



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. The Conservation Easement Stewardship Program is conducted and the County store is operated 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 services and products that support the functions of the GIS.

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

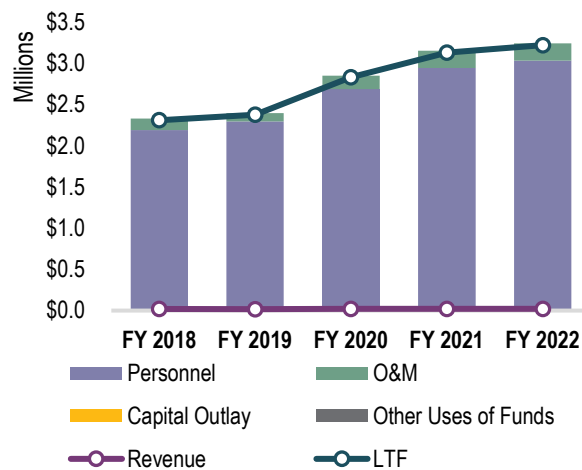
	FY 2018 Actual	FY 2019 Actual	FY 2020 Adopted	FY 2021 Proposed	FY 2022 Projected
Expenditures					
Personnel	\$2,194,091	\$2,298,564	\$2,689,583	\$2,946,625	\$3,035,024
Operating and Maintenance	137,810	98,297	163,865	208,232	210,314
Total – Expenditures	\$2,331,901	\$2,396,861	\$2,853,449	\$3,154,857	\$3,245,338
Revenues					
Use of Money and Property	\$4,818	\$3,198	\$5,000	\$5,000	\$5,000
Charges for Services	11,378	10,153	13,000	13,000	13,000
Miscellaneous Revenue	3,961	3,960	3,200	3,200	3,200
Total – Revenues	\$20,157	\$17,311	\$21,200	\$21,200	\$21,200
Local Tax Funding	\$2,311,744	\$2,379,550	\$2,832,249	\$3,133,657	\$3,224,138
FTE	23.00	23.00	24.00	25.00	25.00

¹ Sums may not equal due to rounding.



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Revenue and Expenditure History



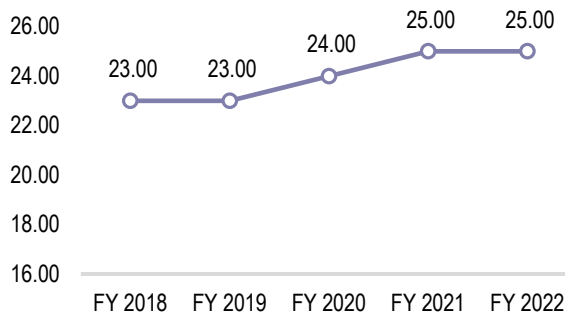
Revenue/Local Tax Funding

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. Increases in personnel costs have been driven by additional staffing as outlined in the Staffing/FTE History section, a 3 percent market-based salary adjustment and a 3.5 percent merit-based increase in FY 2019, a 2 percent market-based salary adjustment and a 3 percent merit-based increase in FY 2020, and adjustments in FY 2021 to reflect a new classification and compensation system approved by the Board in November 2019, and 1.00 FTE in the FY 2021 Proposed Budget.

Staffing/FTE History



No positions have been added to MAGI for the previous five fiscal years.

FY 2020: 1.00 FTE for a GIS website 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 3 percent merit increase and 2 percent market adjustment, and the addition of a GIS website analyst in FY 2020. 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.

The FY 2021 Proposed Budget includes base adjustments totaling approximately \$43,000 for an increase for the base map contract. The base map provides the foundation for much of the work in MAGI, including providing information to



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emergency responders and the development community. The information provided in the base map allows for updated details for driveways, structures, and more features. This contract is also used to collect yearly aerial photography.

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 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 and the release of GeoHub, the Office expects to pursue continued learning and the need to maintain a robust hardware and software environment. The approved GIS website analyst (1.00 FTE) supports the thematic area of technology and will help meet the demand for maintenance of the infrastructure, licenses, and applications.

FY 2021 needs in the Office include an additional programmer analyst position and servers for the Public Safety Portal. The next step in the GeoHub is the Public Safety Portal, which will allow public safety agencies to share and create maps in a secure space; however, the FY 2021 Proposed Budget does not include this resource. Work for MAGI continues to increase as the use of the GeoHub continues to grow, prompting the need for the analyst position, which is included in the FY 2021 Proposed Budget.

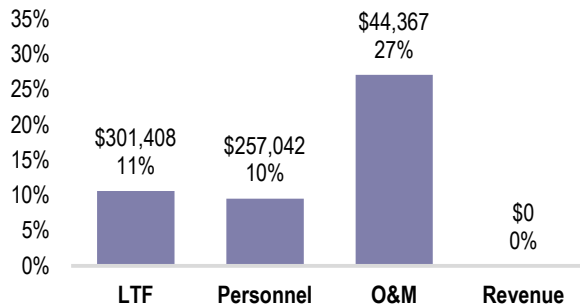
Technology

The FY 2021 Proposed Budget includes 1.00 FTE for a programmer analyst position to address growing workloads within the Office. The position will conduct advanced spatial analysis, solve complex GIS problems, and assist staff through the county in efficiently delivering services through application development and programming. MAGI staff, along with other Departments' staff, have been focused on the development and eventual implementation of the replacement to the County's current land management information system, EnerGov. This information system holds data used by various community development-related Departments in the County and will be used by other agencies, residents, and businesses. Recent developments with and increased demand from the EnerGov project require MAGI to redirect an existing programmer analyst towards a number of tasks, including project administration and establishing appropriate GIS workflows in support of the project. The redeployment of this position will affect existing service level delivery and will be a particular challenge in FY 2021, as a programmer analyst will also be required to support redistricting. MAGI does not anticipate a decrease in demand from EnerGov with go-live of the product, thus the Office has identified this position as a permanent need. The programmer analyst position will work on GIS application development and long-term application support. Recent examples include the Find My Bus Stop application, the Commercial Land Inventory application, and the Firearms Ordinance application.



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Percent Change from Adopted FY 2020 to Proposed FY 2021



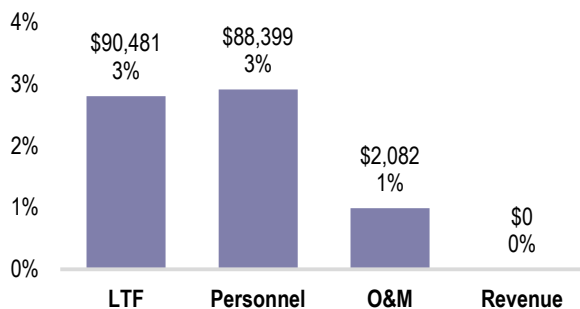
Reasons for Change:

Personnel: ↑ 1.00 FTE, general pay changes ||

O&M: ↑ base adjustments for base map ||

Revenue: ↔

Percent Change from Proposed FY 2021 to Projected FY 2022



Reasons for Change:

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

Revenue: ↔



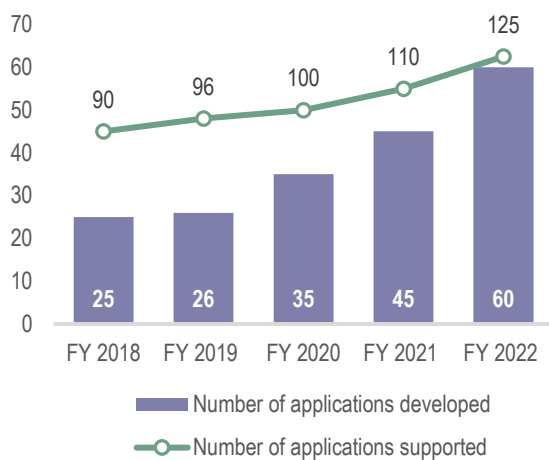
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FY 2021 Proposed Resource Requests¹

Priority 1: GIS Programmer Analyst						
Personnel:	O&M:	Capital:	Reallocation:	Revenue:	LTF:	FTE:
\$98,342	\$10,394	\$750	\$0	\$0	\$109,486	1.00
Details			Overview			
Service Level:	Current Service Level Request		<ul style="list-style-type: none">• The programmer analyst position conducts advanced spatial analysis, solves complex GIS problems, and assists staff throughout the County in efficiently delivering services through application development or programming.• An increased demand from the EnerGov project, which is replacing the current Land Management Information System, requires MAGI to redirect an existing programmer analyst towards a number of tasks, including project administration, establishing appropriate GIS workflows in support of the project, and finding a geospatial solution for tracking spatial parcel history.• MAGI does not anticipate a decrease in demand from EnerGov with go-live of the product, thus the Office has identified this position as a permanent need.			
Mandates:	Not mandated					
PM Highlight:	Number of applications developed, Number of applications supported					
Program:	Development and Support Services					
Positions:	1 GIS Programmer Analyst					
One-time Costs:	\$10,500					
Recurring Costs:	\$98,342					

Department Total						
Personnel:	O&M:	Capital:	Reallocation:	Revenue:	LTF:	FTE:
\$98,342	\$10,394	\$750	\$0	\$0	\$109,486	1.00

Key Measures²



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

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

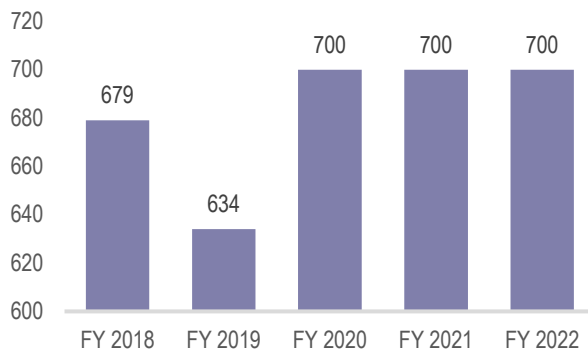
An additional FTE for a programmer analyst will help MAGI continue to support the growing use and demand of the GeoHub's applications, along with the growing work needed to support EnerGov (the new Land Management Information System).

¹ The requests presented display total cost, including the acquisition of vehicles, technology, and office furniture (as applicable). Funds for these items are shown in the Non-Departmental section, page 6-2.

² For key measures that relate to resources included in the Proposed Budget, FY 2021 and FY 2022 data reflect the estimated impact of these resources.



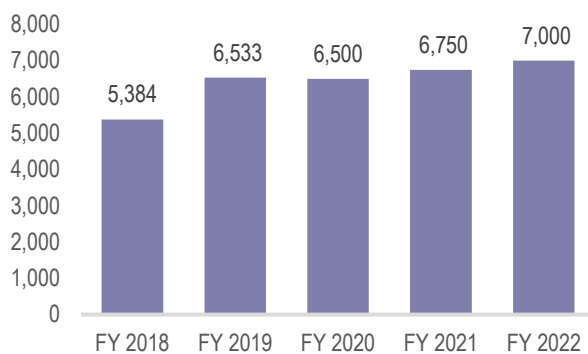
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Objective: Maintain parcel, address and street data on an hourly basis to a level that supports E911, the Land Management Information System (LMIS), Computer Aided Mass Appraisal (CAMA) system, and the Automatic Vehicle Location (AVL) system.

Measure: Number of street name referrals.

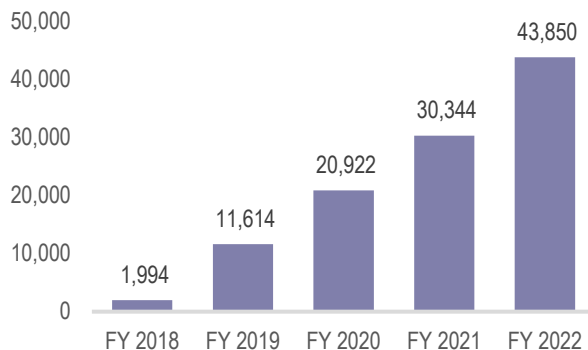
MAGI assists with the community development referral process with the street name referrals associated with site plans, boundary line adjustments, and more.



Objective: Educate customers and County staff on access, use, and understanding of spatial data, interactive map tools, and maps.

Measure: Number of customers served.

The Office continues to serve a steady number of customers.



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

Measure: Number of data engagements from open data completed.

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 2018 Actual	FY 2019 Actual	FY 2020 Adopted	FY 2021 Proposed	FY 2022 Projected
Expenditures					
Public Information	\$166,932	\$157,736	\$195,285	\$206,900	\$212,667
System Development and Support	796,623	740,049	1,038,916	1,236,176	1,270,507
Land Records Development and Analysis	492,036	555,330	790,095	836,266	860,819
Land Records Maintenance	876,311	943,745	829,152	875,514	901,344
Total – Expenditures	\$2,331,901	\$2,396,861	\$2,853,449	\$3,154,857	\$3,245,338
Revenues					
Public Information	\$20,116	\$17,311	\$21,200	\$21,200	\$21,200
System Development and Support	0	0	0	0	0
Land Records Development and Analysis	0	0	0	0	0
Land Records Maintenance	41	0	0	0	0
Total – Revenues	\$20,157	\$17,311	\$21,200	\$21,200	\$21,200
Local Tax Funding					
Public Information	\$146,816	\$140,425	\$174,085	\$185,700	\$191,467
System Development and Support	\$796,623	\$740,049	\$1,038,916	\$1,236,176	\$1,270,507
Land Records Development and Analysis	\$492,036	\$555,330	\$790,095	\$836,266	\$860,819
Land Records Maintenance	876,270	943,745	829,152	875,514	901,344
Total – Local Tax Funding	\$2,311,744	\$2,379,550	\$2,832,249	\$3,133,657	\$3,224,138
FTE					
Public Information	2.00	2.00	2.00	2.00	2.00
System Development and Support	7.00	7.00	8.00	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	23.00	24.00	25.00	25.00

¹ Sums may not equal due to rounding.