

Using Geographic Data & GIS for Decision-Making in Tribal Child Welfare

How Can Geographic Data Be Useful in Child Welfare Practice?

Maps make data visual and relatable. This visual presentation can help child welfare programs:

- make better decisions about where to place children
- determine where to target foster family recruitment
- show the impact of decisions over time
- share with funders, Tribal leaders, and other Tribal departments to help with their decision-making.

Today, technology allows us to easily record large quantities of geographic information, and tools like Geographic Information Systems (GIS) help us learn more from it. *Any federally recognized Tribe can get GIS software and training through the BIA free of charge.* The GIS mapping program analyzes and displays all forms of geographically referenced information (e.g., addresses, Tribal boundaries, and resources). For an introduction to GIS and its applicability to Tribal child welfare, see [Mapping to Protect Children & Preserve Communities](#). A full list of free data resources and links are included below in Publicly Available GIS Data Sources and Training.

Indigenous Connection to Place

Native cultures have a natural connection to geography that comes from strong historical and spiritual connections to indigenous homelands. Native people have recorded information about time and place for thousands of years in art, ceremony, and storytelling.

Connecting Place to Decision Making

Everyone has their own personal geographic understanding, or “mental map” of their community. Mental maps could include the location of children in care, homes where child protective services has been called, or distances to services, schools, or family members. These locations might be known in a worker’s mental map, but it may be hard to communicate what someone innately knows about the geography of their work to others in their office, community partners, or Tribal leadership. Using GIS provides a way to visualize and communicate the information we have gathered in our mental maps. When information is visualized and shared, it creates a new set of questions around geography that may not have been previously asked.

Developing Geographic Questions

Once data is on a map, patterns begin to emerge. These patterns will begin to form a new set of questions. When child welfare data is mapped, program staff may begin to ask:

- Are we getting a lot of referrals or reports in one area or part of the community? Why?
- Are there preventative services that we can provide in a certain part of the community?
- Where are foster parents most needed? Where are they most available?
- Are children placed close enough to their families, schools, and community or cultural resources?

There are numerous other questions that may arise once data is visualized and displayed on maps.



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Geographic Data

Once child welfare data has been mapped (i.e., location of referrals, location of resource homes, location of foster children), other data will then be needed to help understand its significance. This data may include addresses, nearby landmarks, Tribal enrollment data, service provider locations, city, or zip code. This information seems routine when it exists in a spreadsheet or a paper file, but interacting with child welfare data on maps allows us to see patterns in where things are and how these patterns change over time.

Using Geographic Data for Decision Making

Once a program has asked geographic questions and have established the data types and data sets of the geographic data needed, they can be analyzed as layers of a map in a GIS (see the GIS Glossary of Terms below).

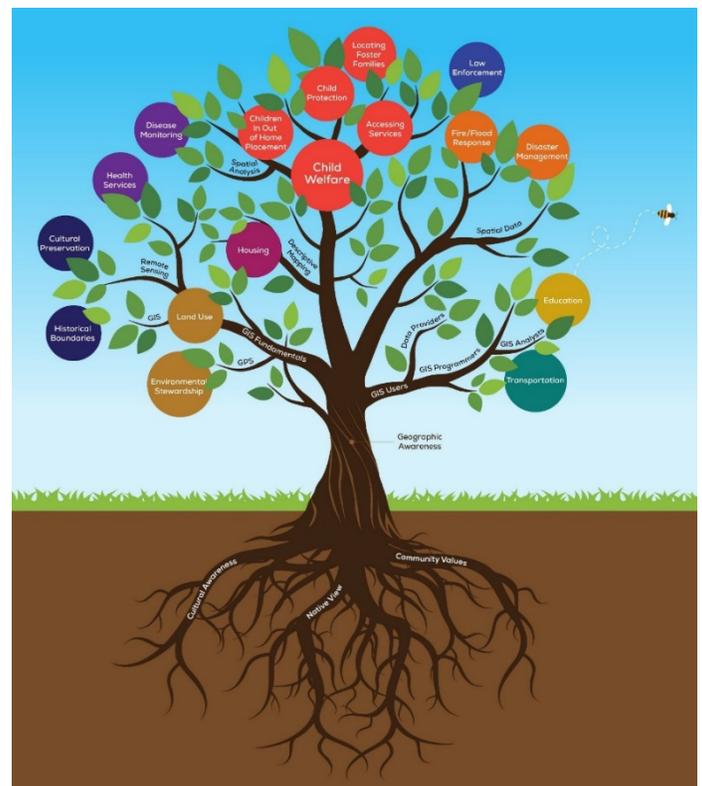
For example:

1. Start with a layer of polygon data showing reservation boundaries
2. Add a layer of point data showing where various services are located
3. Add another layer of line data showing transportation routes
4. Finally, add a layer showing where our children in foster care are currently placed, and we can get a better picture of how well they can access the services they need.

This spatial analysis can help a program easily understand and answer the questions they have asked. This can help make better decisions about where to place children, where

to target foster family recruitment, and show the impact of those decisions over time. Maps can also be shared with funders, Tribal leaders, and other Tribal departments to help with their decision-making.

Geography can connect many Tribal departments, including child welfare, health services, behavioral health, cultural preservation, housing, land use, law enforcement, disaster management, education, and transportation. The linking of geographic data from multiple departments can allow more powerful spatial analysis that benefits the Tribal community as a whole.



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Next Steps to Getting Started with GIS

If you're interested in adding geography to the way you look at your data, here are a few steps to get started:

- Discuss what you want to learn from geographic analysis (your geographic questions)
- If your Tribe has a GIS analyst, make contact with that person or department to see if they can help. Your Tribe's GIS department may be used to dealing with land management issues, so be prepared to educate them on social services!
- If you or one of your staff members are interested in learning to use GIS, see our GIS Resource List for links to data and training resources. *Remember that any federally recognized Tribe can get GIS software and training through BIA free of charge.*
- Check your program data for geographic data elements like addresses or zip codes. Think about what other data you might need to answer your geographic questions and where you could get that data. Develop a plan for reaching out to other Tribal departments who have data that could help your geographic analysis.
- Consider your Tribe's or program's rules around data security and confidentiality. You may need a data sharing agreement before sending your program data to a GIS analyst, or before receiving data from another department. You also may need to protect any potentially identifiable information in maps you intend to share. When addresses are displayed on a map, someone might know who lives at one of those addresses, which may violate the privacy of the child or family.
- Contact the Center for Tribes for more information and technical support.

GIS Glossary of Terms

Geographic data are displayed on maps in **layers** through **points**, **lines**, and **polygons**.

Data Layers – Different sets of data, or layers, can be combined into a GIS to create a more informative map. We can use sets of data we have, create new sets, or get data sets from other Tribal departments or online resources (e.g. census.gov, data.gov, BIA.gov, and other local resources from states and universities).

Point Data – Exactly how it sounds! Point data are just points on a map. A point could be a city at one scale or a house at another scale. Examples of point data could include where foster children are currently placed; where different types of services are located; or the addresses of available foster families.

Line Data – Typically, line data show roads, trails, rivers, or anything in a continuous line.

Polygon Data – "Polygons" are boundaries, like reservation boundaries, town boundaries, school districts, aboriginal territories, or state lines.



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Publicly Available GIS Data Sources and Training

Geographic Data

The following resources offer free geographic data files to use in GIS:

ArcGIS Online Data - ESRI Maps and Data

<https://www.arcgis.com/home/group.html?id=1d1f24e8556642f49448f1c88b5a571b&start=1&view=list&sortOrder=asc&sortField=title#content>

Bureau of Indian Affairs (BIA)

<https://www.bia.gov/gis>

Free to federally recognized Tribes. For more information, contact the Branch of Geospatial Support Help Desk at geospatial@bia.gov or 1-877-293-9494.

Centers for Disease Control and Prevention

<https://www.cdc.gov/gis/resources.htm>

Data.gov

<https://www.data.gov/>

National Aeronautics and Space Administration (NASA)

<https://data.giss.nasa.gov/>

National Cancer Institute – Geographic Information Systems and Science for Cancer Control

https://gis.cancer.gov/tools/data_sources.html

The Science Education Resource Center at Carleton College: State GIS Resources

https://serc.carleton.edu/NAGTWorkshops/gis/state_resources.html

U.S. Census Bureau

<https://www.census.gov/geo/maps-data/data/tiger.html>

U.S. Geological Survey (USGS)

<https://www.usgs.gov/products/data-and-tools/gis-data>

GIS Training

The Branch of Geospatial Support provides free GIS training to employees of federally recognized Tribes. For more information, contact the Branch of Geospatial Support Help Desk at geospatial@bia.gov or 1-877-293-9494. Visit: <https://www.bia.gov/gis>

There are several ESRI® online GIS courses available, at no cost, through the current Enterprise License Agreement (ELA) between ESRI® and the DOI. Visit: <https://www.esri.com/training/>



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