



Mapping and Geographic Information

The Office of Mapping and Geographic Information (MAGI) provides centralized Geographic Information System (GIS) services to County departments, the public, and the private sector. A significant portion of the work performed by MAGI staff involves creating, maintaining, managing, and distributing spatial data. MAGI staff also create and maintain maps and develop web applications for use by the Board of Supervisors, County staff, the public, and the private sector, as well as manage the GIS software and infrastructure in collaboration with the Department of Information Technology (DIT) that supports the GIS. GIS's qualitative benefits include improved collaboration, better decision-making, and more efficient business processes. Through the use of GIS, County staff map land development activity; assist with planning studies, map and maintain conservation easements data, maintain street centerline data; map and provide analytical support for economic development opportunities; assign addresses, street names, and parcel identification numbers (PINs); and perform many other services. GIS data feeds a number of County systems or processes, such as the Land Management Information System (LMIS), Computer-aided Dispatch (CAD), or permits. County staff has access to the Office's web-mapping system, including intranet-mapping tools for the County's building inspectors, assessors, and public safety agencies. MAGI also oversees the Conservation Easement Stewardship Program and operates the County store from this office.

Mapping and Geographic Information's Programs

Public Information

Provides assistance to the public, the private sector, and other County agencies.

System Development and Support

Provides the critical administration, services, and application development that support the functions of the GIS and GIS integration with County systems.

Development and Analysis

Develops maps and analyzes, maintains, and distributes geospatial data – mappable data layers maintained and uploaded into the GIS or the GeoHub, a central website featuring project-specific interactive map applications, informative dashboards, and topical story maps.

Land Records Maintenance

Maintains parcels, addresses, and street information, per the Loudoun County Codified Ordinances, then transfers these and other data to various data systems.



Mapping and Geographic Information

Budget Analysis

Department Financial and FTE Summary¹

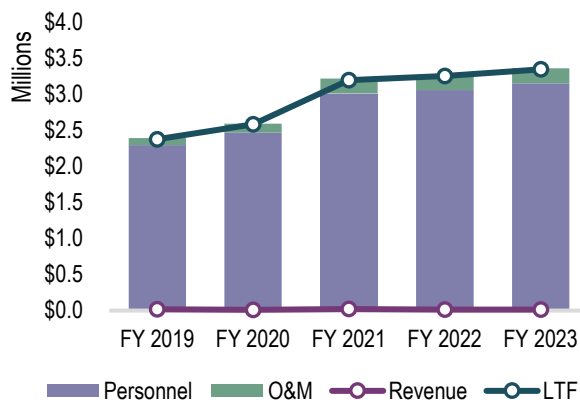
	FY 2019 Actual	FY 2020 Actual	FY 2021 Adopted	FY 2022 Proposed	FY 2023 Projected
Expenditures					
Personnel	\$2,297,421	\$2,471,707	\$3,010,501	\$3,061,799	\$3,153,653
Operating and Maintenance	98,297	122,454	208,231	208,368	210,452
Total - Expenditure	\$2,395,718	\$2,594,161	\$3,218,732	\$3,270,167	\$3,364,105
Revenues					
Use of Money and Property	\$3,198	\$3,511	\$5,000	\$3,400	\$3,400
Charges for Services	10,153	6,999	13,000	9,000	9,000
Miscellaneous Revenue	3,960	0	3,200	3,200	3,200
Total - Revenues	\$17,311	\$10,510	\$21,200	\$15,600	\$15,600
Local Tax Funding	\$2,378,407	\$2,583,651	\$3,197,532	\$3,254,567	\$3,348,505
FTE	23.00	24.00	25.00	25.00	25.00

¹ Sums may not equal due to rounding.



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Revenue and Expenditure History



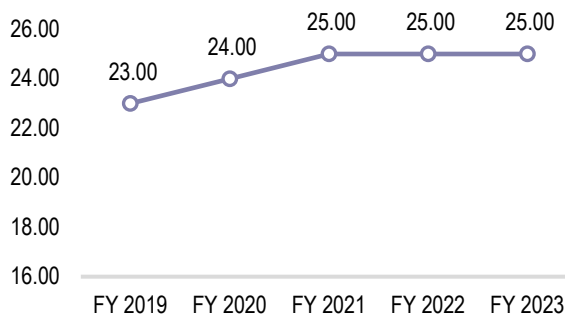
Revenue/Local Tax Funding

As shown, MAGI is primarily funded by local tax funding (over 99 percent). Program-generated revenue consists of charges for service, including requests for maps, data, and the County store. Those revenues have slowly decreased over time and are now remaining steady.

Expenditure

The majority of MAGI’s expenditure budget is dedicated to personnel costs. Major drivers of personnel increases are additional staffing as outlined in the Staffing/FTE History section, market and merit increases in each fiscal year, adjustments in FY 2020 and 2021 to reflect a new classification and compensation system approved by the Board in November 2019, and a 3.5 percent merit increase for FY 2021.

Staffing/FTE History



No positions had been added to MAGI for the previous five fiscal years before FY 2020.

FY 2020: 1.00 FTE GIS website analyst

FY 2021: 1.00 FTE programmer analyst

MAGI’s expenditures have increased primarily due to personnel costs as they make up most of the Office’s expenditures. Personnel costs have risen primarily due to a market and merit increase and the addition of a programmer analyst in FY 2021. Operating and maintenance costs have increased overall due to increased technology needs and increases in contracts. A small portion (\$3,200) of MAGI’s operating budget provides for the Loudoun GIS Focus Group’s annual forum held in the spring, which is revenue neutral as forum fees offset this cost. The forum is a regional gathering of GIS professionals and features speakers with expertise in a variety of related topics.

Revenues have decreased over the years as fewer residents purchase maps and data with more data available for free online, though historically, MAGI’s revenues have not been high. The Office manages the County Store, a small source of revenue; much of this revenue is from County staff and internal needs. Due to the COVID-19 pandemic, the 2020 Loudoun GIS Focus Group’s annual forum was canceled, resulting in a loss of revenues.

The focus on digital data and web-based services has continued to drive MAGI’s workload and work processes, including the GeoHub. GeoHub launched in 2018 as a central website featuring project-specific interactive map applications, informative dashboards, and topical story maps. Users can easily share, view, download, or map spatial data related to public safety, business support, natural resources, transportation, and current Loudoun government initiatives and programs. MAGI



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staff continues to respond to increasing demands for mobile-friendly applications. As the demand for map applications, dashboards, spatial analysis, and data has grown with the use of mobile devices, the Office expects to pursue continued learning and the need to maintain a robust hardware and software environment. In FY 2022, MAGI will continue to work with DIT to expand the County's GIS web infrastructure, improving the County's ability to offer GIS tools and data to a greater number of staff and residents.

In FY 2021, a MAGI contractor began capturing sidewalk and trails in the annual basemap contract deliverable. This project captures geographic features visible on aerial photography, as well as topography. Approximately one-third of the County is typically updated annually, although a smaller area was captured in FY 2021 due to the impact of COVID-19 on the County's budget.

The COVID-19 pandemic increased demand for online resources and virtual services. MAGI developed and now maintains a COVID-19 Hub with numerous custom web applications and dashboards. MAGI collaborated with other departments on solutions to maintain service levels (such as virtual Farm Tours in collaboration with the Department of Economic Development and elections support in collaboration with the Office of Elections and Voter Registration).

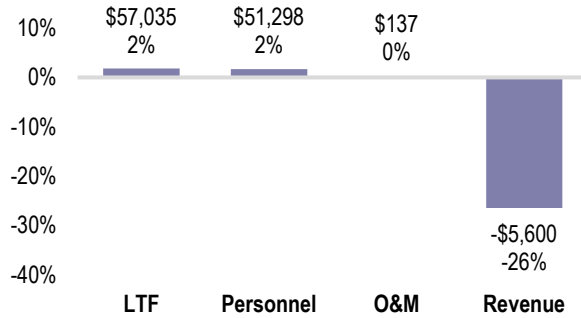
The FY 2021 Adopted Budget included a GIS programmer analyst position (1.00 FTE) to support the EnerGov project. Due to the unclear economic picture resulting from the COVID-19 pandemic, when the Board of Supervisors adopted the FY 2021 budget, most new expenditures, including new positions, were frozen until revenues are determined available to support those expenditures. The Board unfroze this position with the initial release of frozen expenditures and positions on December 15, 2020. The GIS programmer analyst position will conduct advanced spatial analysis, solve complex GIS problems, and assists staff throughout the County in efficiently delivering services through application development or programming.

In FY 2022, MAGI will continue to support several County initiatives, including the migration of the County's legacy Land Management Information System (LMIS) to EnerGov and the redrawing of the County's eight election districts following the release of the 2020 Census data in spring 2021. For FY 2022, MAGI is not requesting additional resources and will continue to monitor its resource needs based on these and other initiatives.



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Percent Change from Adopted FY 2021 to Proposed FY 2022

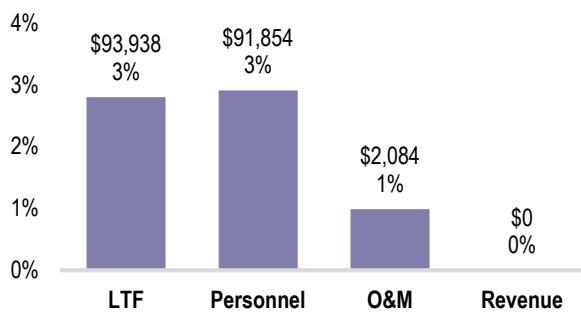


Reasons for Change:

Personnel: ↑ general pay changes || **O&M:** ↑ no base adjustments in FY 2022 ||

Revenue: ↓ decreased revenues from data and maps due to increased open data sources

Percent Change from Proposed FY 2022 to Projected FY 2023



Reasons for Change:

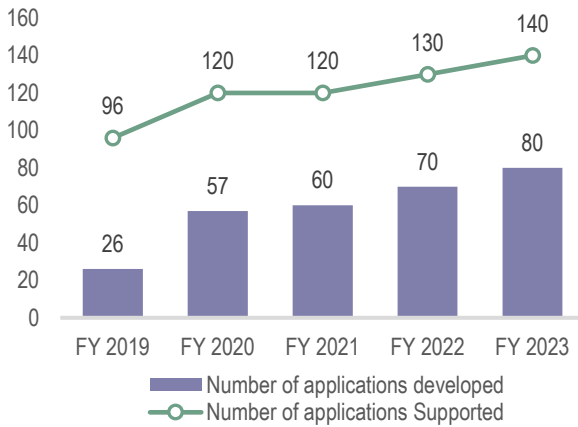
Personnel: ↑ 3 percent || **O&M:** ↑ 1 percent

|| **Revenue:** ↔



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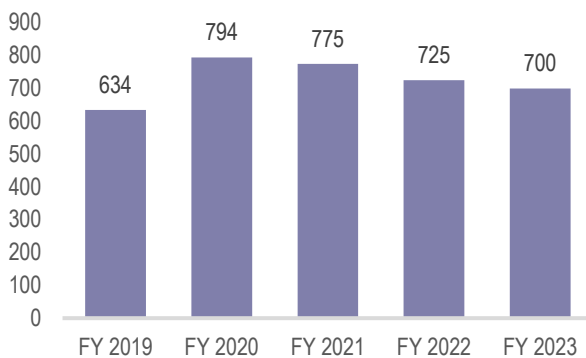
Key Measures



Objective: Develop maps, spatial models, and software tools that facilitate service delivery and policy decisions.

Measure: Number of applications developed; number of applications supported.

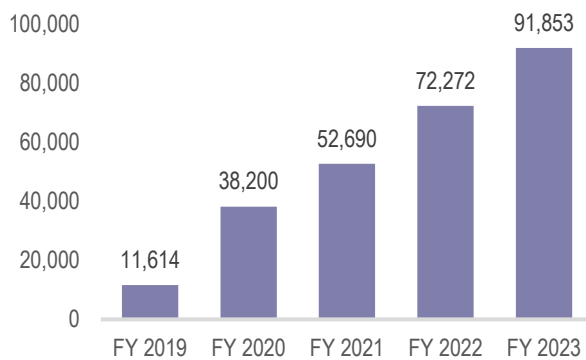
MAGI continues to support the growing use and demand of the GeoHub's applications, along with the growing work needed to support EnerGov (the new Land Management Information System).



Objective: Maintain parcel, address and street data on an hourly basis to a level that supports E911, the Land Management Information System (LMIS), Computer Aided Mass Appraisal (CAMA) system, and the Automatic Vehicle Location (AVL) system.

Measure: Number of street name referrals.

MAGI assists with the community development referral process with the street name referrals associated with site plans, boundary line adjustments, and more.



Objective: Ensure GIS data is current and available for public and staff use 99 percent of the time.

Measure: Number of data engagements with open data, including data downloads.

Residents and other users have continued to increase their use of the available open data the Office provides.



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Department Programs

Department Financial and FTE Summary by Program¹

	FY 2019 Actual	FY 2020 Actual	FY 2021 Adopted	FY 2022 Proposed	FY 2023 Projected
Expenditures					
Public Information	\$157,736	\$202,863	\$211,279	\$215,667	\$221,698
System Development and Support	739,763	799,689	1,258,675	1,277,416	1,312,981
Land Records Development and Analysis	554,759	592,945	854,788	871,037	896,631
Land Records Maintenance	943,459	998,664	893,990	906,047	932,795
Total - Expenditures	\$2,395,718	\$2,594,161	\$3,218,732	\$3,270,167	\$3,364,105
Revenues					
Public Information	\$17,311	\$10,510	\$21,200	\$15,600	\$15,600
System Development and Support	0	0	0	0	0
Land Records Development and Analysis	0	0	0	0	0
Land Records Maintenance	0	0	0	0	0
Total - Revenues	\$17,311	\$10,510	\$21,200	\$15,600	\$15,600
Local Tax Funding					
Public Information	\$140,425	\$192,354	\$190,079	\$200,067	\$206,098
System Development and Support	\$739,763	\$799,689	\$1,258,675	\$1,277,416	\$1,312,981
Land Records Development and Analysis	\$554,759	\$592,945	\$854,788	\$871,037	\$896,631
Land Records Maintenance	943,459	998,664	893,990	906,047	932,795
Total – Local Tax Funding	\$2,378,407	\$2,583,651	\$3,197,532	\$3,254,567	\$3,348,505
FTE					
Public Information	2.00	2.00	2.00	2.00	2.00
System Development and Support	7.00	8.00	9.00	9.00	9.00
Land Records Development and Analysis	7.00	7.00	7.00	7.00	7.00
Land Records Maintenance	7.00	7.00	7.00	7.00	7.00
Total - FTE	23.00	24.00	25.00	25.00	25.00

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