

Selecting GIS Software Without Regret

A Vendor-Neutral Guide for Comparing GIS Solutions

Based on Operational Needs

Introduction

Selecting GIS software is not about finding the system with the longest feature list.

It is about finding the system that:

- Solves your agency's problems
- Employees will actually use
- Protects your data
- Fits your budget
- Integrates with your existing systems
- Can be maintained for years

A vendor demonstration can make almost any GIS look impressive.

The real test is simple:

Can this system make our agency's work easier, faster, and better?

Use this guide to evaluate GIS based on what matters to your agency, not what a vendor wants to sell you.

1. Start With Your Needs

Do not begin with vendor demonstrations.

Begin with your agency.

Define what GIS must accomplish

- We have identified the business problems GIS must solve. _____
- We know who will use the system. _____
- We know what information users need. _____
- We know which workflows GIS must support. _____
- We know how we will measure success. _____

Our five most important requirements

1. _____

2. _____

3. _____
4. _____
5. _____

Remember

Do not let a vendor's feature list become your requirements list.

2. Evaluate Ease of Use

A powerful GIS that employees do not use has little value.

Have employees perform common tasks.

- Find an asset
- Search by address
- Search by asset number
- View asset information
- Measure distance
- Create a report
- Update an asset
- Find maintenance history
- Locate an asset in the field

Ask

- Can normal employees use the system? _____
- Is specialized GIS training required? _____
- Can new employees learn it quickly? _____
- Can users complete common tasks without help? _____
- Is the system easier than the process it replaces? _____

Test every vendor the same way.

Do not let the salesperson perform the work for you.

3. Evaluate Field Operations

For water, sewer, stormwater, and other infrastructure agencies, field use is critical.

Verify that the system can:

- Run on phones and tablets
- Find nearby assets
- Display asset information
- Record inspections

- Update asset information
- Capture photographs
- Record field changes
- Work with available connectivity
- Support the devices your agency already owns

Ask field employees

“Would you actually use this system in the field?”

Their answer may be more important than the vendor's technical presentation.

4. Evaluate Your Asset Information

A GIS should provide more than a symbol on a map.

Select an actual asset and see what information users can access.

Example: Water valve

- Location
- Asset ID
- Type
- Size
- Installation date
- Operating status
- Inspection history
- Maintenance history
- Work orders
- Photographs
- Related documents

Ask

“Can our employees get the information they need without leaving the GIS?”

Also determine whether employees can easily update that information.

5. Evaluate Your Existing Data

Do not assume that a new GIS requires starting over.

Your agency may already have valuable information.

Determine whether the system can work with:

- Existing GIS files
- Shapefiles
- Geodatabases
- CAD files
- GPS data
- Spreadsheets

- REST services
- GeoJSON
- WMS
- Other existing data

Ask

- Can we import our existing data? _____
- Can we export our data? _____
- Who owns the data? _____
- Can we access the data without the vendor? _____
- What happens if we change vendors? _____
- What data conversion is required? _____

Critical question

“If we stop using your software, can we take our data with us?”

Get the answer in writing.

6. Evaluate Integration

Your GIS should not become another isolated information system.

Identify the systems GIS needs to work with.

- CMMS
- Work orders
- Billing
- Permitting
- Document management
- CCTV
- Asset management
- ERP
- Customer information
- Other agency systems

For each integration, ask:

- Is it currently supported? _____
- Is it included in the price? _____
- Is additional programming required? _____
- Who maintains it? _____
- What happens when the other system is upgraded? _____
- What is the ongoing cost? _____

The goal

Information should move with the work instead of employees entering the same information into multiple systems.

7. Evaluate Data Maintenance

One of the most important questions is:

“How will our GIS stay current?”

Determine how the system handles:

- New assets
- Retired assets
- Location changes
- Attribute changes
- Field corrections
- Construction updates
- Inspections
- Quality control

Determine who is responsible

- Agency staff _____
- GIS specialist _____
- Vendor _____
- Consultant _____
- Combination _____

Ask

“Who will maintain this GIS five years from now?”

If the answer is unclear, you do not yet have a complete GIS plan.

8. Evaluate Security and Reliability

Ask where and how your information is protected.

- Where is the data hosted? _____

- Is data encrypted? _____
- How is user access controlled? _____
- Can permissions be assigned by role? _____
- Are backups performed? _____
- How often? _____
- Where are backups stored? _____
- How is data restored? _____
- Are administrative actions logged? _____
- How are former employees removed? _____
- Can GIS data be downloaded? _____

Also ask:

“What happens if the system becomes unavailable?”

You should understand the recovery process before you need it.

9. Calculate the Real Cost

Do not compare GIS systems using the software price alone.

Calculate the **total cost of ownership**.

Initial costs

- Software
- Implementation
- Data conversion
- Data cleanup
- Data creation
- Integration
- Training
- Hardware

Ongoing costs

- Subscription or licenses
- Hosting

- Maintenance
- Support
- Upgrades
- Additional users
- Additional modules
- Custom programming
- Data maintenance
- Integration maintenance
- Internal staff time

Five-year cost

Vendor A: \$ _____

Vendor B: \$ _____

Vendor C: \$ _____

Then ask:

“What will this system cost us over ten years?”

Also calculate the cost of doing nothing.

Consider:

- Employee time
- Duplicate data entry
- Paper processes
- Outdated information
- Contractor costs
- Lost institutional knowledge
- Delayed maintenance
- Poor emergency response

The cheapest software is not always the lowest-cost solution.

10. Test the Vendor With Your Work

A vendor demonstration should not be a sales presentation.

It should be a test.

Give every vendor the same tasks.

Demonstration test

- Find a valve
- Find a manhole
- Find a hydrant
- Find an address
- View asset information
- Find maintenance history
- Create a work order
- Perform an inspection
- Update an asset
- Produce a report
- Trace a utility
- Locate an asset from the field
- View a related document

Score each task

1 — Very difficult

2 — Difficult

3 — Acceptable

4 — Easy

5 — Very easy

Task	Vendor A	Vendor B	Vendor C
Find asset	___	___	___
View information	___	___	___
Update asset	___	___	___
Field use	___	___	___
Report	___	___	___
Work order	___	___	___
Utility tracing	___	___	___

Important

Score the employee experience, not the salesperson's presentation.

11. Look Beyond the Demonstration

A successful demonstration does not guarantee a successful implementation.

Ask the vendor:

- What does the agency have to provide?
- What does the vendor provide?
- How long will implementation take?
- Who performs data conversion?
- Who cleans the data?
- Who performs testing?
- Who trains employees?
- What happens after go-live?
- What could cause the project to fail?
- What is not included in the quoted price?

Ask for references.

Then ask those customers:

- Did implementation stay on schedule?
- Did it stay within budget?
- Do employees actually use it?
- Is support responsive?
- Is the system easy to maintain?
- Have prices increased?
- Are integrations reliable?
- What surprised you after purchase?
- What would you do differently?
- Would you buy it again?

Most important:

“What do you wish you had known before you bought it?”

12. Watch for Red Flags

Be cautious if a vendor:

- Avoids discussing total cost
- Cannot explain data ownership
- Cannot demonstrate your workflows
- Requires extensive customization
- Cannot explain data export
- Has unclear implementation responsibilities
- Cannot provide comparable references
- Requires unnecessary hardware

- Uses technical language instead of answering questions
- Promises an easy implementation without explaining agency responsibilities
- Focuses more on technology than your business problems

One major warning sign

The vendor talks more about how impressive the software is than about what your employees need

13. Use a Weighted Scorecard

Not every requirement has the same importance.

Assign a weight to each category.

Category	Weight	Vendor A	Vendor B	Vendor C
Ease of use	20%	___	___	___
Field operations	15%	___	___	___
Asset management	15%	___	___	___
Integration	10%	___	___	___
Data compatibility	10%	___	___	___
Data maintenance	10%	___	___	___
Security	5%	___	___	___
Implementation	5%	___	___	___
Support	5%	___	___	___
Five-year cost	5%	___	___	___
Total	100%	___	___	___

Adjust the weights to match your agency.

Remember

Do not allow a low price to compensate for a system employees cannot use.

Likewise, do not pay for expensive capabilities that do not solve important problems.

14. Final Selection Checklist

Before signing a contract, confirm:

- Our requirements were defined before vendor selection. _____
- Employees participated in the evaluation. _____
- Vendors demonstrated our actual workflows. _____
- Ease of use was evaluated. _____
- Field use was evaluated. _____
- Existing data was evaluated. _____
- Data ownership was confirmed. _____
- Data export was confirmed. _____
- Integrations were evaluated. _____
- Data maintenance was addressed. _____
- Security was evaluated. _____
- Five-year cost was calculated. _____
- Implementation responsibilities are clear. _____
- Training and support are clear. _____
- References were contacted. _____
- Risks were identified. _____
- Success measurements were established. _____
- The final decision is based on operational value. _____

The General Manager's Final Test

Before choosing a GIS, ask these five questions:

1. Will our employees actually use it?
2. Will it make important work easier or faster?
3. Will we be able to maintain accurate information?
4. Do we understand the true long-term cost?
5. Will this system still make sense five and ten years from now?

If you cannot answer these questions confidently, you are not ready to buy.

Final Thought

The best GIS is not necessarily the most powerful.

It is not necessarily the least expensive.

It is not necessarily made by the largest technology company.

The best GIS is the one that **solves your agency's problems, fits your employees, protects your information, remains maintainable, and provides measurable value.**

Do not buy the GIS that wins the sales presentation.

Buy the GIS that wins the workday.