible
 - c. Be persistent
4. Investigation Approach – Ex. Double-Click Detection

- a. Reference source code for object handling behaviors
 - b. Create separate tool to track and log relevant events
 - c. Use the insight to address errors in a practical way
5. Discussion

Thom – Are the discussed issues actually bugs that will be addressed in application updates/revisions due to Pro being new software?

David – ArcGIS Pro is not new, and I suggest to folks still using ArcMap that they make the move to Pro. If issues were considered bugs, they would have/ should have been addressed in earlier updates. ESRI will likely not address issues unless they have a compelling reason to do so. They have a lot to deal with, it's a complicated program and we tend to find obscure use cases. All we can do is report issues.

Roundtable

Lacey Summers (ESRI) – ArcGIS Pro 3.2 is out. Informational links (via chat), feel free to reach out with any questions.

Blog: <https://www.esri.com/arcgis-blog/products/arcgis-pro/announcements/whats-new-in-arcgis-pro-3-2/>

Seminar: <https://www.esri.com/training/catalog/650b050eb3696c16ae50213c/whats-new-in-arcgis-pro-32/>

Ariel Low (LPRO) – Recently released a Story Map of Oregon's Older Adult Population from now through 2050, using PSU Population research Center data. Link (via chat):

<https://storymaps.arcgis.com/stories/508023e1a676447e8e1ca6ee6ec41e83>

Arthur Rodriguez (ODF) – Related to the presentation (by David Howes), we are instituting or facilitating the migration of ArcMap users to ArcGIS Pro. We're going to take the approach of drastically reducing available licenses. This way, ArcMap users with customized tools will still be able to use them.

Met with ESRI regarding the Velocity tool which works with real-time data feeds. We will start testing the tool- doing a trial. If any other agency is interested in pursuing this tool, please reach out.

Attended Landscape Resiliency Summit, a meeting by ODF, ODFW and OWEB, tribes federal agencies and non-profits. Ofocused on reducing admin boundaries between organizations and fuel treatments to reduce wildfires over the next 20 years. Now moving into GIS development stage, looking at accomplishments tracking. A common place where multiple agencies can post work related to grants and landscape projects. Please reach out if interested.

Jon Bowers (ODFW) – Has not received feedback concerning AGOL content curation. If anyone has any guidelines to help support user's stewardship of their archives of online content, please share (with Jon).

Tanya Haddad (DLCD) – Not sure if relevant. They (DLCD) had copied some what Josh Tanner had made while working for DAS GEO. It's not polished in terms of publishing. Would be beneficial to collaborate on something like this.

Jon Bowers – Not looking for anything polished, necessarily.

Bob Harmon (OWRD) via chat – Good GPL Discussion Topic

Thom Yorke – Yes, agree that this would be a good GPL topic worthy of a more thorough discussion. <Message passed to Daniel Stoelb (OEM) to consider for future agenda.>

Philip Smith (ODOT) – We have a document in draft. Agree about collaborating in GPL to reduce duplicate efforts.

Phil Smith (ODOT) – Continuing planning for enterprise migration. Any agencies that have done similar in recent past, please share along those lines.

Now finalizing their own SDK add-in development for Pro. Looking to majority of ArcMap users to Pro by Q1 2024, and those with more complex workflows by mid-year.

Eric Main (OHA) – Posting a position for a GIS Analyst. Position in environmental public health, knowledge of the built environment is a plus.

Bob Harmon (OWRD) – Concurrent license manager updated to handle Pro 3.x. The migration to Pro is going slowly with the need to rewrite ArcMap add-ins.

Meeting Adjourned.