

**Minnesota GIS/LIS Consortium**  
**2024 Salary Survey Report**



Data collected in March 2024  
Report published in April 2025

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## About the Consortium

### Mission Statement

To develop and support the GIS/LIS community in Minnesota for the benefit of our people and contributors.

The Minnesota GIS/LIS Consortium is a forum for communicating information to and improving cooperation among those interested in Geographic Information Systems (GIS) and Land Information Systems (LIS) in the State of Minnesota. Members include surveyors and GIS users in local, state, federal and tribal government agencies, business and industry, educational institutions and nonprofits. Membership is free.

The Minnesota GIS/LIS Consortium is an official 501c3 non-profit organization. More information about the Consortium is available at [www.mngislis.org](http://www.mngislis.org).

## About this report

### Methodology

The Board of Directors assigned the Salary Survey to the Professional Development Committee. Members of this committee modified and updated the 2022 Salary Survey questions and published the survey using ArcGIS Survey123 (version 3.19), an online survey tool available to the Consortium through its Esri ArcGIS software maintenance.

The committee collected survey responses between the dates of March 1<sup>st</sup> and March 31<sup>st</sup>, 2024. In addition to announcing the survey on the Consortium's biweekly e-announcement emails, they also posted the survey link multiple times on the MN GIS/LIS Consortium's Twitter, Facebook, Instagram, and LinkedIn pages. Individual Consortium members also publicized the survey through their professional and social networks. The format, timing, and solicitation of the 2024 and previous surveys were similar but not identical.

### Privacy considerations

To mask individual respondent data, this report only includes salary trends for individual job attributes that received at least 10 responses. This report summarizes salaries using medians and bottom/top third break points. These numbers were also rounded to the nearest hundred dollars for further anonymity.

### Limitations

The results of the 2024 Salary Survey reflect the composition of the survey respondent pool. Although the Consortium's membership includes GIS and LIS users in government agencies, business and industry sectors, and educational institutions, membership is weighted heavily toward public sector employees. There is an assumed level of subjectivity in survey responses. The GIS industry generally uses a common language to describe positions and specialties, but the terminology is not standardized.

No single attribute of a GIS job can fully explain its salary trends. This report explores the relationship between different job attributes and salaries, but these results are not and should not be interpreted as causal or conclusive.

With these known limitations, the Consortium now presents this snapshot of GIS/LIS salary trends in Minnesota for 2024.

## Accessibility

Some of the data in this report are presented in chart images. In those cases, the data also appear in table form. If you have any accessibility or other accommodation needs with this report, please email [profdev@mngislis.org](mailto:profdev@mngislis.org).

## About the respondents

### Response makeup

236 members completed the Salary Survey. This is a smaller sample size than in 2022 (320) and 2020 (313). 228 (97%) of the 2024 respondents work full time. The median age of respondents was 39. Two-thirds of respondents have worked in GIS/LIS for between 3 and 20 years.

### Work sector

58% of respondents reported working in the government sector. 34% reported working in the private sector, and the remaining 8% work in the education or nonprofit sectors.

### Work environment

52% of respondents reported working in a hybrid work environment with anywhere from 1-2 office days per week to 1-3 office days per month. 22% of respondents work remotely full time. 26% work in the office full time or only work remotely on occasion.

### ArcGIS platform

63% of respondents reported using ArcGIS Pro as their main GIS application. 12% reported using ArcMap, and 13% reported using ArcGIS Enterprise. The remaining 11% reported using some other application. Respondents also provided information about additional GIS software they use along with their primary application. 82% reported also using ArcGIS Online. 30% reported also using Google Earth Pro, and 16% reported also using QGIS.

### Sample overlap

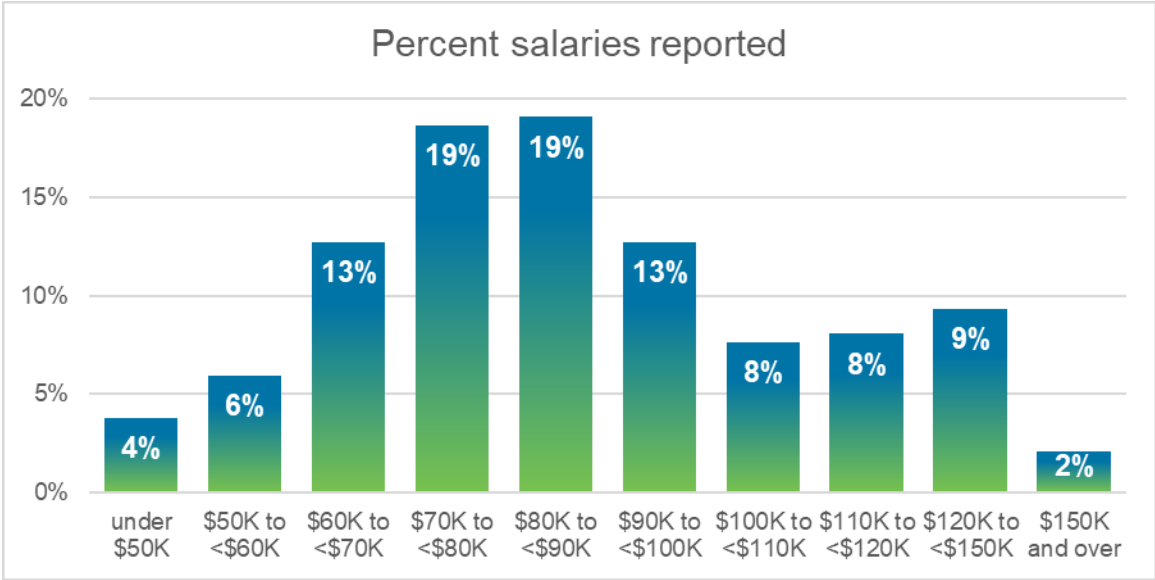
49% of respondents in 2024 reported taking the 2020 and/or 2022 Salary Survey. There are some limited comparisons of salaries over time in this report, but in general the data reported here are intended as a discrete snapshot of the state of GIS salaries in 2024.

# Salary breakdowns

The following sections of this report explore salary trends by job attributes. The reader is reminded that none of this data should be interpreted as causal or conclusive.

## General compensation

The median salary reported in 2024 was \$85,000. Adjusted for inflation, this represents a 5% increase from the 2022 survey and a 1% decrease from 2020.

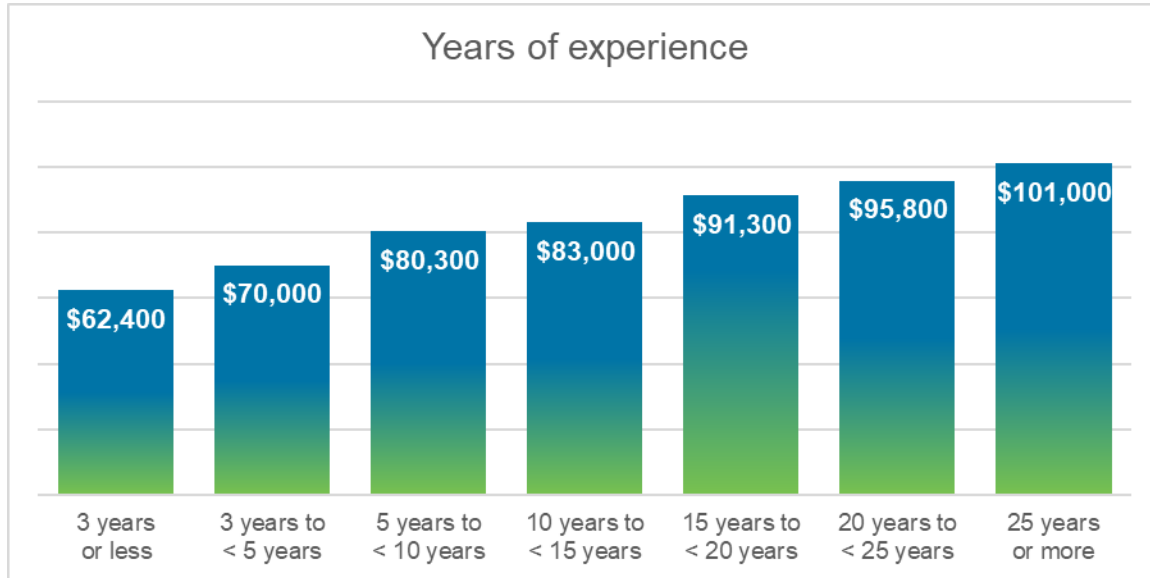


Salary ranges	Percent of responses
Under \$50,000	4%
\$50,000 to under \$60,000	6%
\$60,000 to under \$70,000	13%
\$70,000 to under \$80,000	19%
\$80,000 to under \$90,000	19%
\$90,000 to under \$100,000	13%
\$100,000 to under \$110,000	8%
\$110,000 to under \$120,000	8%
\$120,000 to under \$150,000	9%
\$150,000 and over	2%

The mean 2024 salary was \$87,000, suggesting a slight upward skew from a smaller group of higher salaries. About one third of respondents reported a salary of \$75,000 or below. Another third reported a salary of \$95,000 or above, with the middle third reporting salaries between those two amounts.

## Years of GIS experience

Median salaries over time suggest a smooth upward trend as years of experience increase. There was a slight plateauing present between 5 and 15 years of experience, but the upward trend continues after that timeframe and begins to slow after 20 years.



Years of experience	Percent of responses	Median salary	Bottom third	Top third
3 years or less	9%	\$62,400	\$58,000	\$66,000
3 to less than 5 years	11%	\$70,000	\$63,400	\$76,000
5 to less than 10 years	21%	\$80,300	\$74,000	\$85,000
10 to less than 15 years	19%	\$83,000	\$78,000	\$95,000
15 to less than 20 years	16%	\$91,300	\$81,000	\$109,000
20 to less than 25 years	11%	\$95,800	\$93,000	\$106,000
25 years or more	13%	\$101,000	\$93,000	\$116,400

59% of respondents reported having 10 years or more of GIS/survey work experience. 20% reported having 5 years or less experience. The remaining 21% had between 5 and 10 years of experience.

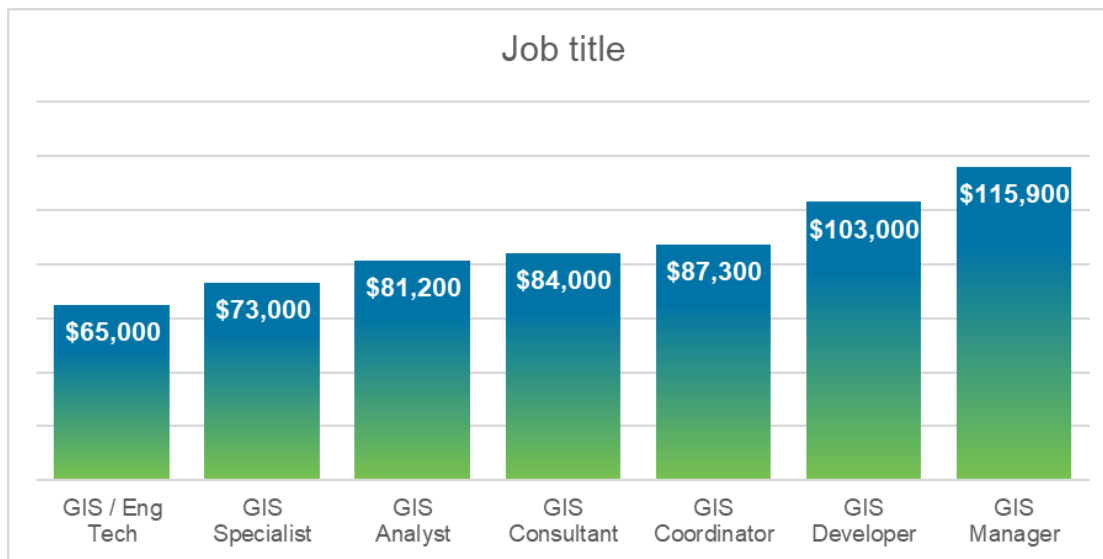
## Compensation type

Salaried employees reported a higher median salary than hourly employees. 65% of salaried employees also reported having at least 10 years of GIS experience, compared to 54% of respondents who are paid hourly. 3% of respondents did not specify their compensation type.

Compensation type	Percent of responses	Median salary	Bottom third	Top third
Annual salary	49%	\$90,900	\$81,000	\$107,000
Paid hourly	47%	\$78,600	\$70,500	\$87,900

## Job title

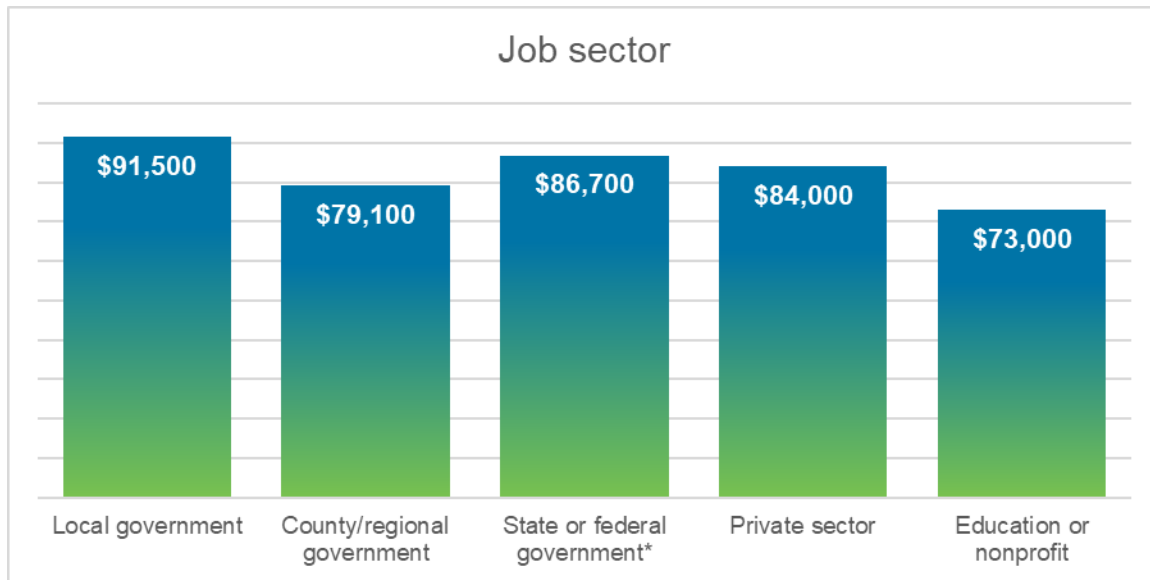
Respondents were given a list of 17 job titles and asked to choose the one that best described their position. 7 titles had a large enough sample size to report. 69% of respondents reported a job title as GIS Analyst, Coordinator, Specialist, or Manager.



Job title	Percent of responses	Median Salary	Bottom third	Top third
GIS/Engineering Tech	7%	\$65,000	\$58,500	\$78,000
GIS Specialist	23%	\$73,000	\$66,000	\$82,000
GIS Analyst	19%	\$81,200	\$75,000	\$88,000
GIS Consultant	4%	\$84,000	\$71,000	\$86,000
GIS Coordinator	15%	\$87,300	\$80,000	\$97,100
GIS Developer	5%	\$103,000	\$92,000	\$110,000
GIS Manager	12%	\$115,900	\$109,000	\$125,000

## Employment sector

58% of respondents work at some level of government. 34% work in the private sector, and the remaining 8% work in education or nonprofit. Respondents from local government reported the highest median salary, followed by state/federal government, private sector, county government, and education or nonprofit. The most common areas respondents in the private sector reported working in were Architecture, Engineering, and Construction (AEC) and Business/Commercial.



Job sector	Percent of responses	Median salary	Bottom third	Top third
Local government	17%	\$91,500	\$85,000	\$95,000
County/regional government	22%	\$79,100	\$74,800	\$87,300
State or federal government*	20%	\$86,700	\$74,000	\$96,800
Private sector	34%	\$84,000	\$73,000	\$95,000
Education or nonprofit	8%	\$73,000	\$66,000	\$98,300

*\*the median and top third salaries for state govt alone are the same. The bottom third adjusts to \$73,000.*

Respondents from all sectors reported a wide variety in salaries, and the reader is reminded not to conclude that any one job characteristic is responsible for these trends.

## Experience areas

The number of experience areas that met the reporting threshold was double that of the 2020 Salary Survey. The experience area with the most respondents was Local or Regional Government (42%), followed by Utilities and Energy Infrastructure (26%) and 25% each for Information Technology, Natural Resources, and Surveying and Land Records.

The highest median salary by any experience area was in Health and Human Services at \$108,500. It should also be noted that this was one of the smaller response pools.

Experience area	Percent of responses	Median salary	Bottom third	Top third
Agriculture	5%	\$85,500	\$74,000	\$98,000
Archaeology/Cultural resources	4%	\$80,300	\$80,000	\$102,000
E911 or NextGen 911	17%	\$83,000	\$73,000	\$90,000
Elections and politics	8%	\$86,800	\$78,000	\$99,800
Geology	5%	\$80,000	\$63,400	\$85,000
Government (local or regional)	42%	\$82,000	\$75,000	\$90,000
Government (state or federal)	22%	\$85,100	\$79,000	\$96,800
Health and human services	5%	\$108,500	\$82,500	\$139,000
Higher education	5%	\$76,100	\$70,000	\$98,300
Information technology	25%	\$96,400	\$84,000	\$107,600
Mining	4%	\$74,500	\$65,900	\$85,100
Natural resources	25%	\$83,500	\$76,000	\$96,500
Planning and land use	18%	\$80,000	\$75,500	\$87,300
Public safety	11%	\$86,300	\$74,900	\$109,000
Real estate	6%	\$85,000	\$78,000	\$112,000
Recreation	8%	\$85,900	\$80,000	\$102,000
Surveying and land records	25%	\$85,000	\$76,800	\$95,000
Transportation	18%	\$81,600	\$76,100	\$91,500
Utility and energy infrastructure	26%	\$85,100	\$78,000	\$95,100
Water resources and hydrology	22%	\$81,000	\$75,500	\$94,000

## Educational background

In previous surveys, respondents reported if they had a GIS or related degree. This question was removed from the 2024 Salary Survey after reflecting how common it is that Consortium members discovered GIS while studying another major or working in another area.

Respondents instead reported their overall highest degree. Respondents could select multiple degree majors for this question. The most common degree majors earned by respondents were Geography and GIS followed by a smaller pool in Environmental Resources.

Highest degree	Percent of responses	Median salary	Bottom third	Top third
Bachelor's degree	53%	\$78,800	\$70,500	\$86,700
Master's degree	41%	\$89,500	\$80,100	\$102,000

94% of respondents earned either a Bachelor's or Master's degree. The median salary for Master's degree holders is \$10,700 above that of Bachelor's degree holders. As with all job attributes shared in this report, there is likely more at play. For example, 68% of Master's degree holders reported 10 or more years of work experience, compared to 50% of Bachelor's degree holders.

## Computer programming

In previous surveys, respondents reported the amount of time they spent working on computer programming. On further reflection, this question is a bit meaningless. For the 2024 survey, this question expanded into a series of questions about how respondents use various technologies in their jobs. Each question also included subtext providing examples for each type of computer programming. This subtext appears in *italics* under each category title.

Each table includes all possible responses so the reader can see the full distribution for each question. Salary data are not provided for any categories that did not include at least 10 responses.

There are some apparent inverse relationships between GIS uses and median salaries. One hypothesis is that GIS and related computer use may decrease as people advance in their careers into more niche or people-focused roles. For example, 64% of GIS Managers and 83% of GIS Developers reported using desktop GIS applications for less than half of their time.

## Using GIS and related desktop applications

*ArcGIS, QGIS, Mapitude, MapInfo, GRASS, ENVI, Surfer, Global Mapper, Smallworld, etc.*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	2%	-	-	-
Less than 10%	13%	\$108,000	\$95,000	\$116,000
10% to less than 25%	13%	\$100,000	\$85,000	\$110,000
25% to less than 50%	14%	\$83,300	\$73,100	\$98,000
50% to less than 75%	21%	\$82,500	\$74,900	\$90,000
75% or more	37%	\$78,000	\$68,500	\$86,000

## Using GIS and related web applications

*ArcGIS Online, Enterprise, Google Earth, etc.*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	2%	-	-	-
Less than 10%	20%	\$86,700	\$80,000	\$98,000
10% to less than 25%	30%	\$85,000	\$76,100	\$97,500
25% to less than 50%	23%	\$77,800	\$70,000	\$92,900
50% to less than 75%	14%	\$85,900	\$79,000	\$97,100
75% or more	11%	\$87,100	\$80,000	\$95,000

## Developing GIS scripts and tools

*Standalone scripts or tools for use within GIS applications*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	22%	\$85,900	\$72,100	\$97,100
Less than 10%	49%	\$82,000	\$74,800	\$90,000
10% to less than 25%	15%	\$83,500	\$73,000	\$98,300
25% to less than 50%	8%	\$86,000	\$80,000	\$98,000
50% to less than 75%	4%	\$104,000	\$79,200	\$130,000
75% or more	1%	-	-	-

## Performing data analytics

*Analyzing data using tools such as R, Tableau, or Power BI*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	44%	\$81,000	\$71,000	\$89,400
Less than 10%	32%	\$86,500	\$78,000	\$105,000
10% to less than 25%	9%	\$82,000	\$73,000	\$95,000
25% to less than 50%	8%	\$83,500	\$76,900	\$92,000
50% to less than 75%	5%	\$94,000	\$85,000	\$110,000
75% or more	1%	-	-	-

## Computer programming

*Application development or other work that involves the writing of computer code, APIs, etc.*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	47%	\$84,000	\$72,100	\$93,000
Less than 10%	34%	\$82,000	\$77,000	\$94,000
10% to less than 25%	6%	\$80,700	\$70,000	\$98,300
25% to less than 50%	5%	\$82,500	\$79,200	\$86,000
50% to less than 75%	3%	-	-	-
75% or more	5%	\$103,200	\$92,000	\$120,000

## Collecting data in the field

*Using tablets, GNSS receiver, or total station to capture or update data in field.*

Percent of time	Percent of responses	Median salary	Bottom third	Top third
None	55%	\$86,300	\$78,000	\$98,000
Less than 10%	33%	\$84,000	\$74,700	\$95,000
10% to less than 25%	8%	\$78,900	\$66,000	\$85,000
25% to less than 50%	2%	-	-	-
50% to less than 75%	0%	-	-	-
75% or more	1%	-	-	-

## Technical proficiencies

Respondents were asked about their proficiencies in 17 GIS and related skill areas. Each proficiency includes a brief description of the salary trends.

Respondents were not given definitions or examples of each skill or proficiency level. As such, these responses should be interpreted as subjective.

### Desktop GIS software

The vast majority (99%) of respondents indicated an Intermediate or Advanced level of proficiency with Desktop GIS Software. Advanced users saw an increase, though this was also the most common response.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	0%	-	-	-
Beginner	1%	-	-	-
Intermediate	25%	\$78,500	\$66,000	\$95,000
Advanced	74%	\$86,000	\$78,000	\$95,000

### Cartography

There is a steady increase in median salary as proficiency in cartography increases, suggesting this specific desktop GIS skill has a quantifiable value. The majority of respondents (93%) also reported having Intermediate or Advanced skill levels.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	2%	-	-	-
Beginner	6%	\$68,000	\$55,100	\$86,000
Intermediate	47%	\$82,100	\$73,000	\$96,000
Advanced	46%	\$86,700	\$85,600	\$95,000

## Data analysis

While this is an extremely generic description of a proficiency, respondents who rate their data analysis skills as Advanced reported a notably higher salary than those in other proficiency levels.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	1%	-	-	-
Beginner	10%	\$75,500	\$68,000	\$85,000
Intermediate	54%	\$82,300	\$73,000	\$91,700
Advanced	35%	\$92,000	\$80,600	\$104,400

## Python

Python has become a popular programming language and is the language of choice for integrating with ArcGIS and many open-source GIS. Among those with any Python experience, median salary rises \$17,000 from Beginner to Advanced proficiency levels.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	12%	\$81,000	\$70,500	\$99,800
Beginner	52%	\$82,100	\$73,000	\$89,000
Intermediate	26%	\$85,000	\$78,000	\$107,600
Advanced	10%	\$98,100	\$86,000	\$105,000

## SQL Server or other DBMS (Database Management System)

The largest difference in salaries in any skill set is found between respondents reporting No Experience to Advanced proficiency in SQL Server or other DBMS. This may be somewhat explained by the strong relationship between proficiency and years' experience. The difference in median salary between No Experience and Advanced Proficiency is over \$34,000.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	17%	\$70,800	\$63,000	\$82,000
Beginner	40%	\$80,000	\$71,500	\$86,700
Intermediate	34%	\$91,700	\$82,000	\$102,300
Advanced	9%	\$105,000	\$96,800	\$120,000

## Remote sensing

While all the proficiencies likely have some skew based on their value and use in different industries, remote sensing is perhaps one of the more niche skill sets. Only 34% of respondents reported and Intermediate or Advanced proficiency, with a \$7,500 median salary difference between No Experience and Advanced.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	23%	\$80,000	\$70,500	\$90,000
Beginner	43%	\$84,700	\$75,500	\$95,000
Intermediate	28%	\$86,000	\$76,900	\$98,300
Advanced	6%	\$87,500	\$78,000	\$115,000

## Web GIS mapping

Respondents indicating an Intermediate to Advanced proficiency in Web GIS mapping increased from 68% in 2020 to nearly 83% in 2024. The median salary difference between reported Beginner and Advanced proficiency is \$15,400.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	3%	-	-	-
Beginner	15%	\$78,000	\$65,000	\$87,300
Intermediate	44%	\$80,600	\$73,000	\$89,400
Advanced	39%	\$93,400	\$82,000	\$108,000

## Web GIS administration

Web GIS administration was broken out from general web GIS mapping for the 2024 survey. Respondents' reported proficiency level is distributed rather evenly in this category. However, the median salary difference between reported Beginner and Advanced proficiency is \$17,100.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	17%	\$66,000	\$60,000	\$81,000
Beginner	23%	\$80,600	\$72,100	\$86,000
Intermediate	32%	\$83,000	\$74,900	\$95,000
Advanced	28%	\$97,700	\$87,500	\$111,000

## Open-source GIS

As another niche and organization-specific proficiency, open-source GIS experience does not appear to have a notable impact on compensation for the reported respondent jobs until the Advanced level is reached. However, given that this skill is platform-specific, it may be that this skill is driven more by organizational needs than it is by individual career tracks.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	31%	\$80,600	\$72,100	\$90,800
Beginner	43%	\$85,000	\$77,000	\$94,000
Intermediate	20%	\$87,500	\$73,000	\$100,000
Advanced	6%	\$85,600	\$76,100	\$120,000

## Application development

Only 38% of respondents report Intermediate or higher proficiency in this skill set, with an evident salary increase for those with Advanced application development experience. This trend appears to be in line with the higher median salaries reported by respondents who are GIS Managers, GIS Coordinators, and GIS Developers.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	30%	\$80,400	\$70,000	\$87,900
Beginner	32%	\$80,600	\$74,000	\$94,000
Intermediate	28%	\$86,700	\$79,300	\$102,900
Advanced	10%	\$103,200	\$87,500	\$120,000

## LiDAR

Only 28% of respondents reported Intermediate to Advanced proficiency with LiDAR, with a \$15,300 median salary difference between No Experience and Advanced.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	25%	\$81,200	\$70,000	\$95,000
Beginner	47%	\$85,000	\$75,000	\$95,000
Intermediate	23%	\$84,900	\$76,900	\$95,000
Advanced	5%	\$96,500	\$78,000	\$110,000

## GNSS or mobile data collection

Of the respondents reporting Beginner or higher proficiency, 46% were from the government sector and 27% were from the private sector. Median salaries appear to increase with proficiency less in GNSS or mobile data collection.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	21%	\$84,200	\$70,000	\$95,000
Beginner	32%	\$81,200	\$74,000	\$89,400
Intermediate	31%	\$85,000	\$75,000	\$95,000
Advanced	16%	\$91,600	\$80,600	\$112,000

## sUAS drones, mission planning and operation

The majority of respondents have No Experience with Small Unmanned Aircraft Systems (sUAS) work. Of those reporting Beginner or higher proficiency, 15% were from the government sector and 10% were from the private sector.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	72%	\$83,500	\$73,000	\$92,000
Beginner	16%	\$86,700	\$78,800	\$104,000
Intermediate	8%	\$85,100	\$73,100	\$108,000
Advanced	4%	\$99,700	\$80,600	\$124,000

## uUAS drones, data management and analysis

The majority of respondents have No Experience with uUAS drone work. Of those reporting Beginner or higher proficiency, 15% were from the government sector and 11% were from the private sector.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	71%	\$84,000	\$73,000	\$92,000
Beginner	18%	\$86,000	\$75,000	\$104,000
Intermediate	7%	\$94,000	\$76,100	\$108,000
Advanced	4%	\$99,700	\$80,600	\$124,000

### 3D GIS or digital twin

The majority of respondents have either No Experience or Beginner proficiency with 3D GIS. Of those reporting Beginner or higher proficiency, 22% were from the government sector and 15% were from the private sector.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	60%	\$80,000	\$72,100	\$88,500
Beginner	28%	\$86,000	\$78,000	\$100,000
Intermediate	9%	\$108,000	\$87,500	\$112,000
Advanced	3%	-	-	-

### Machine learning or deep learning

The majority of respondents have No Experience with machine learning. Of those reporting Beginner or higher proficiency, 17% were from the government sector and 15% were from the private sector.

Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	63%	\$83,000	\$74,000	\$90,800
Beginner	29%	\$83,000	\$76,000	\$98,300
Intermediate	7%	\$120,000	\$86,000	\$124,000
Advanced	3%	-	-	-

### AI or natural language processing tools

The majority of respondents have No Experience with AI work. Of those reporting Beginner or higher proficiency, 15% were from the government sector and 13% were from the private sector.

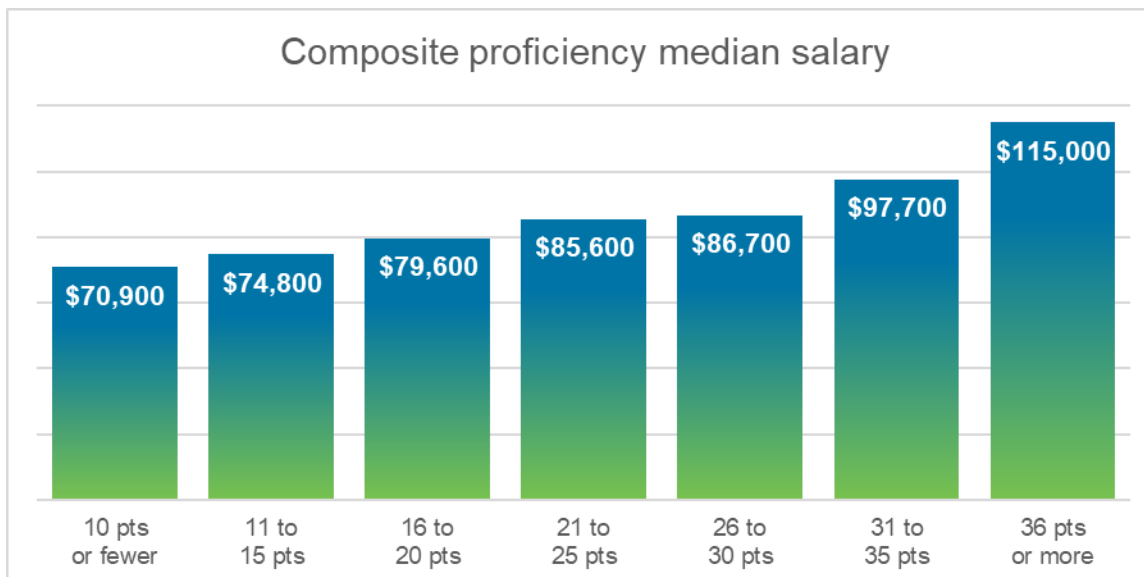
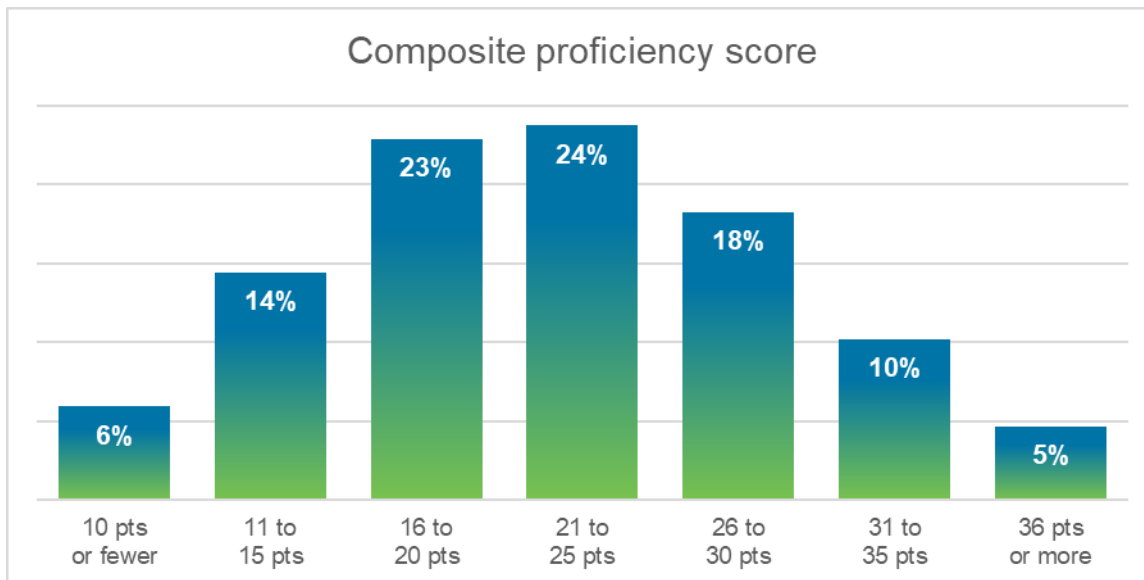
Proficiency level	Percent of responses	Median salary	Bottom third	Top third
No experience	68%	\$84,000	\$73,800	\$92,900
Beginner	26%	\$85,500	\$76,100	\$105,000
Intermediate	6%	\$107,000	\$86,000	\$120,000
Advanced	<1%	-	-	-

## Overall proficiency score

For this analysis, each response for each question was given a point value per experience level (No experience = 0, Beginner = 1, Intermediate = 2, Advanced = 3).

Each respondent's answers were then summed for a composite proficiency score. The median composite score for all respondents was 22 points, with a bottom third break point of 18 points and a top third break point of 25 points.

The distribution appears to roughly fit a bell curve, and there appears to be a positive correlation between the number/level of proficiencies and median salaries.



Composite proficiency score	Percent of responses	Median salary	Bottom third	Top third
10 points or fewer	6%	\$70,900	\$66,500	\$90,000
11 to 15 points	14%	\$74,800	\$62,400	\$81,000
16 to 20 points	23%	\$79,600	\$71,500	\$86,700
21 to 25 points	24%	\$85,600	\$74,800	\$94,800
26 to 30 points	18%	\$86,700	\$79,300	\$107,600
31 to 35 points	10%	\$97,700	\$85,100	\$110,000
36 points or more	5%	\$115,000	\$104,000	\$120,000

### Geographic region

Respondents were asked for their employer’s office region using a map included in the survey and in the appendix of this report. Respondents were also given the option of Other for fully remote companies. Of the eight possible regions, six of them had a large enough sample size to report salaries for. Of the respondents that selected Other, 73% work remotely full time. The remaining were mostly respondents from bordering states.

Region	Percent of responses	Median salary	Bottom third	Top third
Northeast	12%	\$74,600	\$68,000	\$78,000
Central	11%	\$78,480	\$68,000	\$92,900
Metro	56%	\$88,200	\$80,100	\$99,800
Southeast	6%	\$94,500	\$74,900	\$102,900
Northwest	4%	\$76,300	\$66,000	\$100,000
Other - Remote	6%	\$85,000	\$70,000	\$107,000

### GISP certification

For those unfamiliar with the GISP certification, more information is available from the GIS Certification Institute at [www.gisci.org](http://www.gisci.org). There is a significant difference in the median salary between those with a GISP certificate and those without.

Received GISP	Percent of responses	Median salary	Bottom third	Top third
No	86%	\$81,100	\$73,000	\$90,000
Yes	14%	\$108,500	\$94,000	\$120,000

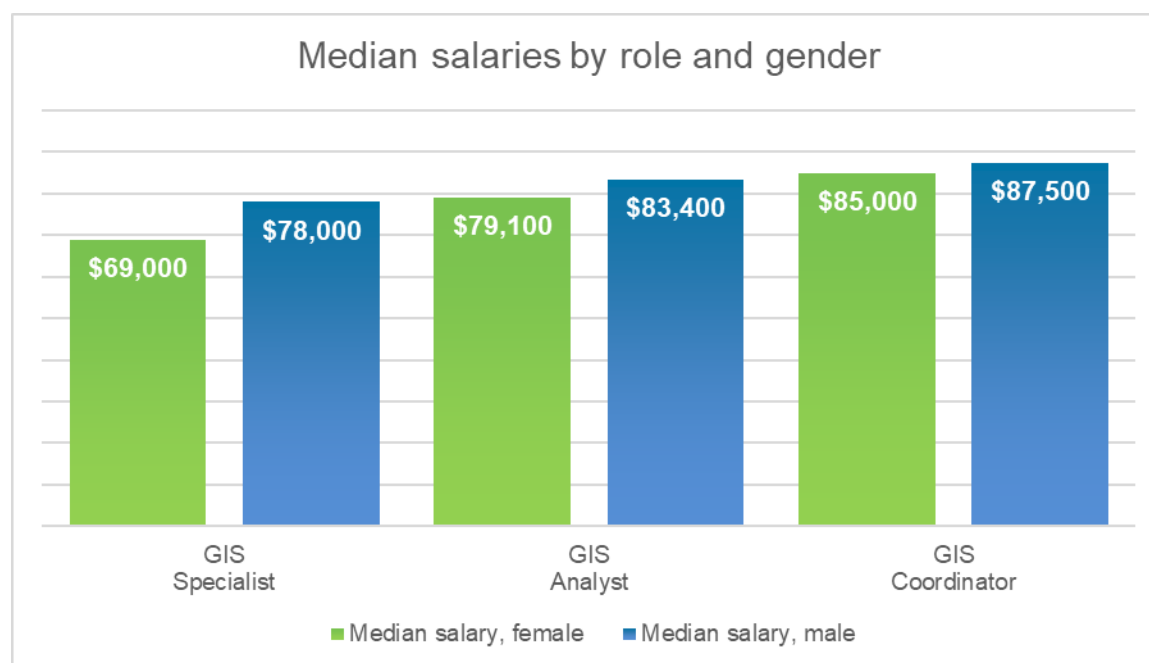
There could be some correlation between the GISP and overall work experience as 71% of respondents with their GISP have 15 years or more of experience.

## Gender identity

Respondents were asked to choose one or more gender identities, describe their own identity, or choose not to answer. The numbers reported here include any respondents who included the listed gender identity as either their only gender or one of their selections. 3% of respondents preferred not to answer.

Gender identity	Percent of responses	Median salary	Bottom third	Top third
Female	33%	\$79,100	\$69,800	\$86,300
Male	63%	\$86,700	\$78,000	\$102,300

The numbers reported are stark, but they are also consistent with general trends seen in the professional world. GIS professionals who identify as female earn a median salary over \$7,600 below their male peers (10% less). The charts below illustrate the disparities per job titles that had enough respondents to meet the reporting threshold.



Job title	Median salary, female	Median salary, male	Disparity	On-the-dollar
GIS Specialist	\$69,000	\$78,000	\$9,000	\$0.88
GIS Analyst	\$79,100	\$83,400	\$4,300	\$0.95
GIS Coordinator	\$85,000	\$87,500	\$2,500	\$0.97

79% of respondents who reported being a GIS Manager identify as male. 67% of respondents who reported being a GIS Developer identify as male.

Of the top earners, 81% identify as male, 19% identify as female, and 5% preferred not to answer.

Of the respondents reporting a salary of \$100,000 or more, 14% are female and 86% are male or prefer not to answer.

### Disability or other chronic condition

Job titles varied across the board for those respondents that identified as a person with a disability or other chronic condition. There was a \$5,000 difference in reported median salary between respondents who did and did not report living with a disability or other chronic condition.

Disability	Percent of responses	Median salary	Bottom third	Top third
Yes	6%	\$80,000	\$74,600	\$89,000
Prefer not to answer	4%	\$119,300	\$71,000	\$130,000
No	89%	\$85,000	\$75,000	\$95,000

### Race and ethnic identity

Respondents were able to choose one or more racial and ethnic identities, describe their own identity, or choose not to answer. Unlike in 2020 and 2022, there was not a large enough sample size to report data based on race/ethnic identity.

### Military service

There was not a large enough sample size to report data based on military service.

## Respondent comments

### Emerging technologies

Respondents were asked about what emerging tech they were excited about. Popular topics includes AI (machine learning, ChatGPT, etc.), LiDAR, drones, and 3D GIS.

### Additional comments

Respondents could provide open-ended comments at the end of the survey. Within the comments were some reflections on the flow of students through higher education GIS programs and what skills are and are not being taught, the need for better classifications of GIS roles in general and within organizations, and adjusting the survey to allow better reporting of the specific GIS and analysis tools respondents use.

## Conclusions

Most responses (58%) to this survey came from GIS professionals working in the Government Sector, while 34% were from the Private Sector and 8% from Education and Nonprofits. The median reported salary was \$85,000, which was up from an inflation-adjusted 2022 reported median of \$81,300 but slightly down from an inflation-adjust 2020 reported median of \$85,600.

The middle third of 2024 salaries fell between \$75,000 and \$95,000. The highest reported salaries by GIS position were GIS Coordinator, Developer, and Manager.

Nearly 60% of respondents had at least 10 years of GIS/Surveying experience. About a quarter had at least 20 years, and about a fifth had less than 5 years. Median salaries based on experience had a consistent increase over time, with a larger median increase around the 15-year mark.

Several GIS skills and proficiencies appear correlated to higher incomes, including but not limited to SQL Server or other DBMS, web GIS administration, application development, 3D GIS, and AI/machine learning. A higher collective quantity and level of proficiencies also appears positively related to higher median salaries.

### *Statement on equity*

The Consortium's mission, to develop and support the GIS/LIS community in Minnesota for the benefit of our people and contributors, does and should include every GIS professional. The responses on gender identity and disability status reveal that our industry is not immune to the pervasive pay gaps seen in the United States. The Consortium will use this information, along with all the data collected in the survey, to work to ensure that our mission applies to all our members.

### *Acknowledgements*

The Minnesota GIS/LIS Consortium Board of Directors thanks the 236 members that contributed their data for this report. Without their participation, this report would not have been possible!

### *Report prepared by*

The MN GIS/LIS Professional Development Committee  
co-authors: Heather Amsbaugh, John Nerge, and Mandy Olson

# Supplemental materials

## Survey questions

*\* refers to a required question*

### Past participation

#### Have you previously participated in a MN GIS/LIS Salary Survey? \*

*choose all that apply*

- |  |                                 |
|--|---------------------------------|
| <input type="checkbox"/> 2022 survey       | <input type="checkbox"/> No     |
| <input type="checkbox"/> 2020 survey       | <input type="checkbox"/> Unsure |
| <input type="checkbox"/> An earlier survey |                                 |

### Your job

#### Which of the following best describes your job position? \*

*Choose one*

- |   |   |
|---|---|
| <input type="checkbox"/> GIS Intern/Seasonal        | <input type="checkbox"/> Surveyor                             |
| <input type="checkbox"/> GIS/Engineering Technician | <input type="checkbox"/> Educator/Trainer                     |
| <input type="checkbox"/> GIS/CAD/IT Systems Support | <input type="checkbox"/> Business Analyst                     |
| <input type="checkbox"/> GIS Specialist             | <input type="checkbox"/> Database Administrator               |
| <input type="checkbox"/> GIS Analyst                | <input type="checkbox"/> Independent Contractor               |
| <input type="checkbox"/> GIS Consultant             | <input type="checkbox"/> IT Manager/Professional              |
| <input type="checkbox"/> GIS Developer              | <input type="checkbox"/> Natural Resources Specialist/Manager |
| <input type="checkbox"/> GIS Coordinator            | <input type="checkbox"/> Software Architect                   |
| <input type="checkbox"/> GIS Manager                | <input type="checkbox"/> Other (please describe)              |

#### What is your company's primary sector? \*

*Choose one*

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> Education  | <input type="checkbox"/> Private       |
| <input type="checkbox"/> Government | <input type="checkbox"/> Self-employed |
| <input type="checkbox"/> Nonprofit  |  |

#### What level of government \*

*(conditional, if respondent chose Government for primary sector)*

*Choose one*

- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Local           | <input type="checkbox"/> Federal |
| <input type="checkbox"/> County/Regional | <input type="checkbox"/> Tribal  |
| <input type="checkbox"/> State           |                                  |

**What level of education? \***

*(conditional, if respondent chose Education for primary sector)*

Choose one

- K12
- Higher education
- Professional Trainer
- Other (please describe)

**What areas in the private sector? \***

*(conditional, if respondent chose Private for primary sector)*

Choose one

- Architecture, Engineering, & Construction (AEC)
- Business and commercial
- Software development and engineering
- None of these
- Other (please describe)

**In what areas do you work or specialize? \***

Choose all that apply

- Agriculture
- Archaeology or cultural resources
- Architecture, Engineering, & Construction (AEC)
- Business marketing, sales, siting, and logistics
- Contaminated site assessment or remediation
- Defense and intelligence
- E911 or NextGen 911
- Elections and politics
- Geology
- Government (local or regional)
- Government (state or federal)
- Government (tribal)
- Health and human services
- Higher education
- Information technology
- Insurance
- K12 education
- Mining
- Natural resources
- Planning and land use
- Public relations
- Public safety
- Real estate
- Recreation
- Surveying and land records
- Transportation
- Utilities and energy infrastructure
- Water resources and hydrology
- None of these areas

**What is your employment ZIP code? \***

*5-digit ZIP*

**Which region is your employer's office located in? \***

*Choose one*

[View a reference map](#)

- Northwest
- Northeast
- Central
- Metro
- Southwest
- South Central
- Southeast
- Outside Minnesota (please describe)

**Where do you primarily work? \***

*Choose one*

- Remote full time
- Hybrid, in office 1-3 days per month
- Hybrid, in office 1-2 days per week
- Hybrid, in office 3-4 days per week
- In office, occasional remote work
- In office, no remote work

Your GIS use

**What GIS software do you primarily use? \***

*Choose one*

- ArcGIS Desktop (aka ArcMap)
- ArcGIS Pro
- ArcGIS Enterprise
- ArcGIS for Office
- ArcGIS for SharePoint
- ArcGIS Online
- Autodesk Map 3D
- Azure Maps
- BatchGeo
- Bing Maps API
- Carto
- CityMapper
- ERDAS Imagine
- Fulcrum
- Global Mapper
- Google Earth Pro
- Google Maps API
- GRASS
- MapBox
- MapInfo Pro
- Maptitude
- OpenStreetMap
- Oracle Spatial
- PostGIS
- QGIS
- Saga GIS
- Salesforce Maps
- Scribble Maps
- Smallworld
- Surfer
- None of these
- Other (please specify)

**What additional GIS software do you use? \***

*Choose all that apply*

- |  |   |
|--|---|
| <input type="checkbox"/> ArcGIS Desktop (aka ArcMap) | <input type="checkbox"/> Google Maps API        |
| <input type="checkbox"/> ArcGIS Pro                  | <input type="checkbox"/> GRASS                  |
| <input type="checkbox"/> ArcGIS Enterprise           | <input type="checkbox"/> MapBox                 |
| <input type="checkbox"/> ArcGIS for Office           | <input type="checkbox"/> MapInfo Pro            |
| <input type="checkbox"/> ArcGIS for SharePoint       | <input type="checkbox"/> Maptitude              |
| <input type="checkbox"/> ArcGIS Online               | <input type="checkbox"/> OpenStreetMap          |
| <input type="checkbox"/> Autodesk Map 3D             | <input type="checkbox"/> Oracle Spatial         |
| <input type="checkbox"/> Azure Maps                  | <input type="checkbox"/> PostGIS                |
| <input type="checkbox"/> BatchGeo                    | <input type="checkbox"/> QGIS                   |
| <input type="checkbox"/> Bing Maps API               | <input type="checkbox"/> Saga GIS               |
| <input type="checkbox"/> Carto                       | <input type="checkbox"/> Salesforce Maps        |
| <input type="checkbox"/> CityMapper                  | <input type="checkbox"/> Scribble Maps          |
| <input type="checkbox"/> ERDAS Imagine               | <input type="checkbox"/> Smallworld             |
| <input type="checkbox"/> Fulcrum                     | <input type="checkbox"/> Surfer                 |
| <input type="checkbox"/> Global Mapper               | <input type="checkbox"/> None of these          |
| <input type="checkbox"/> Google Earth Pro            | <input type="checkbox"/> Other (please specify) |

**What percentage of your time do you spend: \***

*Options*

- |   |   |
|---|---|
| <input type="checkbox"/> None                 | <input type="checkbox"/> 25% to less than 50% |
| <input type="checkbox"/> Less than 10%        | <input type="checkbox"/> 50% to less than 75% |
| <input type="checkbox"/> 10% to less than 25% | <input type="checkbox"/> 75% or more          |

*Areas*

- |   |   |
|---|---|
| <input type="checkbox"/> Using GIS and related desktop applications | <input type="checkbox"/> Performing data analytics    |
| <input type="checkbox"/> Using GIS and related web applications     | <input type="checkbox"/> Computer programming         |
| <input type="checkbox"/> Developing GIS scripts and tools           | <input type="checkbox"/> Collecting data in the field |

**Your salary**

**What is your job schedule? \***

*Choose one*

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> Full time  | <input type="checkbox"/> Contract                    |
| <input type="checkbox"/> Part time  | <input type="checkbox"/> Seasonal or other temporary |
| <input type="checkbox"/> Internship |  |

**What is your base annual income? \***

**Are you paid annually or by the hour? \***

*(Conditional, if respondent selected full time)*

**What is your base hourly rate? \***

*(Conditional, if respondent selected hourly or not full time or contract)*

**How many hours a year do you work? \***

*(Conditional, if respondent selected hourly or not full time or contract)*

Your work experience

**How many years of GIS/Survey work experience do you have? \***

*Choose one*

- |  |   |
|--|---|
| <input type="checkbox"/> Less than 1 year              | <input type="checkbox"/> 10 years to less than 15 years |
| <input type="checkbox"/> 1 year to less than 3 years   | <input type="checkbox"/> 15 years to less than 20 years |
| <input type="checkbox"/> 3 years to less than 5 years  | <input type="checkbox"/> 20 years to less than 25 years |
| <input type="checkbox"/> 5 years to less than 10 years | <input type="checkbox"/> 25 years or more               |

**Do you hold any professional certifications? \***

*Choose all that apply*

- |  |  |
|--|--|
| <input type="checkbox"/> GISP                                    | <input type="checkbox"/> Professional Engineer                       |
| <input type="checkbox"/> FAA Part 107 sUAS Certification         | <input type="checkbox"/> NENA National Emergency Number Professional |
| <input type="checkbox"/> Professional Surveyor                   | <input type="checkbox"/> AICP Certified Planner                      |
| <input type="checkbox"/> Esri Technical Certification            | <input type="checkbox"/> IAAO Cadastral Mapping Scientist            |
| <input type="checkbox"/> ASPRS Photogrammetrist or Technologist  | <input type="checkbox"/> None of these                               |
| <input type="checkbox"/> ASPRS Mapping Scientist or Technologist | <input type="checkbox"/> Other (please describe)                     |
| <input type="checkbox"/> Project Management Professional (PMP)   |  |

**Is your GISP current? \***

*(Conditional, if respondent selected if GISP as a professional certification)*

- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

**How would you rate your proficiency in the following areas? \***

*Options*

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> No experience | <input type="checkbox"/> Intermediate |
| <input type="checkbox"/> Beginner      | <input type="checkbox"/> Advanced     |

*Areas*

- |   |   |
|---|---|
| <input type="checkbox"/> Desktop GIS software | <input type="checkbox"/> Application development        |
| <input type="checkbox"/> Cartography          | <input type="checkbox"/> LiDAR                          |
| <input type="checkbox"/> Data analysis        | <input type="checkbox"/> GNSS or mobile data collection |

- |   |  |
|---|--|
| <input type="checkbox"/> Python                   | <input type="checkbox"/> sUAS drones, mission planning and operation |
| <input type="checkbox"/> SQL Server or other DBMS | <input type="checkbox"/> uUAS drones, data management and analysis   |
| <input type="checkbox"/> Remote sensing           | <input type="checkbox"/> 3D GIS or digital twins                     |
| <input type="checkbox"/> Web GIS mapping          | <input type="checkbox"/> Machine learning or deep learning           |
| <input type="checkbox"/> Web GIS administration   | <input type="checkbox"/> AI or natural language processing tools     |
| <input type="checkbox"/> Open source GIS          |  |

**What emerging GIS and related trends are you excited about?**

*Optional*

Your education background

**Are you currently a student at an accredited institution? \***

*Choose one*

- |  |   |
|--|---|
| <input type="checkbox"/> Not currently                             | <input type="checkbox"/> Yes, working toward a Bachelors degree |
| <input type="checkbox"/> Yes, non-degree coursework                | <input type="checkbox"/> Yes, working toward a Masters degree   |
| <input type="checkbox"/> Yes, working toward and Associated degree | <input type="checkbox"/> Yes, working toward a Ph. D.           |

**What is your highest level of education? \***

*Choose one*

- |  |   |
|--|---|
| <input type="checkbox"/> Did not graduate High School diploma or receive GED | <input type="checkbox"/> Bachelors degree |
| <input type="checkbox"/> High School diploma or GED                          | <input type="checkbox"/> Masters degree   |
| <input type="checkbox"/> Some college, no degree                             | <input type="checkbox"/> Ph.D.            |
| <input type="checkbox"/> Associates degree                                   |   |

**In what field(s) did you earn your Associates degree? \***

*(Conditional, visible if respondent select Associates as highest education level)*

*Choose all that apply*

- |  |  |
|--|--|
| <input type="checkbox"/> Biological Sciences                   | <input type="checkbox"/> Health Information or Medical Records   |
| <input type="checkbox"/> Business Administration or Management | <input type="checkbox"/> Information Technology                  |
| <input type="checkbox"/> Computer Science                      | <input type="checkbox"/> Liberal Arts and Sciences or Humanities |
| <input type="checkbox"/> Construction Engineering              | <input type="checkbox"/> Medical or Clinical Assistant           |
| <input type="checkbox"/> Criminal Justice                      | <input type="checkbox"/> Nursing or Psychology                   |
| <input type="checkbox"/> General Studies                       | <input type="checkbox"/> None of these                           |
| <input type="checkbox"/> Health Care Management                | <input type="checkbox"/> Other (please describe)                 |

**In what field(s) did you earn your highest degree? \***

*(Conditional, visible if respondent selected Bachelors, Master, or Ph. D. as highest education level)*

*Choose all that apply*

- |  |  |
|--|--|
| <input type="checkbox"/> Anthropology or History | <input type="checkbox"/> GIS                       |
| <input type="checkbox"/> Biology                 | <input type="checkbox"/> Landscape Architecture    |
| <input type="checkbox"/> Business                | <input type="checkbox"/> Mathematics               |
| <input type="checkbox"/> Cartography             | <input type="checkbox"/> Natural Resources         |
| <input type="checkbox"/> Civil Engineering       | <input type="checkbox"/> Oceanography              |
| <input type="checkbox"/> Computer Science        | <input type="checkbox"/> Planning                  |
| <input type="checkbox"/> Education               | <input type="checkbox"/> Political Science         |
| <input type="checkbox"/> English                 | <input type="checkbox"/> Public Administration     |
| <input type="checkbox"/> Engineering             | <input type="checkbox"/> Recreation Administration |
| <input type="checkbox"/> Environmental Science   | <input type="checkbox"/> Surveying                 |
| <input type="checkbox"/> Forestry                | <input type="checkbox"/> Urban Studies             |
| <input type="checkbox"/> Geography               | <input type="checkbox"/> None of these             |
| <input type="checkbox"/> Geology                 | <input type="checkbox"/> Other (please describe)   |

**Have you earned any of the following? \***

*Choose all that apply*

- |  |  |
|--|--|
| <input type="checkbox"/> AA or technical GIS certificate | <input type="checkbox"/> IT certificate          |
| <input type="checkbox"/> Undergraduate GIS certificate   | <input type="checkbox"/> None of these           |
| <input type="checkbox"/> Graduate GIS certificate        | <input type="checkbox"/> Other (please describe) |
| <input type="checkbox"/> GIS minor                       |  |

Your demographics

**What is your age? \***

**Which of the following best describe your gender identity? \***

*Choose all that apply*

- |   |  |
|---|--|
| <input type="checkbox"/> Female                           | <input type="checkbox"/> Non-binary              |
| <input type="checkbox"/> Male                             | <input type="checkbox"/> Prefer not to answer    |
| <input type="checkbox"/> Gender Variant or non-conforming | <input type="checkbox"/> Prefer to self-describe |

**Which of the following best describe your racial and ethnic identity? \***

*Choose all that apply*

- American Indian or Alaskan Native
- Asian or Indian
- Black or African American
- Hispanic, Latino, or Spanish-origin
- Middle Eastern or North African
- Native Hawaiian or other Pacific Islander
- White
- Prefer not to answer
- Prefer to self-describe

**Do you identify as a person with a disability or other chronic condition? \***

*Choose one*

- Yes
- No
- Prefer not to answer

**Has the Consortium been responsive to your requests for accommodations at workshops, conferences, and events? \***

*(conditional, if respondent chose yes for having a disability or other chronic condition)*

*Choose one*

- Yes
- No
- Prefer not to answer
- I have not made any requests

**Have you ever served in the US Armed Forces, Reserves, or National Guard? \***

*Choose one*

- Yes
- No
- Prefer not to answer

**When did you serve? \***

*(conditional, if respondent chose yes for serving in the armed forces)*

*Choose all that apply*

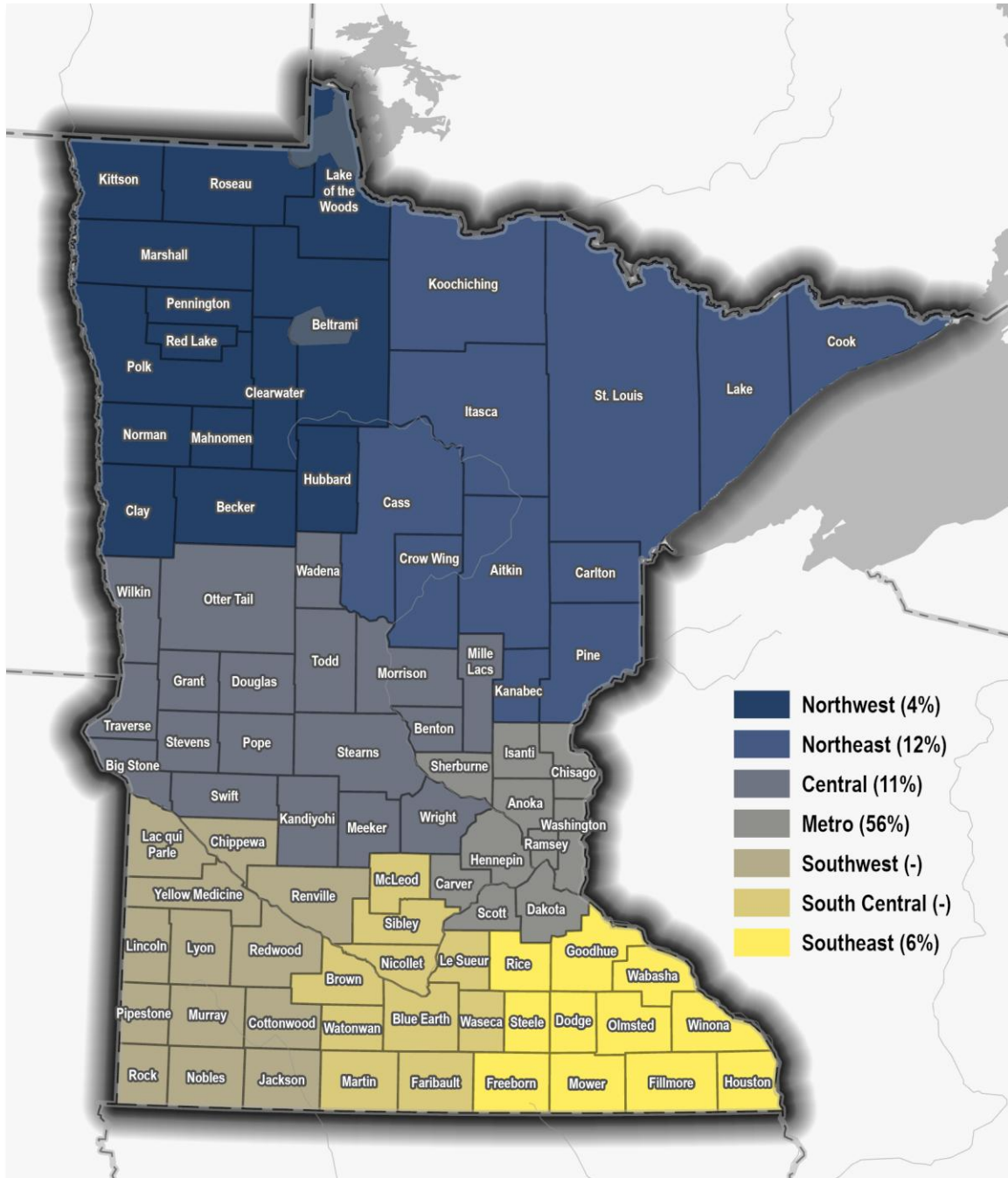
- September 2001 or later
- August 1990 to August 2001 (including Persian Gulf War)
- May 1975 to July 1990
- Vietnam era (August 1964 to April 1974)
- March 1974 or earlier
- Prefer not to answer

**Do you have any additional comments related to your responses to this survey?**

*Optional*

## Survey response map, regions

This map shows the regions used for the 2024 Salary Survey and the response breakdowns.



Map source: Minnesota Emergency Communications Board (MNECB): [www.mnecb.org/148/Regions](http://www.mnecb.org/148/Regions)  
Recolored for color blindness using ArcGIS Pro Cividis color ramp

## Survey response map, ZIP codes

This map shows the distribution of survey responses by ZIP code. To preserve anonymity, the map excludes any ZIP codes that contained only a single response.

