

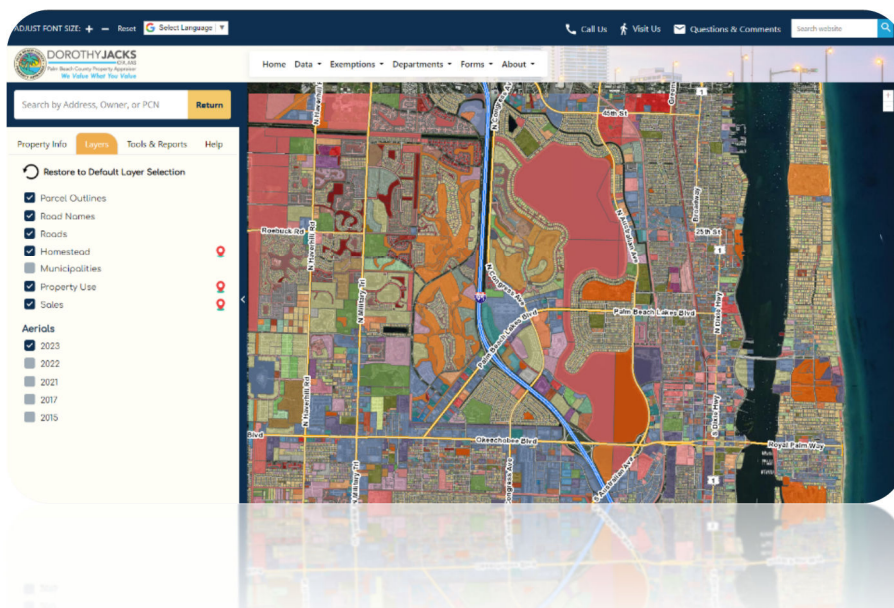
Abstract

The Property Appraiser's Office (PAO) of Palm Beach County (PBC) is one of the industry's most prestigious jurisdictions, setting a global standard for top-tier leadership and innovation. These high standards are reflected in its working environment, as PBC's own Information Systems Services in GIS (ISS-GIS) was entrusted with the task of producing a customized and redesigned GIS Base Map web mapping application, a key component to the award-winning Property Appraiser's Public Access (PAPA) website, which is PBC's most reliable source of accessible property data available to the public. With several features, including customizable printing, selection tools, measurement tools, buffering, and report generation tools, the newly established PAPA GIS Base Map web application was created to uphold the success of the Property Appraiser's Office of Palm Beach County. The construction of the web application began on November 29, 2022, and was officially released to the public on February 1, 2024.

The Problem or Need for the Program

As more and more residents move to Palm Beach County and the surrounding areas, there is a demanding obligation to receive precise and accurate property information. This surge in demand has presented itself as an obstacle for The Property Appraiser's Office (PAO) of Palm Beach County (PBC), which accurately maintains this information to certify the smooth functioning of Palm Beach County's property market to ensure transparency and fairness in accordance with Florida law.

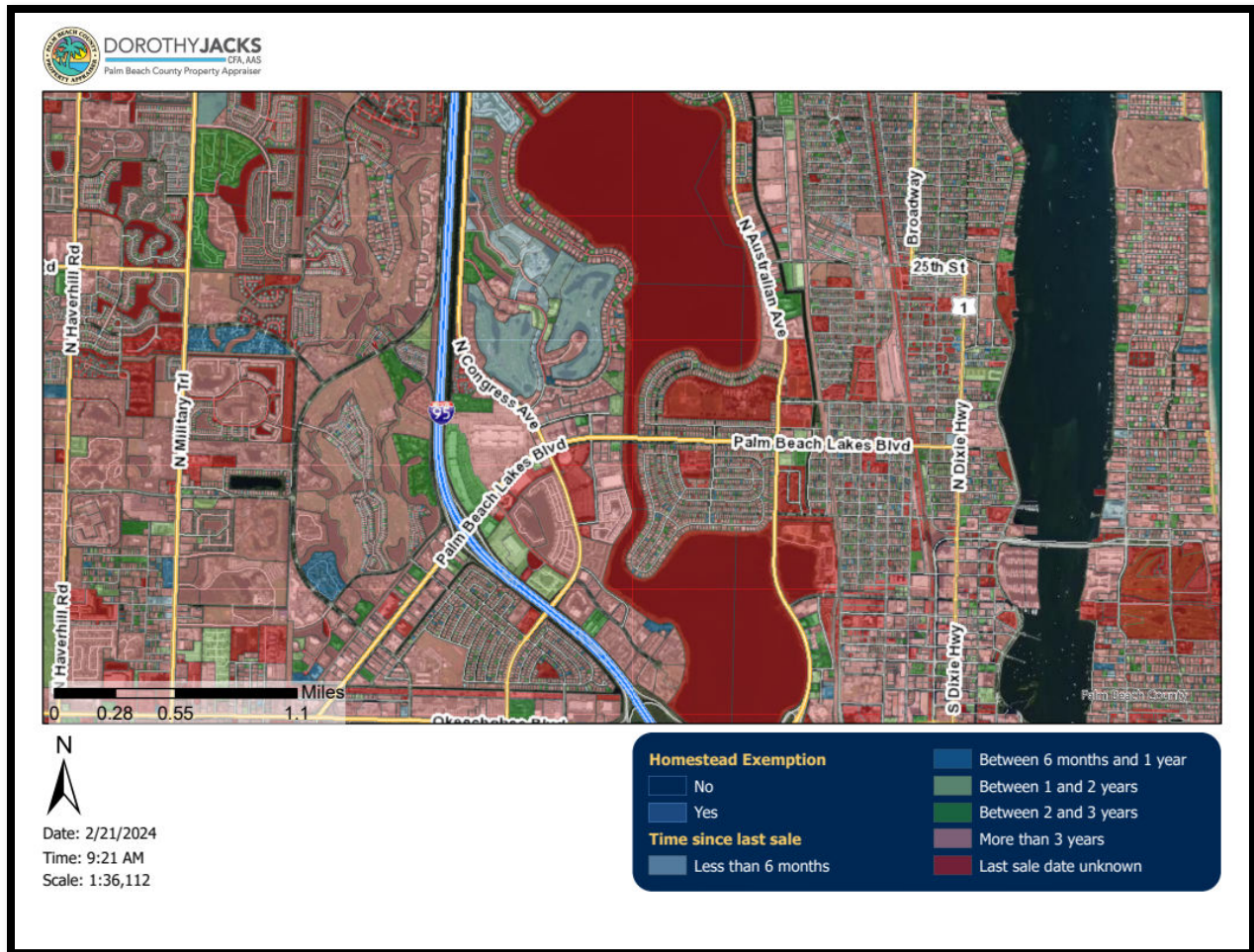
The Property Appraiser's Office of Palm Beach County has collaborated with Information Systems Services – GIS (ISS-GIS) to develop and redesign the PAPA GIS mapping application. ISS-GIS restructured the PAPA GIS Base Map web application to enhance navigation with specialized tools, user-friendly reports, and fully customizable address, owner, or property control number (PCN) filtered searches. This initiative to provide a newly designed PAPA GIS Base Map web application represents the Property Appraiser's Office of Palm Beach County's legal obligations to the state of Florida while addressing the needs of the growing population of Palm Beach County.





Program Description

The PAPA GIS Base Map web application is a geospatial mapping application designed to support the newly launched PAPA website. It offers various technologies and functionalities, such as customized selection and measurement tools, map printing, and expedited navigational features, including a personalized property sales search and directional exploration. The program was designed to be user-friendly and accessible to all Palm Beach County residents and beyond. The PAPA GIS Base Map web application allows users to interact with the map, enabling them to pan between different areas, zoom in and out, and select specific parcels to view their owner and property information. This functionality helps residents, government agencies, and businesses to access the information they need to go about their day in an easy-to-approach and accessible way.



As displayed in the map above, the PAPA GIS Base Map web application houses a variety of layers and data that the user can toggle on or off depending on their requirements. These layers include parcel outlines, road names, roads, homesteads, municipalities, property usage, sales, and map aerials from 2015, 2017, 2021, 2022, and 2023.

Objectives

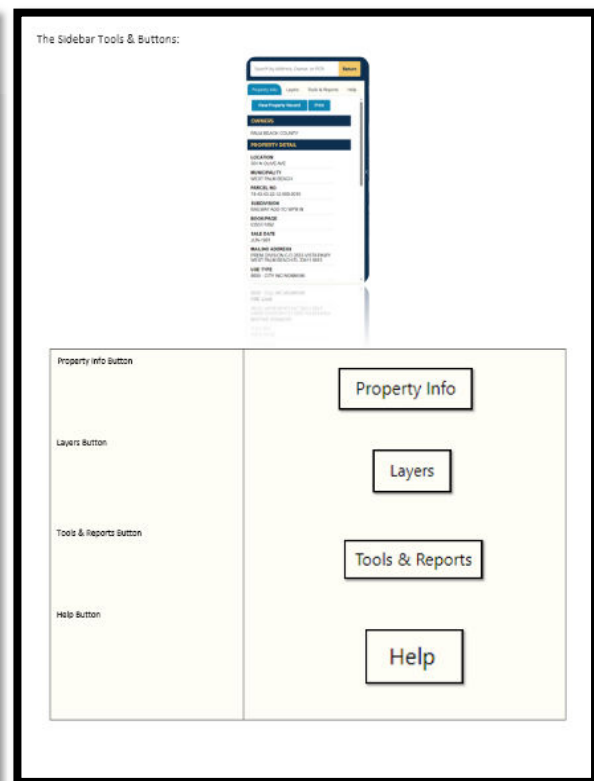
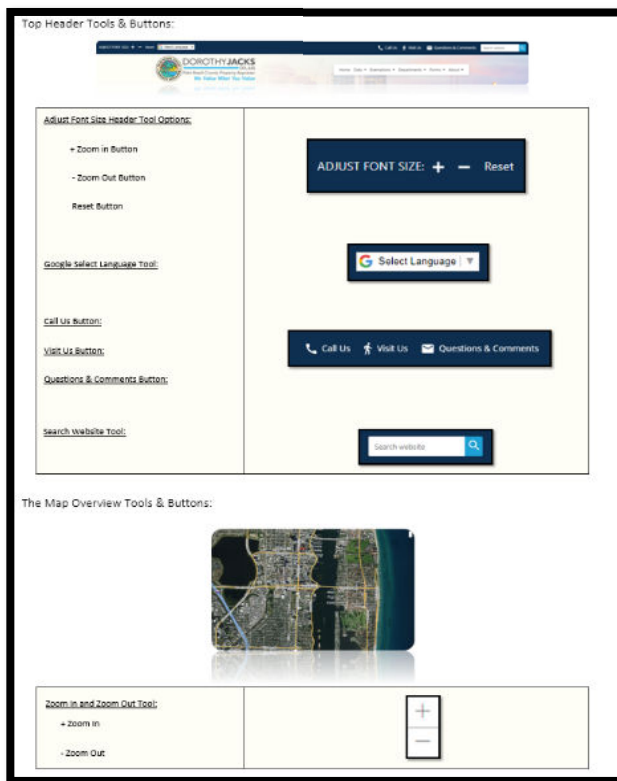
The objectives for the PAPA GIS Base Map web application include:

- Providing efficient and user-friendly parcel data access for the residents of Palm Beach County and beyond.
- Maintaining an official map of property owners with up-to-date information updated every week.
- Enhancing navigation, selection, and map printing tools.
- Providing up-to-date property data and property mailing reports.

The PAPA GIS Base Map web application is designed to be accessible by the web using a computer or mobile device such as a phone or tablet.



As displayed in the images below, an overview of the PAPA GIS Base Map web application highlights its different features, such as the top header, the map overview, and the sidebar tools.





Development Timeline

The construction of the PAPA GIS Base Map web application began in December 2022 and was officially released to the public on February 1, 2024.

The County's Implementation

Palm Beach County's implementation of the PAPA GIS Base Map web application considers the Property Appraiser's Office of Palm Beach County's initiative for technological advancements within their industry. This initiative emphasizes the importance of utilizing modern technologies to help residents, businesses, and governmental agencies understand the data they receive and gain accessible information.

Clientele and Community Coordination

The clientele of the PAPA GIS Base Map web application are residents of Palm Beach County, community workers, realtors, businesses, governmental agencies, and Palm Beach County staff. The community coordination of the PAPA GIS Base Map web application is Palm Beach County's Information Systems Services – GIS and the Property Appraiser's Office of Palm Beach County. During the testing phase of the application, user and public feedback was considered to make improvements to the application.



PAPA Website

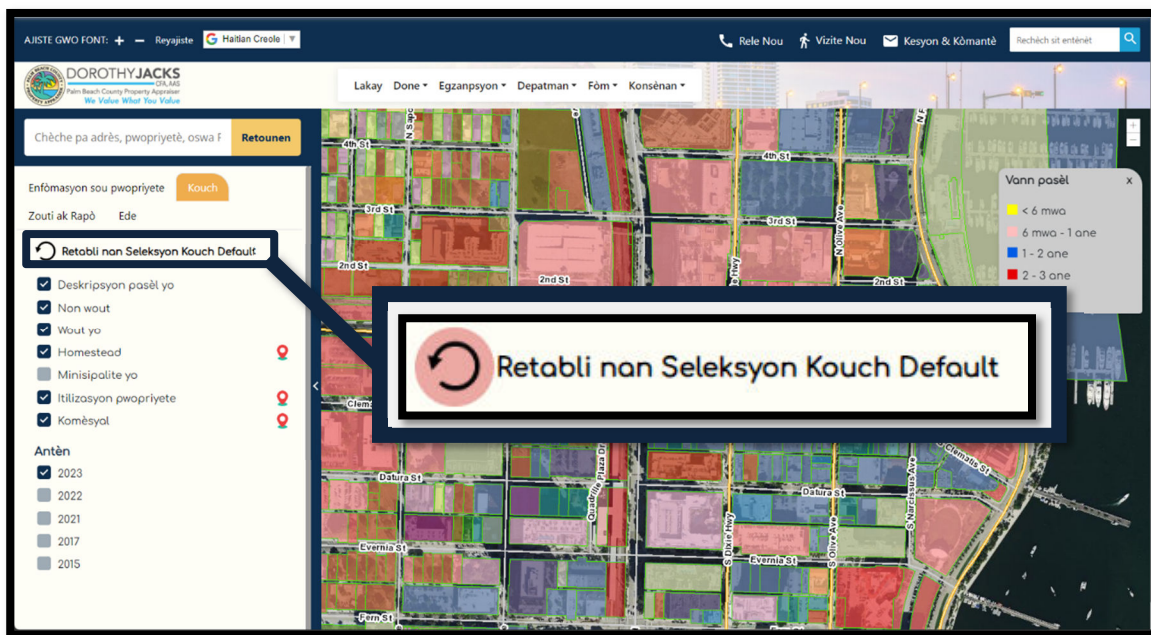
The PAPA website may be accessed at the following link: [PAPA - Palm Beach County Property Appraiser's Office \(pbc-pao.gov\)](https://pbc-pao.gov)

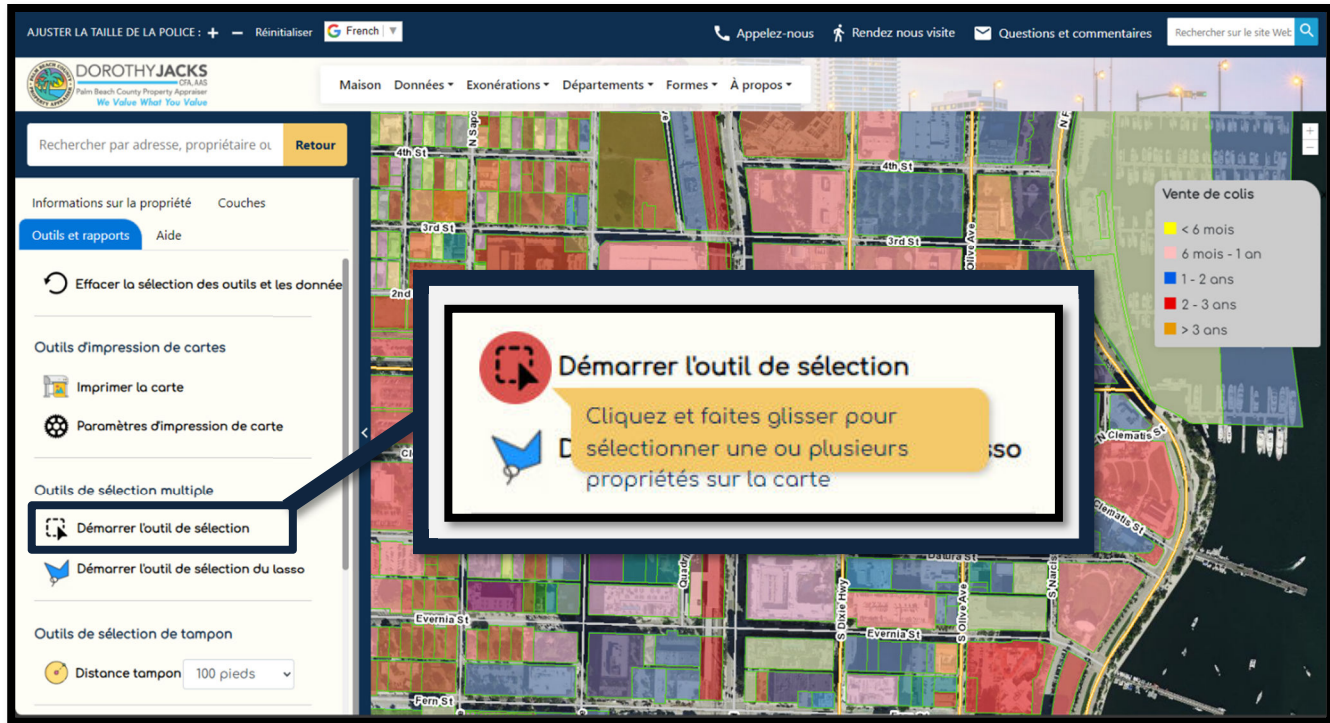
The PAPA GIS Base Map can be accessed at this link: [PAPA Countywide Map \(pbcgov.org\)](https://pbcgov.org)



Advancing Diversity, Equity and Inclusion

To ensure all Palm Beach County residents have what they need to achieve their fullest potential, county leaders are taking action to integrate diversity, equity, and inclusion into county operations. The PAPA GIS Base Map web application was designed to be user-friendly and accessible to all residents of Palm Beach County regardless of their technical skills or background. This guarantees that everyone has equal access to property information. The application considers and includes the diversity of Palm Beach County's population by providing information in four different languages, including English, French, Haitian Creole, and Spanish. The creation of the multi-lingual PAPA GIS Base Map web application ensures that various users from numerous diverse cultures and ethnic groups can access and navigate the web mapping application easily. By providing the same high-quality property information to all of Palm Beach County's residents, the PAPA GIS Base Map web application promotes equity to help residents, regardless of socioeconomic status, to make well-informed decisions based on the same series of data provided for every single resident and user in all of Palm Beach County. The PAPA GIS Base Map web application is a significant stepping-stone towards incorporating diversity, equity, and inclusion into all operations throughout Palm Beach County by providing easily accessible parcel and sales data, navigational tools, and property and mailing reports.





As displayed in the images above, the PAPA search and the PAPA GIS Base Map web application are shown with three other language options highlighting the variety of inclusive alternatives users can choose from a dropdown list. The first image is of the initial sales search on the homepage in Spanish; the image highlighted is the "More Ways to Search" menu. The second image displays the PAPA GIS Base Map web application in Haitian Creole; the highlighted option displays the "Restore to Default Layer Selection" button. The third image shows the PAPA GIS Base Map web application in French with the "Start Selection Tool" option highlighted.

The Cost of the Program

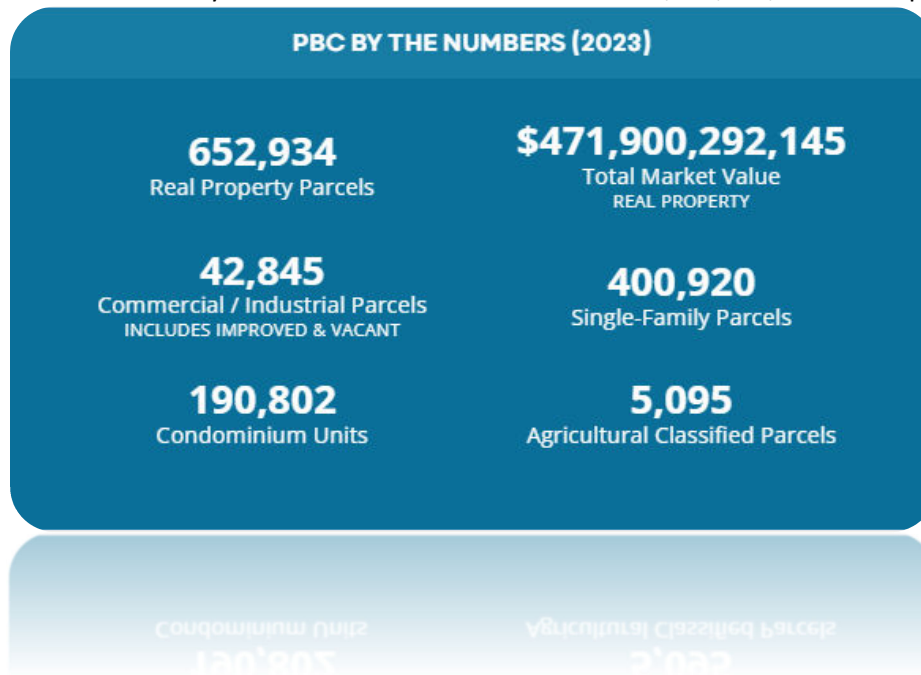
The PAPA GIS Base Map web application was created using Esri's ArcGIS Application Programming Interface (API) for JavaScript. There are no costs or fees for using the ArcGIS JavaScript API or deploying an application constructed with it. Although the original plan was to produce the PAPA GIS Base Map web application utilizing Esri's Experience Builder interface, the need for extensive customization led to the use of Esri's ArcGIS JavaScript API to allow for the creation of a more efficient and user-friendly PAPA GIS Base Map web application. In addition, Apache SOLR, another free-to-use program, was implemented to create a user-friendly search tool equivalent to the search experiences of Google or Bing. Information Systems Services GIS staff designed and constructed the PAPA GIS Base Map web application at no additional cost to Palm Beach County. The primary operation costs associated with the PAPA GIS Base Map web application would include ongoing maintenance and updates towards the application. The ongoing operational costs would consist of compatibility with newer versions of ArcGIS JavaScript API or Apache SOLR, bug fixes, and enhancements such as tool or printing



improvements. The replication costs incurred by a county attempting to replicate the PAPA GIS Base Map web application would entail the costs of the hardware needed to support the application, and the programming software which is free of charge if they utilized Esri's ArcGIS API for JavaScript and Apache SOLR, the size and scale of their replicated application, and their level of GIS support and expertise within their team.

Results/Success of the Program

In conclusion, administrative staff in the Property Appraiser's Office of Palm Beach County oversee the PAPA GIS Base Map web application, and it is updated by the Information Systems Services – GIS department. Compared to the older PAPA GIS Base Map web application, the new one has been outstanding in its navigation progress with its faster loading times and updated new 2023 aerial mapping imagery. As shown in the "PBC by the Numbers (2023)" data chart from the PAPA website below, the new PAPA GIS Base Map web application oversees around 652,934 real property parcels throughout Palm Beach County and has a total market value of \$471,900,292,145 in real property value.



The successes of the PAPA GIS Base Map web application include better functionality with its address, owner, or PCN search, which displays a selected parcel within seconds, the brand new application of viewing maps or directions within the base map itself, specifically designed web tools, and newly improved property and mailing reports.



The screenshot displays the Dorothy Jacks GIS application interface. At the top, there is a navigation menu with options: Home, Data, Exemptions, Departments, Forms, and About. The main search area includes a search bar with the text "301 NORTH OLIVE AVE" and a "Search" button. Below the search bar are several filter sections:

- Vicinity:** A dropdown menu set to "1 mile" and a "Sale Qualification" dropdown set to "Include all sales".
- Property Type:** A dropdown menu set to "GOVERNMENT".
- More Options:** A section with "Hide" and "Show" buttons.
- Sale Date:** Fields for "Sale Date From" and "Sale Date To" with date pickers.
- Sale Price:** Fields for "Sale Price Min" and "Sale Price Max" with input boxes.
- Total SqFt:** Fields for "Total SqFt Min" and "Total SqFt Max" with input boxes.
- Bedrooms:** Fields for "Bedrooms Min" and "Bedrooms Max" with input boxes.

To the right of the filters is a map showing a satellite view of a residential area with a blue circle indicating the search radius around the specified address. A "Sale Price Range" legend is also visible, with color-coded boxes for ranges: \$0 - \$100,000 (1), \$100,001 - \$200,000 (0), \$200,001 - \$300,000 (0), \$300,001 - \$500,000 (0), and \$500,001+ (0). A "Show All" button is at the bottom of the legend.


At the bottom of the interface is a table with the following data:

PCN	Address	City	Lot Size	A/C Sqft	Total Sqft	Year Built	Bed	Full Bath	Half Bath	Sale Date	Sale Price	Desc
7443431601040071	1028 TAMARIND AVE	WEST PALM BEACH	0.0713				0	0	0	2023-06-22	\$10	MUNICIPAL
7443431601040071	1028 TAMARIND AVE	WEST PALM BEACH	0.0713				0	0	0	2022-07-07	\$10	MUNICIPAL

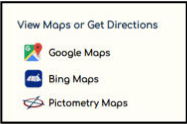
To showcase each of these successes, as displayed above, the newly designed "Nearby Sales Search" application is shown with its variety of options to help pinpoint parcel sales in proximity to a specific address. The "Vicinity" dropdown allows you to filter sales within a one-mile radius of your chosen address. The "Sale Qualification" dropdown lets you sift through sales by including qualifying sales and all sales, with the added feature of excluding sales under \$10 or \$1000. The "Property Type" dropdown enables the user to refine their search based on the type of property they are interested in; for instance, the "Government" property type. As demonstrated on the next page, the "View Maps or Get Directions" and the measurement tool processes are displayed.

View Maps or Get Directions:

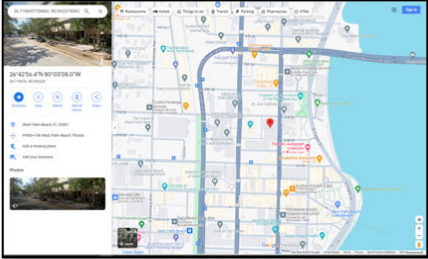
- Start by selecting a parcel on the map or search using an address, owner's name, or parcel number (PCK).



- Then go to **Tools & Reports** and scroll down to the "View Maps or Get Directions" tab, here you can choose from three options: Google Maps, Bing Maps, and Pictometry Maps. Each option provides different directions and views for the selected parcel.



- The "Google Maps" option will open a map pinpointing the exact longitude and latitude of the selected parcel. This option allows you to get directions, view the address, and share the selected location.



The Measurement Tool



1. To begin, click on an area of your map to place down a point.



2. Drag your mouse away from the point and click once within the map to create another point. This will create a line segment that measures the distance of an area.



3. Trace the area you wish to measure. Remember to click once to set down another point to create more line segments.



4. To connect your lines to finish your measurement, drag your mouse from your last point that you have placed down to another point that **has been placed**, preferably, this will always be the first point you have placed down, and double click this point again to create a full segmented outline.



5. There should be a field that shows up next to the "Start Measurement Tool" option that displays the total area in feet.



Palm Beach County's mission is to continually improve the quality of services provided to our customers. The PBC PAO's and ISS-GIS' collaboration PAPA GIS Base Map web application is an example of that for the following reasons:

- The application has a substantial impact on accessibility for the residents of Palm Beach County by providing reliable property information and streamlined user-friendly tools.
- All aspects of the program are in accordance with acceptable financial and governmental practices.
- The application represents a significant technological advancement utilizing the latest GIS technologies to provide users and the residents of Palm Beach County with the latest property data and information.
- The application promotes organization and community outreach between the residents of Palm Beach County, Palm Beach County's departments, and municipalities.