



(Global) Geographic Information Systems (GIS) including GPS

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Goals

- Definition

- **Geographic Information Systems (GIS)**

- What it is?
 - A graphic way of displaying information
 - Why it's important?
 - Centralizes data and quickly displays potential conflicts
 - By combining data and applying some analytic rules, you can create a model that helps answer the question you have posed



Use at Fermilab

- Overview
 - **Utilities**
 - Water, Sanitary Sewer & Storm Sewer
 - Industrial Cooling/Fire Protection & Gas
 - Power & Communication
 - **Property & Land Usage**
 - Buildings & Subterranean Structures (Enclosures)
 - Surface Ponds, Drainage Ditches & Creeks
 - Environmental and Land Management
 - **Future Role**
 - Document Retrieval
 - Electronic Excavation Permitting



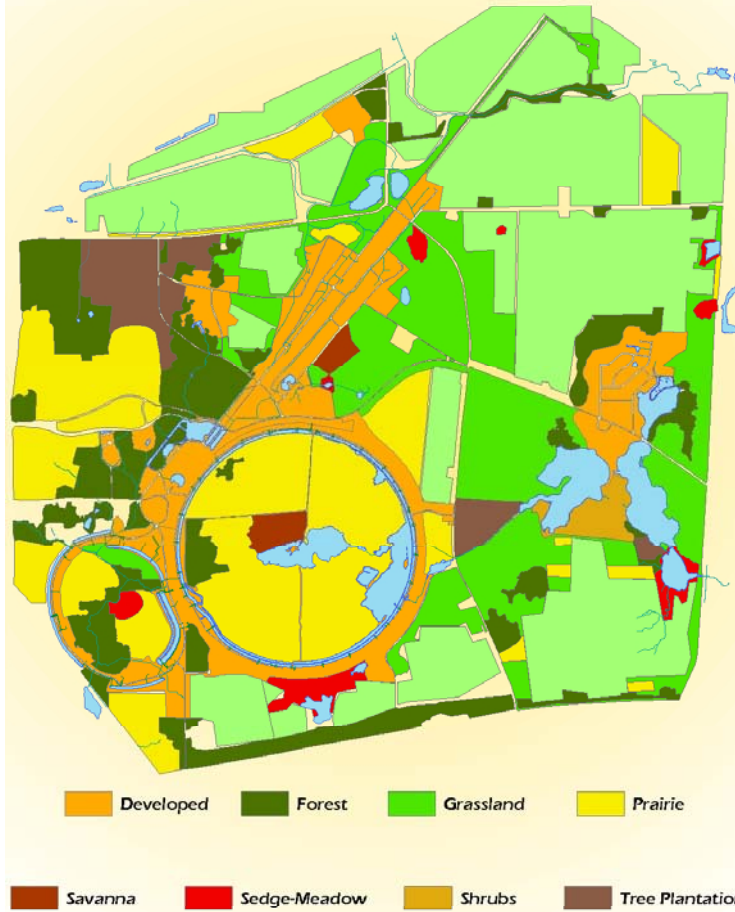
Tools

- GIS and GPS
 - **GIS - ESRI** www.esri.com
 - ArcIMS (Web access)
 - ArcGIS (Desktop editing software)
 - AutoCAD (Map)
 - Future ArcSDE with Oracle (Managing Spatial Data)
 - **GPS – Leica** www.leica-geosystems.com
 - GPS Rovers (Receivers) 1200 series
 - GPS Base Station 500 Series
 - Base Station part of CORS (Continuously Operating Reference Station) National Geodetic Survey
 - *Leica SpiderNET Software*



Why it is important...

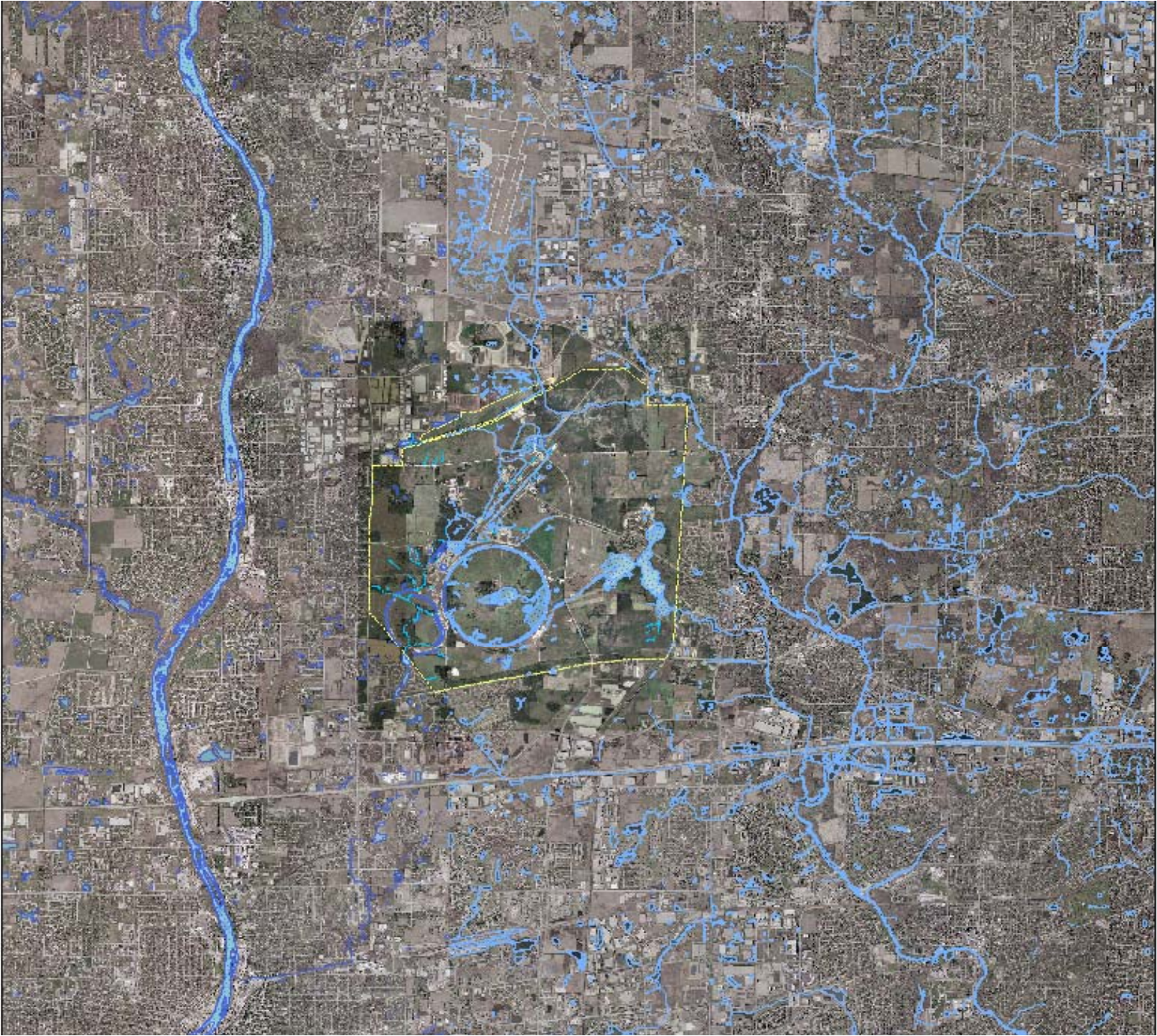
Habitat Regions of Fermilab





- Demonstration

<http://fessgis.fnal.gov/fessgis/main/index.asp>



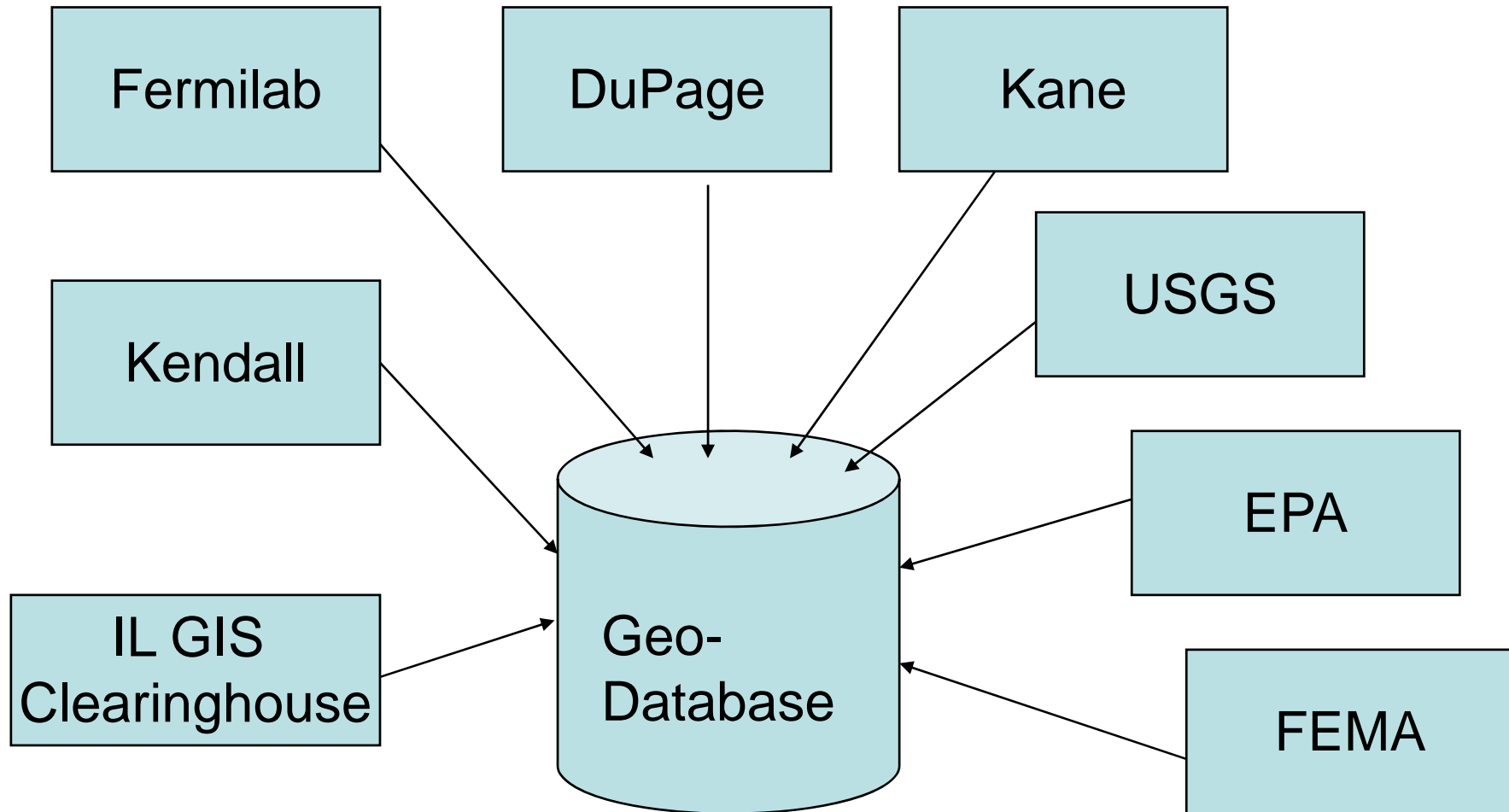


Cooperative Arrangements

- City of Batavia
 - **Fire Department**
 - **Engineering Department**
 - **Information Systems**
- DuPage County – GIS Department
- Kane County – GIS Department
- Illinois GIS Association
- Northern Illinois University - Department of Geology and Environmental Geosciences



Potential Sources of Data

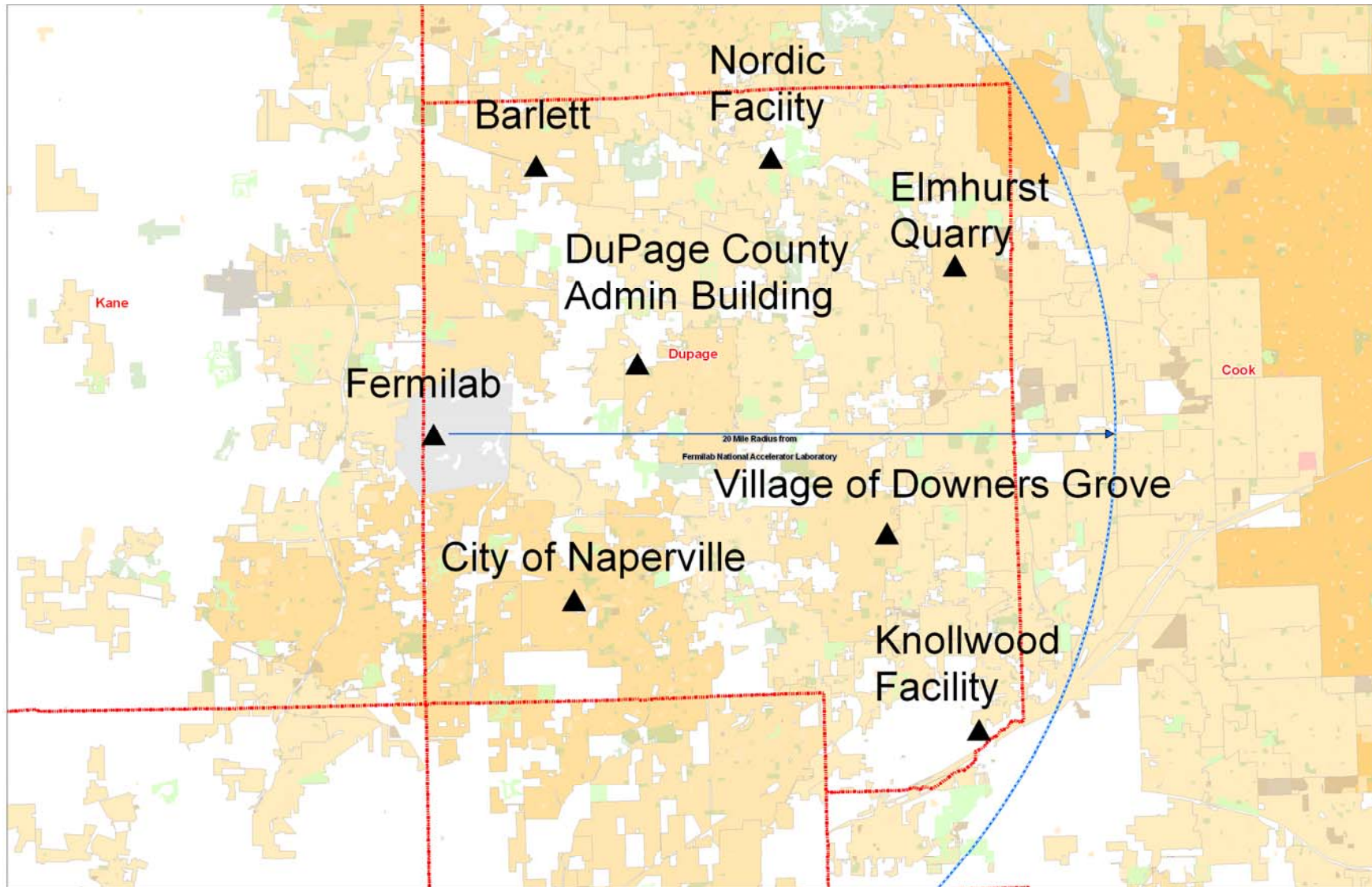


- **Definition**
 - **Global Positioning System**
- **What it is used for?**
 - **Accurately locates features in relationship to the earth as represented by a map**
- **How it works?**
 - **Features are located by triangulating positions from at least three satellites at known positions above the earth**





Why it is important...





Why it is important...

