

COEUR D'ALENE TRIBE INFORMATION TECHNOLOGY

GIS Program

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GIS Program plans for migration to web GIS

What is web GIS

Web GIS is a GIS system that uses web-based technologies. Essentially, it uses web communication technology as a link between the GIS server and the web client. This client is typically a web browser or mobile app created to use web communications. It can be used on any device, such as a PC, tablet, smart phone, or on any operating system, such as Windows, Linux, and on any of the mobile operating systems such as Android or iOS.

Web GIS one update works for all the clients.

GIS applications can be limited to a group within an organization, to an entire organization, or presented to the world with the proper authorization. There will be web-based tools for all users to create maps tailored to their specific needs.

Portal for ArcGIS

Portal for ArcGIS is a part of ESRI's evolving technology with the focus on **Web GIS**. **Portal** allows you to share data, maps, applications and other geographic information with other people in your organization or with proper authorization, outside the organization. The content you share is delivered through a website or mobile app. It is designed to expand the use of maps and GIS applications within an organization and with the rest of the world. Additionally, it reduces the need for custom applications built by programmers, allows for proper maintenance of all geographic data, and it provides a simpler way to define the rules as to who can access data.

Our goal is to migrate from **ArcGIS Desktop** to **Portal for ArcGIS** in 2015 for **most** users of GIS at the Tribe. There will always be a need

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Web GIS Advantage?

Unlike desktop GIS which uses high end, complex applications such as **ArcGIS Desktop** (ArcMap) on a high-end Windows workstation, **Web GIS** is intended for a broader audience. **Web GIS** is intended to be as simple to use as accessing a regular website. No extensive training is necessary as with ArcGIS Desktop.

ArcGIS Desktop is traditionally used by one person, whereas **Web GIS** can be utilized by dozens of users simultaneously.

Desktop GIS updates need to be installed on every computer running GIS software, whereas with

Web GIS Cont'd

for some users to have access to desktop GIS to perform analysis and custom mapping that can't currently be handled by **Portal**, but we're hoping to reduce that number of people to a small core of individuals.

ArcGIS Collector

ArcGIS Collector is a mobile application for Windows, Android and iOS smartphones or tablets.

This app allows you to collect and update information in the field. If you are not connected to the internet, you are still able to cache the data locally on the device, collect the data and then sync the data once you are reconnected to a network.

Collector allows you to load maps made in **Portal for ArcGIS** to your mobile device, and collect points, lines, and polygon features. Additionally, it allows

you to add other attribute information, and link attachments like photos.

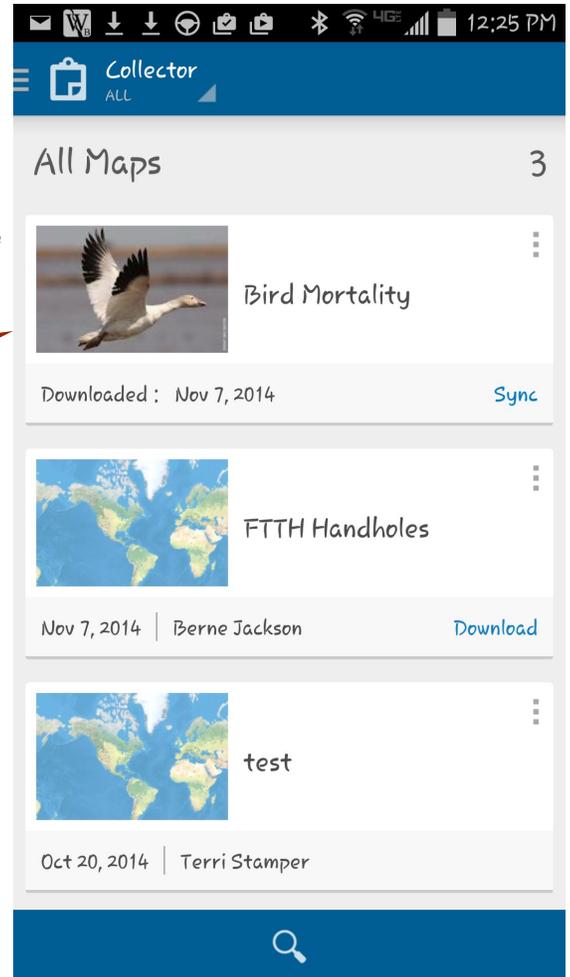
Right now, one of the system requirements in order to use ArcGIS Collector with Tribal data is some data preparation by the GIS Program. This may change in the

Screenshot of an Android smartphone with downloadable web-maps that are editable

future with new

capabilities that are coming.

If interested in more information on the ArcGIS Collector, please contact James Twoteeth, GIS Program Manager



Portal for ArcGIS and ArcGIS Collector Workshops

The GIS Program has conducted some workshops to assist current Tribal GIS users on how to access the Tribe's **Portal for ArcGIS**. We covered topics that included:

Maps vs. Web Apps

Requesting User ID's

How to create groups

Signing in to Portal

Portal functionality

How to create a map

Creating a web app

How to add data

Map Customization

Should you or your department or program be interested in attending a workshop, please contact:

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GIS Program Manager

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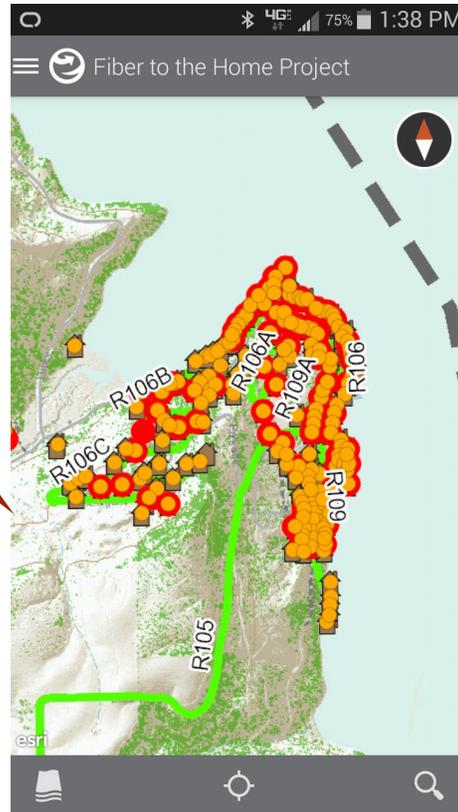
Web GIS Cont'd

Explorer for ArcGIS

Explorer for ArcGIS is a new **Web GIS** application from ESRI for Windows and Mac desktop computers and tablets, and Android or iOS smartphones or tablets. It lets you interact with our **Portal's** maps and data no matter where you are. Whether you are a seasoned GIS professional or have no prior GIS knowledge, you can become immediately productive with the app to make more informed decisions.

Screenshot of an Android smartphone with Explorer for ArcGIS

Screenshot of an Android tablet with Explorer for ArcGIS

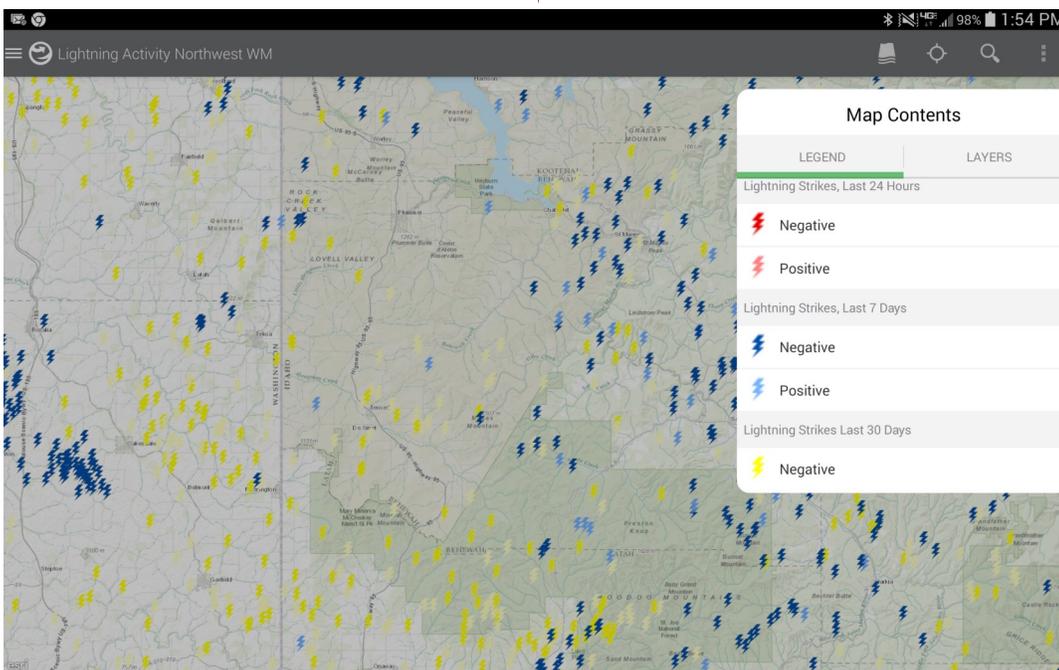


- Find, use, and share maps from your Windows, Mac, Android, or iOS device.
- Search for places and features in your map.
- Access and use maps authored by you or others

within our **Portal for ArcGIS** site or **ArcGIS Online (AGOL)** sites.

- Sketch on top of maps to highlight and share ideas with others.
- Tell stories and brief fellow employees and other groups with interactive map presentations.
- Map authoring on **Portal** and data editing will be available in future releases.

Both **Explorer** and **Collector** are a free installation from your devices app store. Just search for "**ESRI**" to find them.



Recent Projects

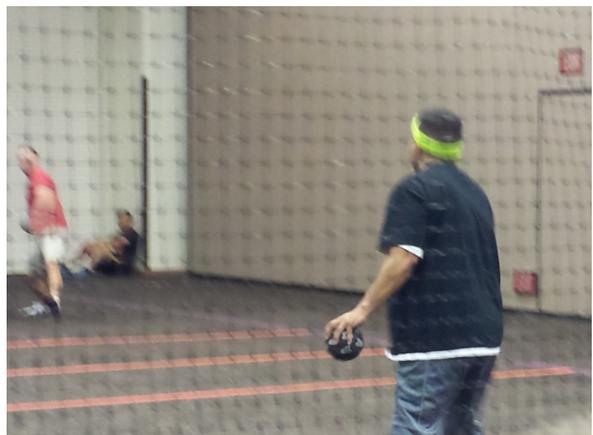
What have we been doing?

GIS Staff attend ESRI Developer Summit

James Twoteeth and Terri Stamper attended the 2015 ESRI Developer Summit held in Palm Springs, California. Dozens of technical sessions were offered daily. These sessions provide real skills for building applications for the web, mobile and desktop environments. Additionally, we got to witness and experience the latest technological advances in web mapping that directly relates to our **Portal for ArcGIS** site.

During the summit, we met up with representatives from other Tribe's GIS Programs. It was interesting to share the latest organizational developments along with some common issues.

After a week of attending intense work sessions, ESRI hosts a party at the end of the summit. The feature attraction is a Dodgeball Tournament. GIS folks representing Tribe's banded together and entered the tournament. Unfortunately, they didn't win, but it was a great time!



ArcGIS Pro

In April, James Twoteeth, Berne Jackson, Andy Schiley and Terri Stamper took a trip over to Olympia, Washington for a two day training session conducted by ESRI to learn the fundamentals of **ArcGIS Pro**. **ArcGIS Pro** is designed as the application for visualizing, editing, and performing analysis using local content, **ArcSDE** geodatabase data or data and maps from **Portal for ArcGIS**. ESRI is promoting **ArcGIS Pro** as the reinvention of desktop GIS, and the new central part of the ArcGIS platform. **ArcGIS Pro** organizes GIS work into projects, storing as many different maps (data frames in ArcMap) and layouts as needed versus creating a new map document in ArcMap for every different layout. It is the first 64 bit desktop application from ESRI and is also multi-threaded to perform different functions simultaneously. It also utilizes the computer's graphics card directly vastly improving drawing times. 3D functionality is now built in to **ArcGIS Pro** so no separate application is needed. A much more powerful workstation with many processing cores, lots of memory, fast drives and powerful graphics cards are required to run this new application.

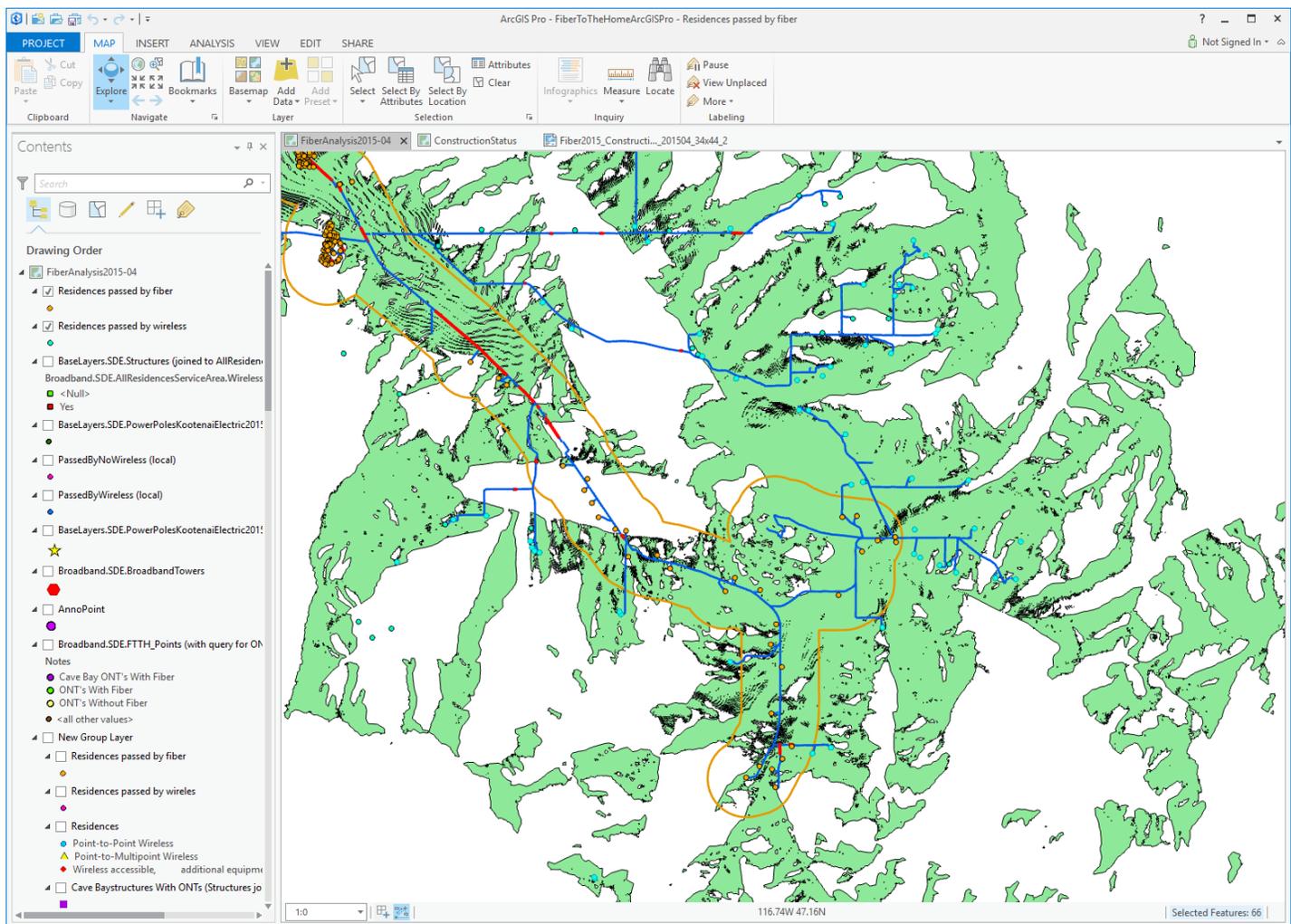
ArcGIS Pro provides some great functionality, such as sharing everything from entire projects including the data to maps, layers and tasks. Additionally, you can visualize your data in both

Recent Projects, Cont'd

2D and 3D, and open multiple maps at once to view them side by side.

So far, we have enjoyed the experience of using **ArcGIS Pro**, and are definitely impressed with its functionality and the speed with which it performs graphics and geoprocessing tasks.

The new interface that ESRI has designed for **ArcGIS Pro** is very different from the current **ArcMap** product. It uses the “ribbon” themed menuing and tabbed windows that can be dragged off the main application that has become popular in many recent Windows applications like Microsoft Word and Excel. It will take significant time to become familiar with this new interface, and



since the hardware requirements are so high for this application, **ArcMap** will remain one of the trusted tools in our GIS toolbox for the foreseeable future. However, we see a time in the next few years when **ArcMap** will be relegated to the “trash heap” of applications and **ArcGIS Pro** will be the norm for desktop GIS.



Recent Projects, Cont'd

Tribal offices and phones online

Sabine Krier has been visiting the Tribal offices to prepare floor plans and place each Tribal employee's location and phone number on maps which will eventually be turned into a web map for all employees to access and use. Another benefit has been that the data can be used for emergency planning, for example fire escape maps. The Tribal School included a set of maps like these in their emergency plans.

If any department would like a map of their building showing escape exits, contact Sabine at skrier@cdatribe-nsn.gov.

Land Buy-back Program

The Land Buy-back Program finished up this winter for the GIS Program. Berne Jackson provided data analysis and GIS/mapping support for this program through its beginnings about two years ago. Andy Schiley, the Tribe's Database Manager, has also provided web programming and database support.

Apps, maps and more

GIS has been asked to assist with many other tasks related to planning and displaying features on and around the Reservation.

Natural Resources has approached us for help with analyzing land cover distribution as it relates to fire protection. We have produced maps to insert into management plans and we are working on creating web applications to use for disconnected field data and photo collection.

Other Tribal programs and enterprises have called on us for maps they envisioned for upcoming events and/or **strategic planning**. We provide them in the requested format, from large for wall display to very small **paper maps**. **PDF or JPEG files** to be inserted into a Word document are also a common request.

There have been extensive **updates to the GIS database** ranging from **new soils** to **parcel updates from Benewah County** (Kootenai and Spokane County parcels are updated automatically weekly). **New road data** from the **Panhandle National Forests** have been integrated into our roads layer to bring these areas outside the Reservation up to date. There have also been extensive edits done to the roads within the Reservation.

New data for the **Fiber to the Home Project** was also obtained from the original engineers. This new data was a vast improvement over what we had before, but still needed significant updates to make it usable. Sabine Krier and Berne Jackson provide most of the mapping and data services for this ongoing project. Sabine also completed new line of sight analysis for the existing and planned broadband wireless towers. As an ancillary part of this project, our **Structures** layer has also been updated to provide a more accurate view of current residences and business.

Sabine Krier created new data to be used in the **CityLink bus routes maps** as well as provided field **GPS support** for Tiffany Allgood's monitoring wells project. She also was able to spend several weeks inputting **Land Services 2013 crop reports** into the Land Services database and the accompanying GIS layers.

Terri Stamper has been updating all of the old GIS websites worth updating and archiving old, never-used sites. She has also been the main administrator of our **Portal for ArcGIS** site and primary **JavaScript web map application** developer.

GIS Tips and Tools

How to upgrade to the recently released ArcMap 10.3.1

ESRI recently released ArcGIS 10.3.1. This is a full release of the ArcGIS platform. It includes new products, improved functionality, and stability improvements. For current GIS Tribal users, a new application called ArcGIS Pro provides new methods for editing, creating, and viewing maps, and is closely integrated with our **Portal for ArcGIS**.

We highly recommend the upgrade, and have provided a step by step process for upgrading. However, if you need the Pictometry toolbar extension, be aware that it is currently only available for ArcGIS versions 10.2.2 and below. Do not upgrade to 10.3.1 if you need this functionality.

What version of ArcMap do I have?

To find what version of ArcMap and the ArcGIS extensions that are installed on your computer:

1. Go to **Address Field in Windows Explorer** and type in:
2. [\\gis-ims2](#)
[\ArcGISInstall\ArcGIS10.3.1](#)
[\PatchesAndServicePacks](#)
3. Run **PatchFinder.exe**
4. If you have a **Pictometry Toolbar** extension installed. This will have to be uninstalled prior to ArcMap 10.3.1 installation.

Uninstalling a Pictometry extension

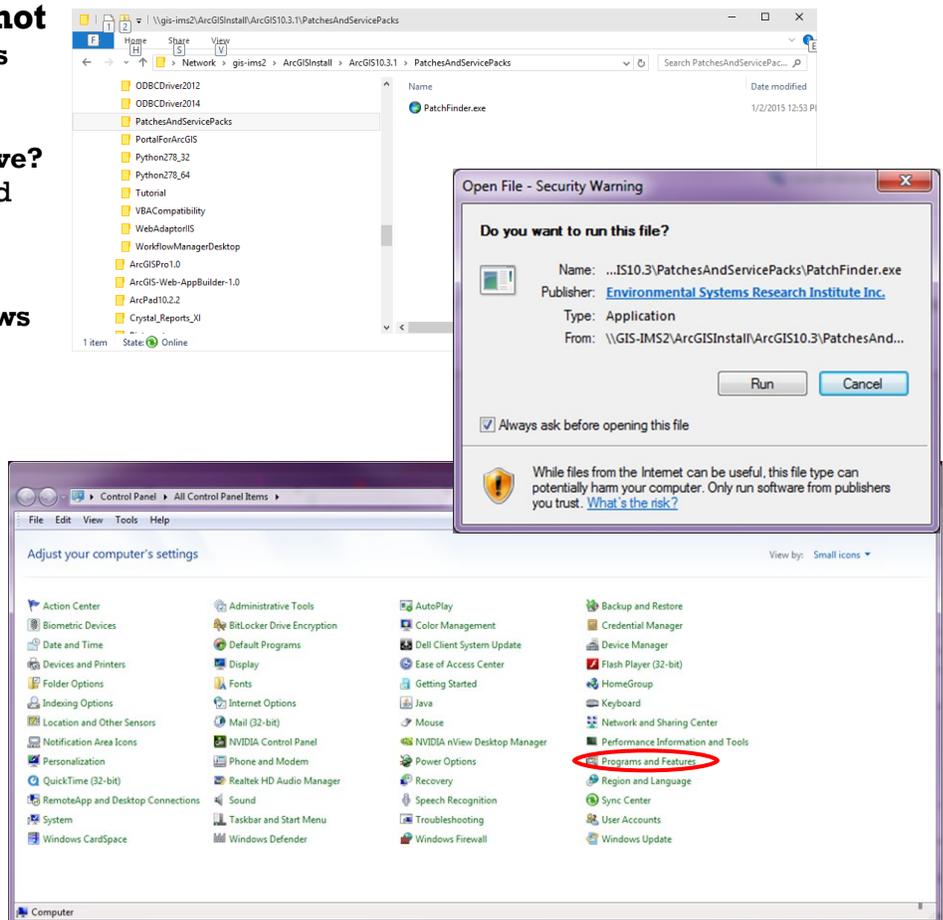
To uninstall Pictometry:

1. Go to the **Control Panel**

2. Set **View by** to **Small icons**
3. Go to **Programs and Features**
4. Find **Pictometry** under column **Name**, right click on it and choose, **uninstall**.
5. Choose to uninstall the application

Upgrading to ArcGIS 10.3

ArcGIS 10.3 setup package is designed to detect and upgrade an existing installation of the same ArcGIS product. *Existing ArcGIS 10.1-10.2.2 authorizations will work with ArcGIS 10.3*



GIS Tips and Tools

How to upgrade to 10.3.1, continued

The ArcMap 10.3.1 for Desktop includes several components that can be found at:

<\\GIS-IMS2\ArcGISInstall\ArcGIS10.3.1>

The setup files for ArcGIS 10.3 for Desktop is located in the **Desktop** folder. To install ArcGIS 10.3.1:

1. Open the **Desktop** folder.
2. Double click on **Setup.exe**.
3. When asked if you want to allow the ESRI program to make changes to your computer, click, **YES**.
4. Accept license requirements.
5. Follow instructions.
6. Accept the defaults.

An additional installation that may be needed by some Tribal GIS users is the **Desktop Background Geoprocessing** extension. This folder, DesktopBackgroundGP, is also located at:

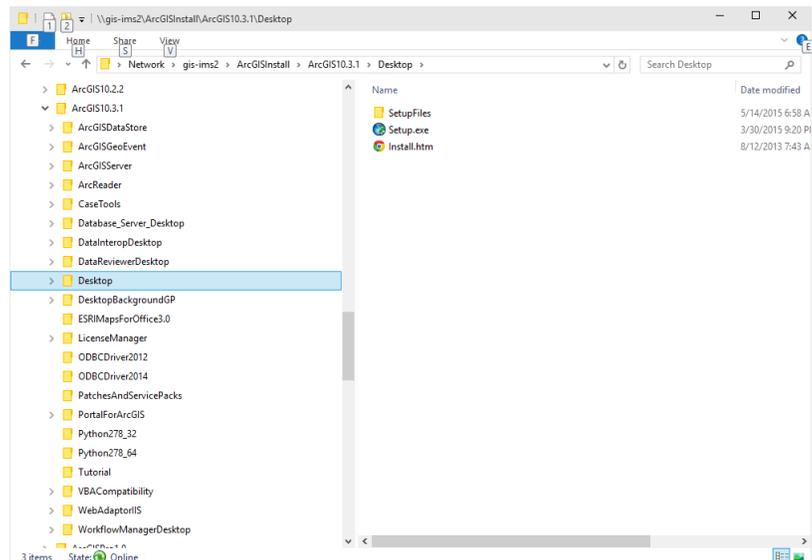
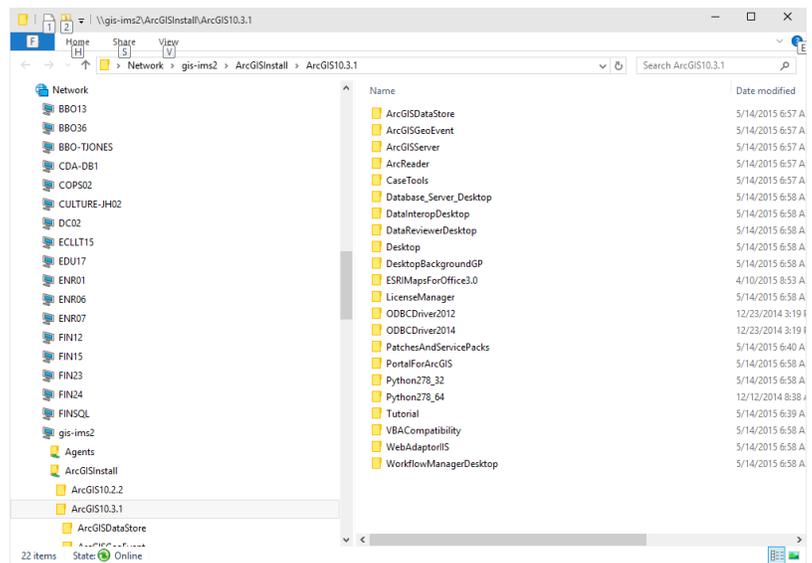
<\\GIS-IMS2\ArcGISInstall\ArcGIS10.3.1>

This component of ArcGIS 10.3.1 allows for background geoprocessing in 64-bit. For those GIS users that perform analysis using computer systems with large amounts of RAM, this extension may help when processing large amounts of data. To install this component:

1. Open up the folder **DesktopBackgroundGP**.
2. Run the **Setup.exe**.
3. When asked if you want to allow the ESRI program to make changes to

your computer, click **YES**.

4. Accept license requirements.
5. Follow instructions and accept the defaults.



Should you have any questions or problems, please do not hesitate to contact the GIS Help Desk @ 686-1279 or by email: jtwoteeth@cdatribe-nsn.gov

Contact us:

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GIS Help Desk: 208-686-1279,

gishelpdesk@cdatribe-nsn.gov

GIS implements new Help Desk system

The GIS Program has implemented “Track-It” workflow system to help manage and document GIS work and data requests. Briefly, all requests will formulate at the Help Desk, and if the GIS Technician is able to assist, they will do so; however, if they are unable to assist an email will be sent to the GIS Manager, who will then assign the work to other GIS staff based on the work requests level of complexity.

Please contact us with any questions or comments. If you have any GIS user questions for the next newsletter’s “Tips and Tools” section, please submit them.

GIS Program websites:

Internal: <http://intranet/Pages/GIS.aspx>

External: <http://gis.cdatribe-nsn.gov/>

Portal for ArcGIS: <http://gis.cdatribe-nsn.gov/ArcGISPortal>

GIS Trivia Quiz

A large-scale map depicts:

- a large amount of detail for a large amount of area
- a large amount of detail for a small amount of area
- a small amount of detail for a large amount of area
- a small amount of detail for a small amount of area

Which of the following are correct latitude and longitude coordinates?

- 110 degrees North, 78 degrees East
- 110 degrees East, 78 degrees North
- 45 degrees South, 120 degrees East
- 60 degrees South, 123 degrees North

Which of the following correctly lists the four main sources of distortion in flat maps?

- area, direction, latitude, longitude
- area, shape, distance, direction
- conformality, equivalence, direction, symbology
- graphics mercator, charts, themes

The first step in developing a GIS is to create a digital record of geographic information commonly known as a:

- digital depository
- geographic database
- computerized repository
- geofile

Trivia Quiz answers:
• a large amount of detail for a small amount of area
• 45 degrees South, 120 degrees East
• area, shape, distance, direction
• geographic database