

**Procurement Practices
And Principles
For GIS Practitioners
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Procurement Experience

Neil -

- ❖ Prior to MassGIS, experience in the consulting sector
- ❖ Procurements in different kinds of organizations
- ❖ Participating on teams doing procurements
- ❖ Managing increasingly more complex contract projects in increasingly more complex professional roles

Nat –

- ❖ Majority of GIS business is for public sector clients
- ❖ Most work is contracted through competitively bid process
- ❖ Some experience through municipal board involvement

Typical GIS Procurements

1. **Tangible products - Hardware or shrink wrapped software**
2. **Data**
3. **Software Services (e.g., application development)**
4. **Training and technical support**

General Procurement Elements

Written and formally state:

- ✓ **Procurement purpose/objective**
- ✓ **Scope of work/spec for desired product**
- ✓ **Criteria for contract success**
- ✓ **Response requirements**
- ✓ **Clear procurement mechanics**

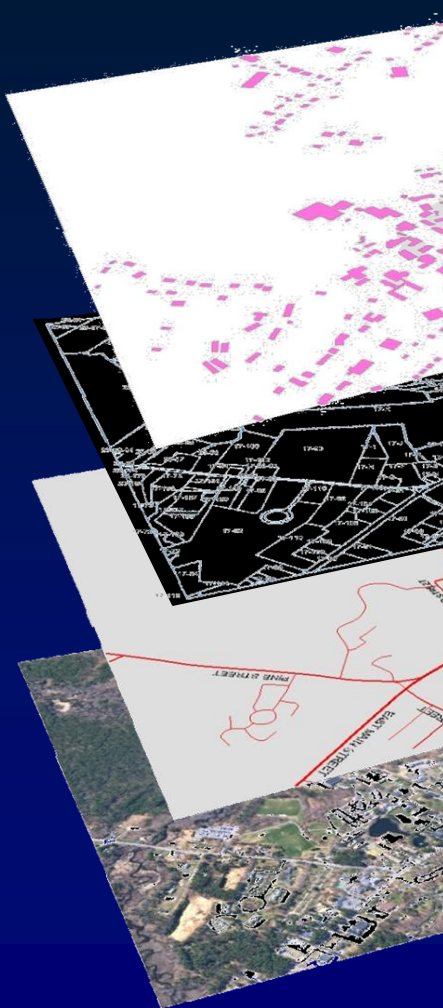
Procuring Tangible Products

1. **Develop specifications based on what uses the product will support**
2. **Make sure that stake holders have input**
3. **Make sure the product will work with your existing HW/SW: type and versions!**
4. **Be sure to get early IT involvement**



Procuring Data

A. Success starts with a well developed scope of work

- 
- ✓ Provide background on project purpose
 - ✓ What features from what source (need details)
 - ✓ Horizontal/vertical accuracy – be realistic...
 - ✓ Attributes and what valid values (domains)
 - ✓ What “rules” and/or standards must be followed
 - ✓ Metadata requirements
 - ✓ Delivery format

Don't tell the contractor how to do their work in a way that constrains potentially beneficial approaches.

Incremental deliverables may be a good idea

Procuring Data

B. Success continues with a well defined and adequately staffed quality assurance (QA) of :

- ✓ Feature geometry (location, topology)
- ✓ Feature completeness
- ✓ Attribute characteristics
- ✓ Conformance to business rules
- ✓ Other elements of spec such as file naming conventions



Consider a Pilot Project

Why?

- ✓ Test and confirm methodologies
- ✓ Confirms cost and specifications
- ✓ Minimizes risks for both your organization and for the consultant
- ✓ May help remove uncertainties

Should:

- ✓ Be up to 5% of project area
- ✓ Include representative mix of the data in the project area
- ✓ Include test of QA procedures
- ✓ Help determine whether what you want is feasible!

Consider a Pilot Project

If Pilot confirms methodologies -

- ✓ Great news!
- ✓ Proceed as planned



If Pilot uncovers problems -

- ✓ Determine how the problems can be resolved
- ✓ Revise written agreement and proceed

Strive to Remove Uncertainty from Your Scope of Work

- ✓ Map feature X will be captured from 347 maps at 1:4800?
- ✓ Deliver quantity X of the desired product
- ✓ Accuracy must be +/- X ft.; must meet national standard <name>
- ✓ Arcs that cross must not create a junction feature (“node”) unless condition X is true.
- ✓ Data must be delivered as shape files in State Plane meters, NAD83, units of US Survey Feet
- ✓ A sun angle less than 30 degrees is not acceptable
- ✓ Attributes must be A, B, & C with the following definitions and valid values
- ✓ List the Business Rules (e.g, if attribute A has value X, then attribute B must have values Y or Z)
- ✓ Provide prospective bidders with representative data



Procure Software

1. Success starts with a well developed statement of what you require (!)

- ✓ Detailed description of the activity the application will support
- ✓ Describe the user interface (perhaps model – but in so doing, don't constrain the design)
- ✓ Describe the application's specific capabilities – and be sure the users have input
- ✓ Specify what documentation you want
- ✓ Be clear on training and technology transfer
- ✓ Beware scope creep!

BUT: Don't tell the contractor how to do their work in a way that constrains potentially beneficial approaches.

Procure Software

2. Success continues with a well defined and adequately staffed testing of:

- ✓ The user interface (do all the GUI features work?)
- ✓ The data involved - does the application successfully process the different types?
- ✓ Various products (e.g, reports (tabular, maps), log files)
- ✓ Performance - on your (!) system

Inadequate staff resources for testing will slow project schedule

Software Projects are the Hardest to Manage

Factors Contributing to Procurement Success:

- ✓ Communication and trust
- ✓ Working knowledge of the technology
- ✓ Spirit vs Letter
- ✓ Plan for the unexpected
- ✓ Realistic expectations
- ✓ Strong intangibles



Mechanical Aids



- ✓ **Project management software**
- ✓ **Regular reports from contractor, with required content**
- ✓ **Capture info from phone conversations**
- ✓ **Tracking mechanism for issues**
- ✓ **Organize all project information in one place**
- ✓ **Report QA results in a standard way**
- ✓ **Internet tools for exchanging data and for project communication**

However, define some means of project progress\status communication

Strength of Risk Factor by Project Type

| | | RISK FACTOR | | | |
|---------------------|-----------------------------|---------------------|-------------------------|--------------------------|---------------------------------|
| | | <u>PROJECT COST</u> | <u>PROJECT SCHEDULE</u> | <u>USER EXPECTATIONS</u> | <u>TECHNOLOGICAL COMPLEXITY</u> |
| PROJECT TYPE | HW/SW Projects | LOW | LOW | MEDIUM | LOW to MEDIUM |
| | Data Projects | MEDIUM | HIGH | MEDIUM | MEDIUM |
| | Application Projects | HIGH | HIGH | HIGH | MEDIUM to HIGH |

Procurement Vehicles

- ✓ Issue a request for proposals (RFP)
- ✓ Request for Quote (RFQ) via a state or federal contract
- ✓ Give your money to someone else (“buy-up” or “buy-in”)
- ✓ Consider doing combined procurement with adjacent community or other agency

Procurement Requirements

Vary depending on:

- ✓ **Size (cost) of the procurement**
- ✓ **Source of the funding**

May be required to:

- ✓ **Seek 3 solicitations**
- ✓ **Advertise**
- ✓ **Modify an existing contract**

Typical RFP Content

- Introduction
- Rules of the procurement
- Specifications for the product(s)
- Deliverable(s)
- Schedule and budget
- Response requirements
- Proposal evaluation criteria and schedule
- Generic procurement requirements (e.g., W/MBE)
- Standard forms

Miscellaneous

- ✓ Know the market (lots of resources on-line)
- ✓ Confer with your peers in other communities
- ✓ Confer with vendors
- ✓ Requests for Information

Revenue Sources

- ✓ General revenue
- ✓ Capital funding
- ✓ Dedicated or Trust accounts
- ✓ Inter-agency
- ✓ Grants



That's all...questions?

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