PALMS GIS Software

IntelliDyne's newest offering, PALMS (Polygon Alignment for Layered Map Systems) GIS Software, alleviates the burden in traditional GIS software and analysis. Our team develops custom layered applications that transform legacy geographic datasets into actionable information by incorporating automation, Artificial Intelligence (AI), and Machine Learning (ML). The robust front end integrates complex inputs with stunning visuals and Business Intelligence (BI) dashboards. PALMS delivers these functionalities, and much more, **without the need for ArcGIS licensing.**

GIS Empowers Innovation Across Industries

Organizations that integrate and optimize GIS data alongside business data, goals, and objectives gain a powerful competitive advantage. By unifying these data sets, they achieve end-to-end accuracy that enables data-driven decisions, delivers actionable outcomes, reduces costs, and conserves resources because they now have robust, reliable information. PALMS analyzes information about land, census data, historical occurrences, and thousands of other data sets.

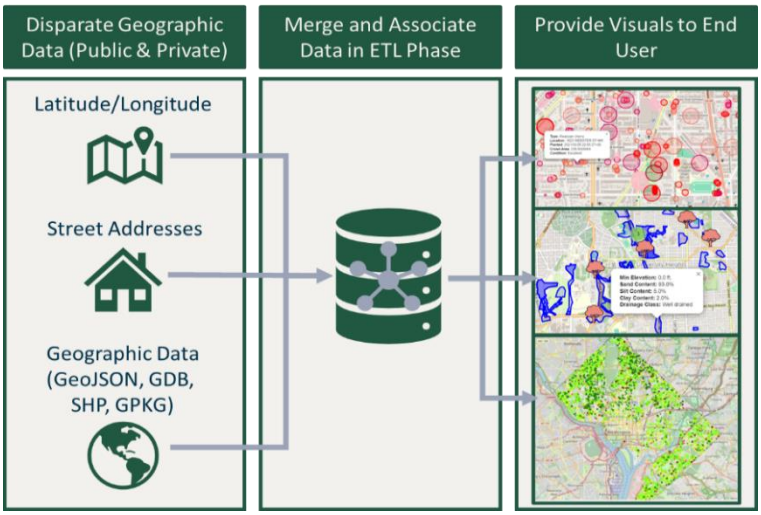
- **Government** (harsher areas on roads, water, and sewage based on USGS and USDA data)
- **Construction** (foundations, required land prep, drainage, etc. based on USDA soils)
- **Gas, oil, and mining** (locating minerals based on geological surveys)
- **Agriculture** (identify potential farmland and what crops would excel, see next page)
- **Insurance and Real Estate** (underlying risks to property based on Census and soil data)

Challenges of GIS Software

Organizations rely on manual, point-by-point visual analysis when working with GIS data. PALMS solves this challenge with AI- and ML-based tools that seamlessly integrate and analyze disparate datasets. This means that employees must manually inspect and verify data points to ensure accuracy. These methods are time-consuming and prone to human error. GIS data, with its varied formats, projections, and scales, complicate business objectives and hinder progress. Many organizations lack access to advanced GIS software, or the expertise required to implement automated solutions, leaving them dependent on visual analysis to identify patterns, discrepancies, and relationships within the data. This manual process is labor-intensive and limits the ability to quickly adapt to more efficient and modern insights.

Transforming Data

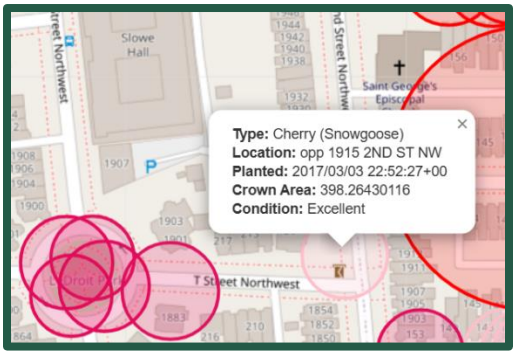
PALMS ingests a range of geographic data from structured GIS datasets such as GeoJSON or GDB files to text-based street addresses. Our solution intakes disparate data and creates a fully associated and accurate dataset. PALMS then creates interactive applications allowing users to leverage the modernized data with ease. Through clear, user-friendly design and powerful functionality, PALMS integrates private and public data into a unified system that empowers clients to apply GIS insights to their specific objectives and mission-driven priorities. **PALMS delivers critical insights and powerful automations seamlessly across a range of geographic data.**



IntelliDyne LLC | 1950 Old Gallows Road, Suite 750 | Vienna, VA 22180 | 703.575.9715 | intellidyne-llc.com |
For more information visit PALMS.intellidyne-llc.com or email ITDCapture@intellidyne-llc.com

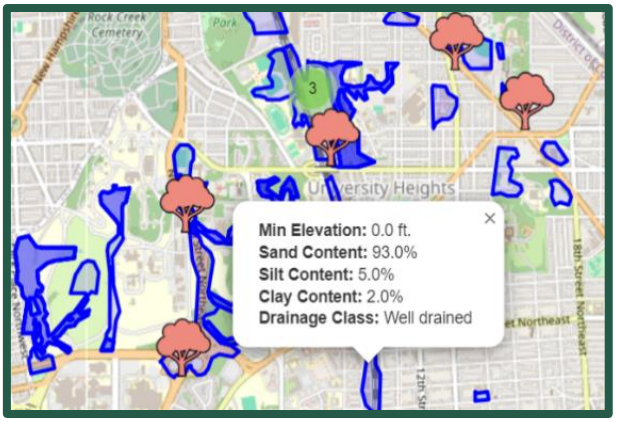
Washington, D.C.'s Cherry Trees, Recognizing A National Heritage

In 1912, the Mayor of Tokyo, Yukio Ozaki, gifted Cherry Trees to Washington, D.C. Each spring, millions gather for the National Cherry Blossom Festival, a vibrant symbol of international goodwill and timeless cultural heritage.



Using our PALMS GIS Software, we visualize these trees across the city. Their aesthetically stunning white, yellow, green, and all shades of pink blossoms, share their beauty with the world for only a few short days. Public data from the Urban Forestry Division allows us to map the species and location of local cherry trees with the radius based on tree size. Users click on any details such as type, address, and when the tree was planted. PALMS is fully customizable with control over color, radius, popup, and all visual elements. Integrated custom markers, layers, and multiple inputs allow numerous modes of interactivity beyond traditional mouse clicks.

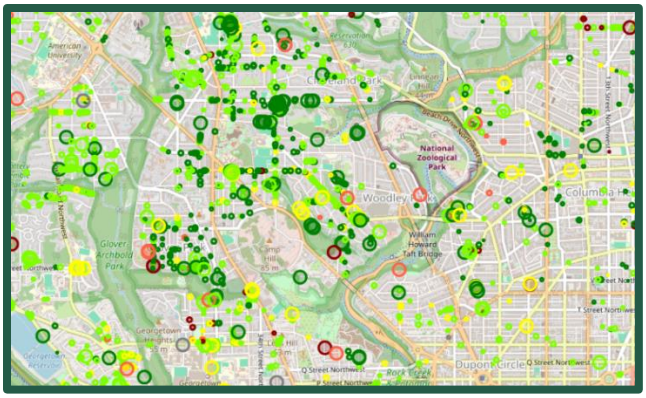
PALMS Saving the Cherry Trees: Rising sea levels around Washington, D.C.'s Tidal Basin, and the threat of flooding from the Potomac River have endangered at least 160 cherry trees, and the risk increases daily. **PALMS is here to help.**



PALMS incorporates multiple layers and evaluates intersections. We imported the USDA soil survey and identified the low areas at risk for higher sea levels (in **blue**). We then identified all trees within those polygons and displayed them as a layer on top. The potential rise in sea level is adjustable with a slider allowing users to see impacted trees as they slide across multiple values. Traditionally this is done with manual analysis area by area or tree by tree. PALMS performs these calculations rapidly and across multiple complex datasets simultaneously.

PALMS ability to accurately identify the correlations between GIS datasets is **unparalleled**. Most mapping tools can show you layers of data, but we go further by combining those maps with advanced analytics and automation to make insights easier to see and act on. For example, the USDA collects thousands of data points about every soil type in the U.S. Rather than asking users to dig through that overwhelming level of detail, our system automatically connects those soil factors to other data. In this case it was the health of more than 35,000 cherry trees in the Washington, D.C. area, but could serve a range of predictions. Normally, this amount of information would be too complex for traditional GIS tools. But with **augmented analytics**, PALMS quickly analyzes it, detects patterns, and even trains custom models to predict tree health. What once took hours of manual analysis is now automated, reducing the burden on the user and empowering them with clear, actionable insights.

Model	Accuracy
K Nearest Neighbor (K=3)	96.0%
Decision Tree	96.7%
Neural Network	96.6%
Adaboost	96.6%



The result? Users spend less time wrestling with data and more time making better, faster decisions.

IntelliDyne LLC | 1950 Old Gallows Road, Suite 750 | Vienna, VA 22180 | 703.575.9715 | intellidyne-llc.com |
For more information visit PALMS.intellidyne-llc.com or email ITDCapture@intellidyne-llc.com