GIS – How Does It Work?

GIS software is designed to capture, manage, analyze and display all forms of geographically referenced information.

GIS software helps us answer questions and solve problems by looking at our data in a way that is quickly understood and easily shared on a map.
GIS – What Is It’s Purpose?

- To Lets Us Visualize
- To Lets Us Question
- To Lets Us Analyze
- To Lets Us Interpret
- To Understand Relationships, Patterns & Trends In Form Of Maps, Globes, Reports and Charts

NAVAJO NATION JUDICIAL DISTRICT BOUNDARIES
24 DELEGATE VOTING PRECINCT

PROPOSED LAND EXCHANGE – WINSLOW TRACT, RED GAP AND TWIN ARROWS
GIS – What Does It Provide?

- Cost Savings From Greater Efficiency
- Improve Communication
- Better Decision Making
- Better Record Keeping
- Managing Geographically

What Process Do We Apply GIS To Organization Problems That Requires A Geographic Decision:

**Ask** - What is the problem we are trying to solve or analyze, and where is it located?

**Acquire** – We need to find the data needed to complete our project.

**Examine** – We only know if the data is appropriate for our study after thoroughly examining it. This includes how the data is organized, how accurate it is and where the data came from.

**Analyze** – Geographic analysis is the core strength of GIS and utilizing appropriate tools we can make changes and create new outputs.

**Act** – The results of our analysis can be shared through reports, maps, tables, charts and be delivered in printed format or as a digital file.
GIS – Development and Use

● What Type Of GIS Data Do We Have
● Where To Acquire GIS Data
● How We Work With Chapters
● What We Want To Do With GIS In The Future

TYPE OF GIS DATA WE HAVE

**Boundaries:**
- Navajo Nation Executive Orders
- Navajo Nation Grazing aka Chapter Boundaries
- Navajo Nation Census, Political & Communal Boundaries
- BRLC (Biological Resource Land Clearance/RCP)
- NIIP/NAPI Boundaries
- Hopi/Paiute – Other Surrounding Tribes
- Proposed BIA Cadastral Chapter Grazing Boundaries
- Navajo Nation Park Boundaries
- Navajo Nation Ranches – AZ/NM

**Land Parcels:**
- Homesite Leases (In-Development)
- Parcel Tract Description (San Juan, Apache County)
- Some Land Withdrawals/Business Leases

**PLSS (Public Land Survey System):**
- Cadastral Automated Request System (CARS)
- Apache/Bernalillo/Cibola/Cochise/Mckinley/Navajo/Rio Arriba/San Juan/Sandoval/Socorro/Valencia/Yavapai

**Utilities:**
- NTUA Utilities – Electric, Gas, Water & Wastewater
- CDEC/Cuba West/City of Farmington/Socorro Electric
- APS (Arizona Public Service)
- Navajo Nation Oil & Gas Pipelines

**Roads:**
- NDOT Roads
- BIA Roads
- State Roads
- NMDOT

**Landstatus:**
- Navajo Nation/ENA Landstatus (Revision In Process)
- Big Bo
NAVAJO NATION GRAZING BOUNDARIES (?)

NAVAJO NATION 1978 CENSUS COMMUNITY BOUNDARIES (A-CV-19-77)
PROPOSED BIA CADASTRAL CHAPTER GRAZING BOUNDARIES

WHERE TO ACQUIRE GIS DATA

Utilities Data
- NTUA
- Continental Divide Electric Corp.
- APS
- RGIS – New Mexico

Road Data
- NDOT
- BIA Roads
- State (AZ,NM,UT)

PLSS
- http://www.geocommunicator.gov/geocomm/lsis_home/home/

Aerial Imagery
- ESRI Website
- NAIP (ArcMap)
- TOPO

Census
- US Census Tiger Data

Water Wells
- NOWR
HOW WE WORK WITH CHAPTERS

• Provide Maps
• Adding Necessary Data to the Map of Individual Chapter
• GIS/GPS Training
• Assist with Community Land Use Planning
• Utilizing Google Earth Pro (https://earth.google.com/)
• Utilizing All Topo V7 Pro (Four Corners)

LAND USE PLANNING
DATA CONVERSION TO KML/KMZ OR ArcGIS

ArcMap Document

Google Earth

UTILIZING GOOGLE EARTH
WHAT WE WANT TO DO WITH GIS IN FUTURE

- Plot all finalized Homesite Leases
- Plot all finalized Business Leases
- Establish Rights-of-Way corridors for all existing utilities and roads
- Finalize Land status
- Become the Leaders in GIS
NAVAJO NATION HOMESITE MAP
(PROJECT IN DEVELOPMENT)

WINDOW ROCK ADMINISTRATIVE AND BIA RESERVE