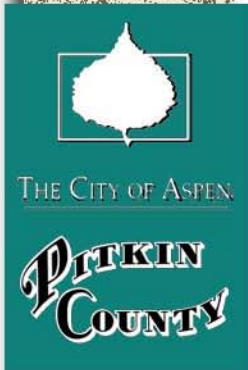


# Keeping Your GIS Fresh

*ideas to keep your GIS effective*



Mary Lynne Lackner, GISP

GIS Manager

City of Aspen & Pitkin County



# Don't Let it Spoil

## c Winter (reflect)

- Analyze customers and numbers

## II Spring (clean)

- Talk to your customers



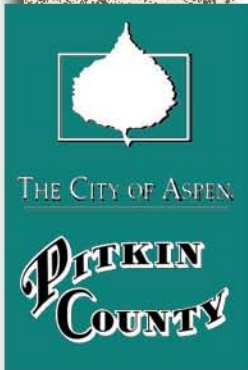
## Summer (grow)

- Five Suggestions for Easy Public Relations
- Additional Thoughts to Keep GIS Fresh



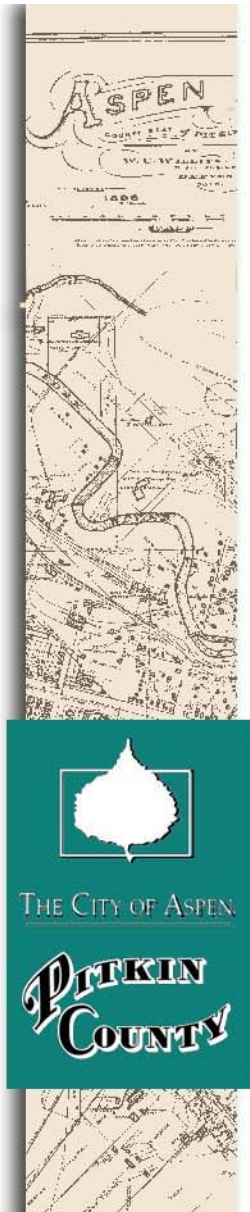
## Fall (harvest)

- Creativity Day



# Pitkin County

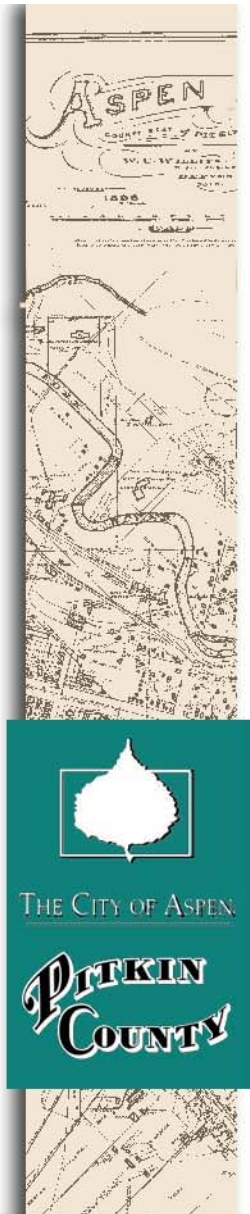
- 990 square miles – 15% private, 85% public land
- 3 municipalities in the County - Aspen, Basalt, Snowmass Village
- 4 ski areas – Aspen Mountain, Aspen Highlands, Buttermilk, Snowmass
- 2000 Population - 14,782 (5,914 in Aspen)





# GIS Department Overview

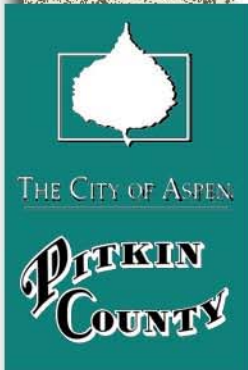
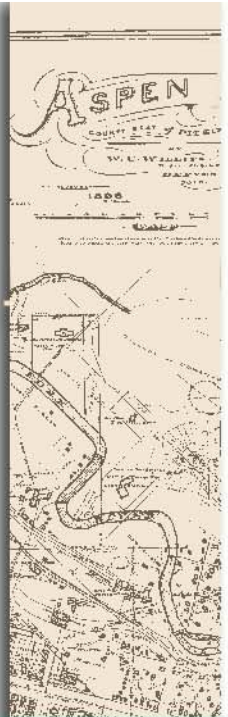
- 3 FTE's and half-time intern
- All resources shared between City and County
- Support all City and County customers
- Public customer service program
- Database maintenance, development, system support, analysis, projects, production, training.
- Track lots of information (staff time, internal and external customers, sales, web use)



# Software

## ESRI Enterprise License Agreement – Feb 2008

- ArcGIS 9.2 - 4 ArcInfo level licenses
- ArcGIS 9.2 - 40 ArcView licenses
- ArcSDE 9.2 / SQL Server 2005
- ArcIMS 9.2



# Don't Let it Spoil

## c Winter (reflect)

- Analyze customers and numbers

## II Spring (clean)

- Talk to your customers



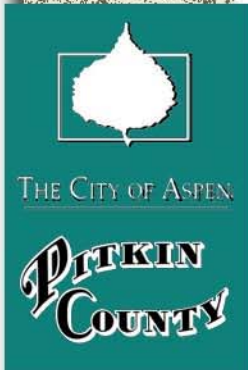
## Summer (grow)

- Five Suggestions for Easy Public Relations
- Additional Thoughts to Keep GIS Fresh



## Fall (harvest)

- Creativity Day

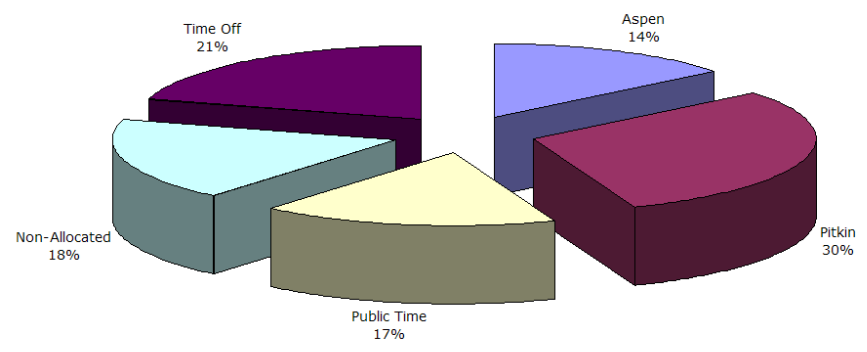
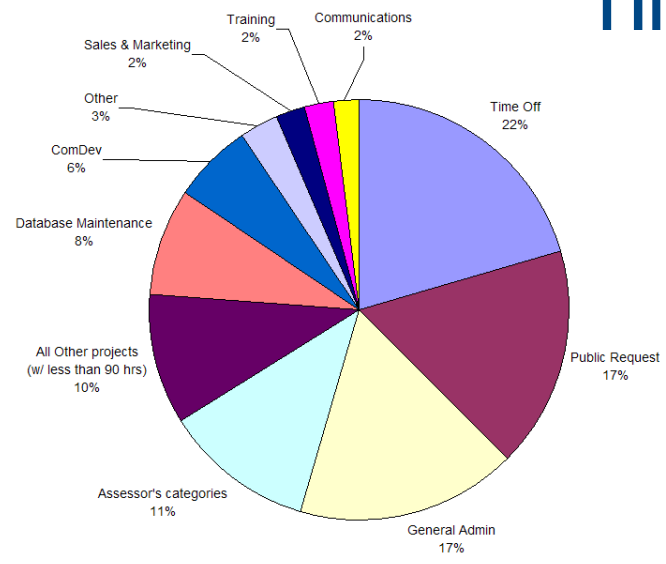




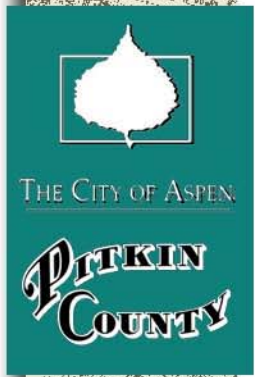
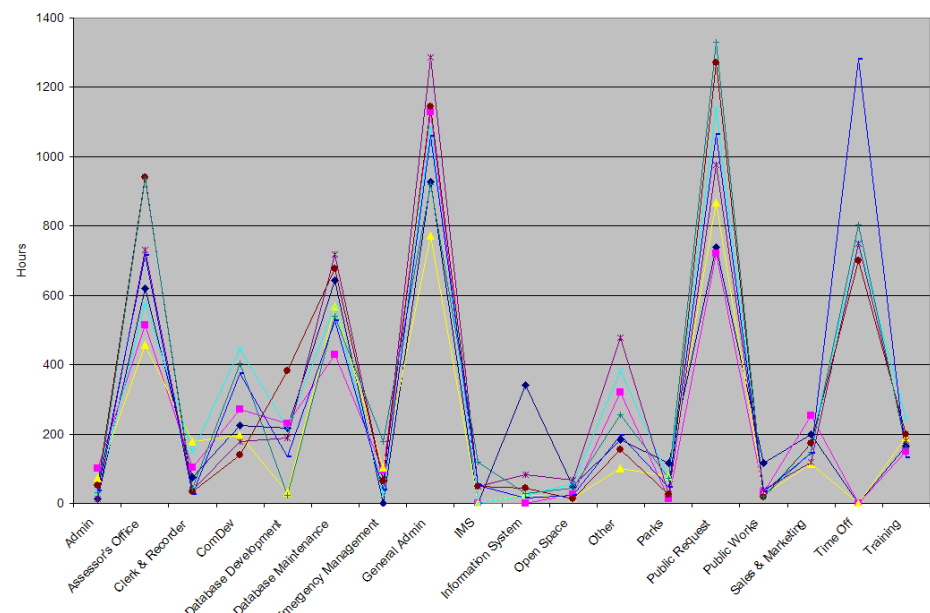
**Total Time Allocation**  
 GIS Workgroup  
 January - December 2007

# TimeTracker

**2007 Time Distribution - All Projects**  
 City and County Total Hours [6240]



**2000 - 2007 Time Comparison**



# 2008 Operating Budget

\$302,900

**14%**  
travel, training, supplies,  
maintenance, repair, support,  
PC replacement, furniture,  
etc.

Chart Area

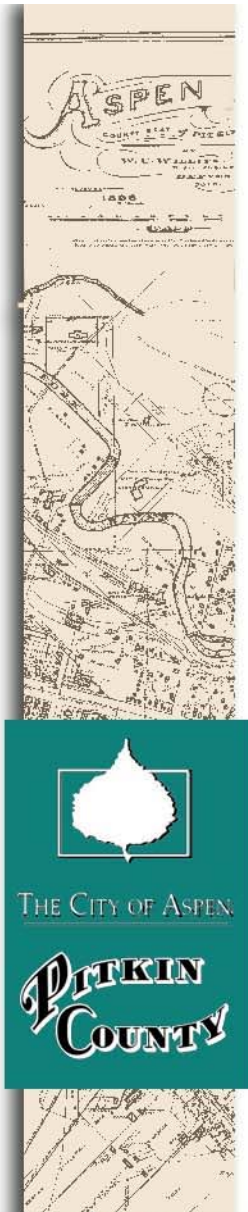
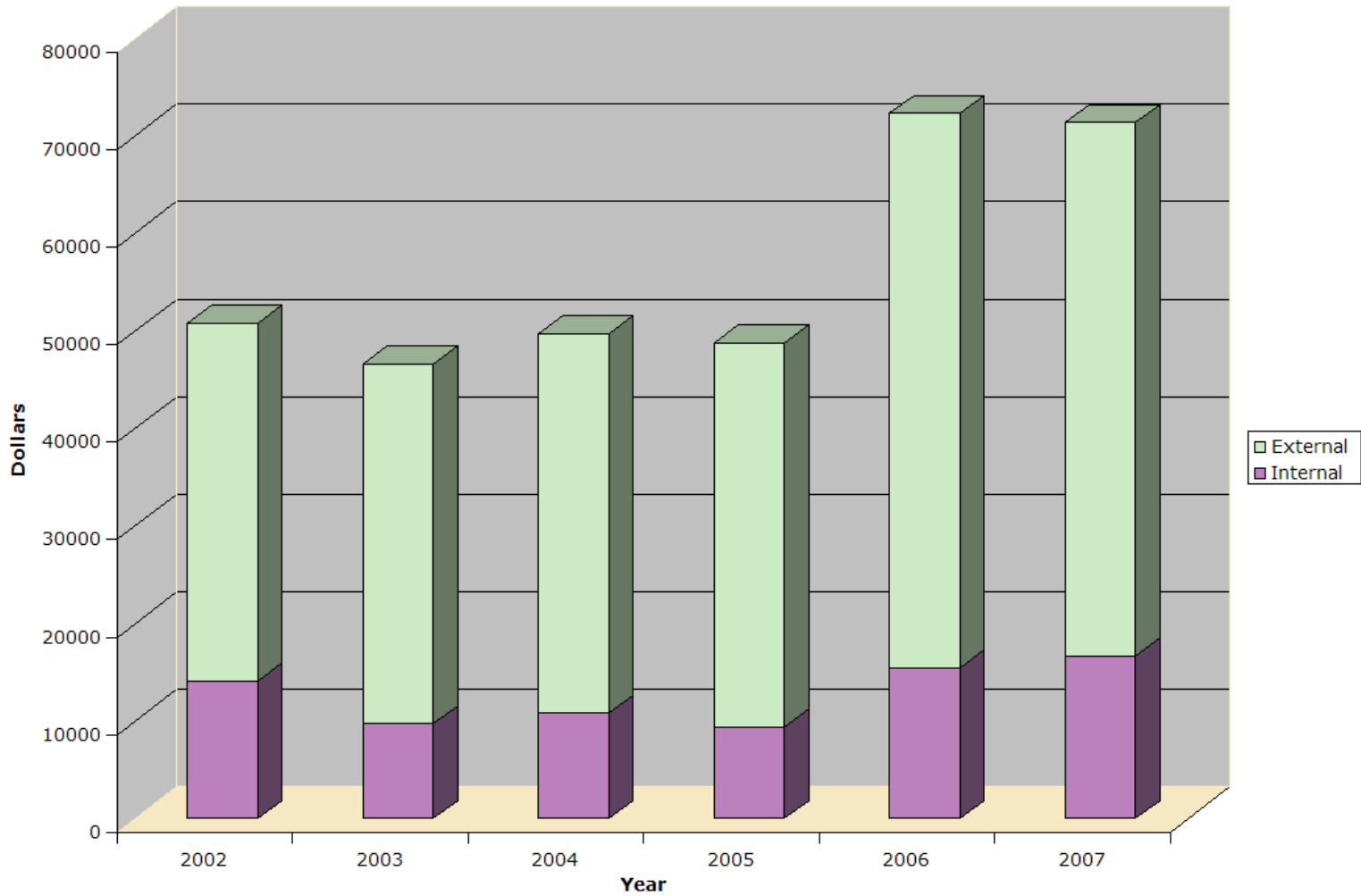


**86%**  
Payroll & Benefits

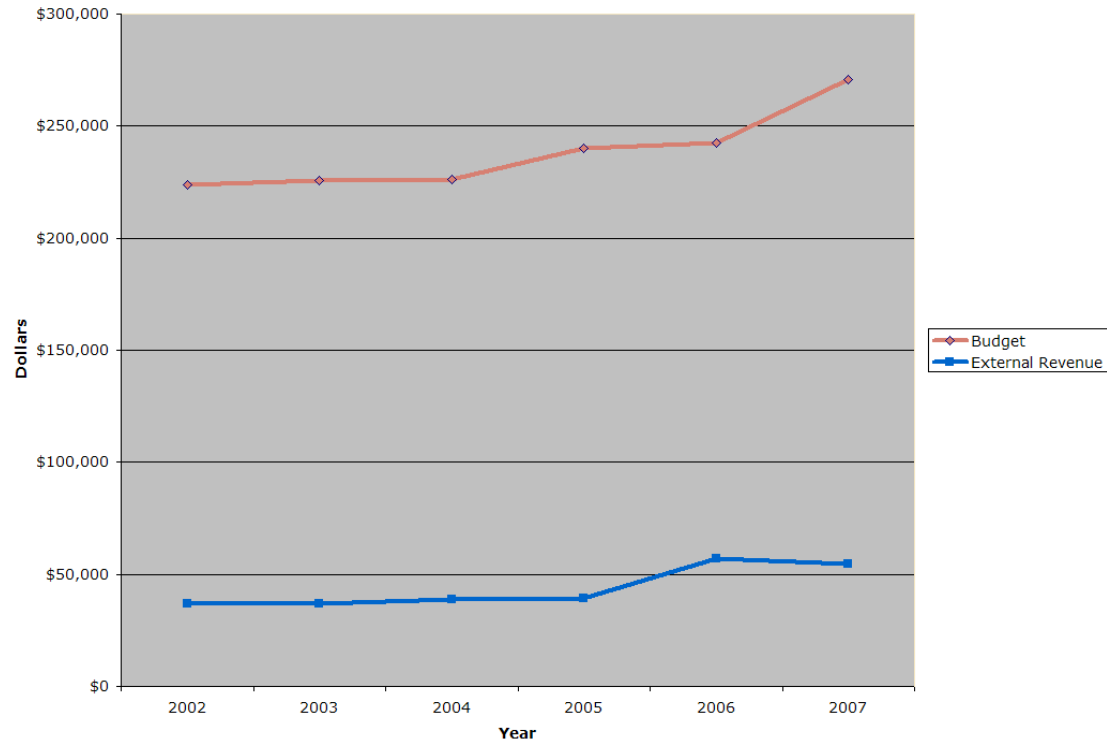




# Sales Revenue



# Revenue to Budget



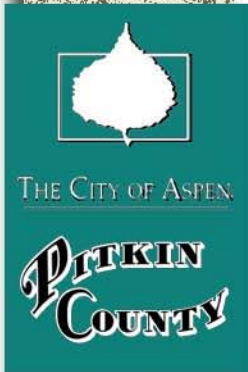
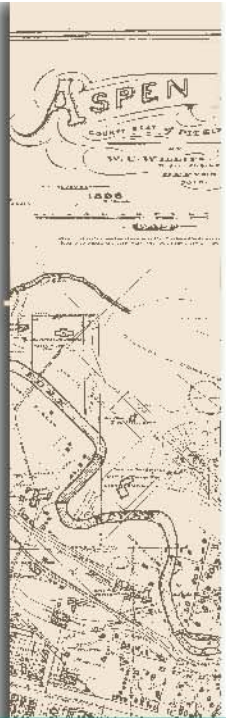
Total revenues average 23% of our total budget

Public sales average 17%

Internal sales average 6%

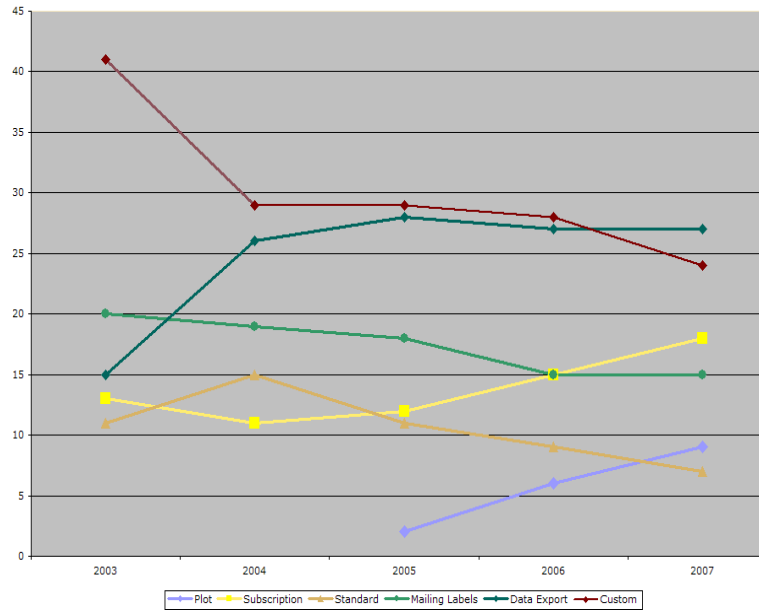
In 2007 it took 19% of staff time to collect 20% of our budget



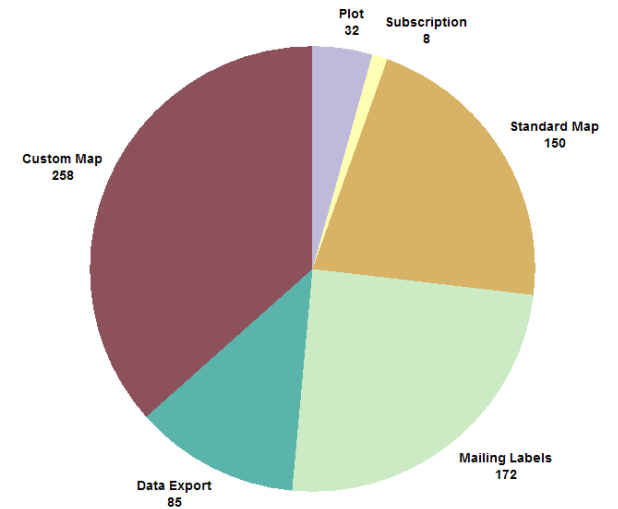
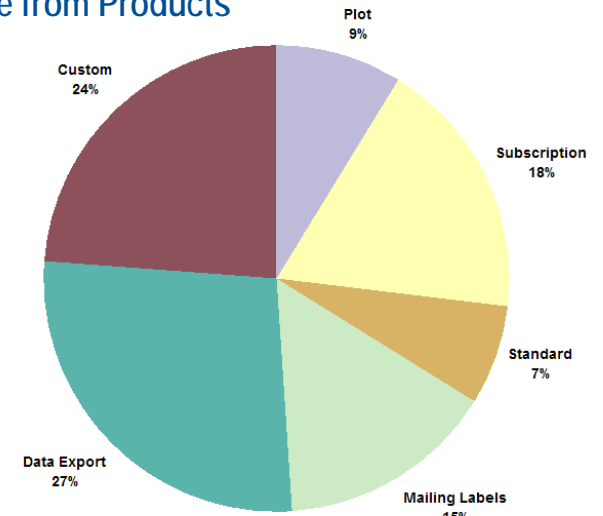


# Popular Products

1. Data Export
2. Custom Map
3. Subscription Service
4. Mailing Labels



## Revenue from Products

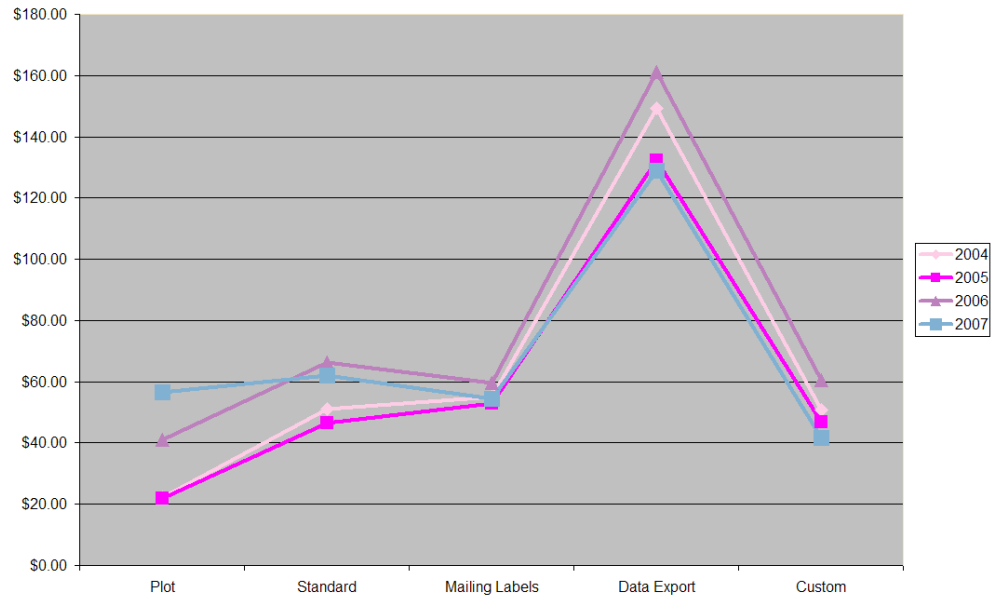


## Number of Products

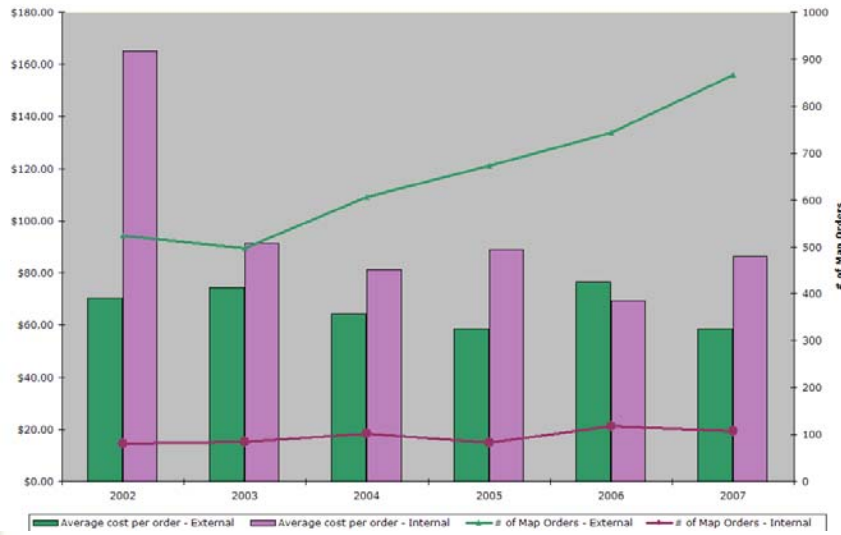




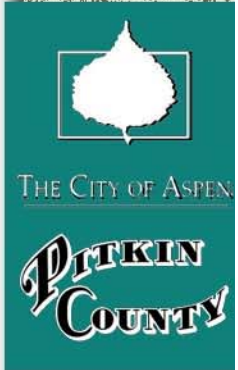
# Average Product Cost



# Map Orders and Average Cost per Order

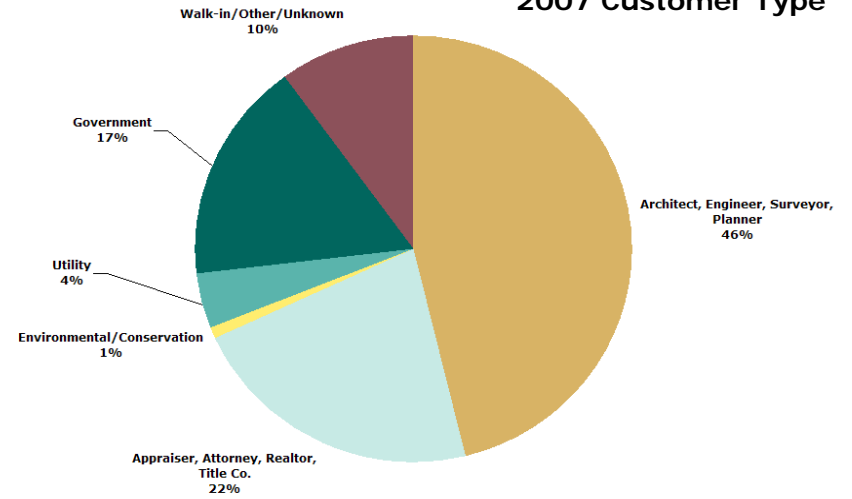


# # of Map Orders and Average Cost Per Order

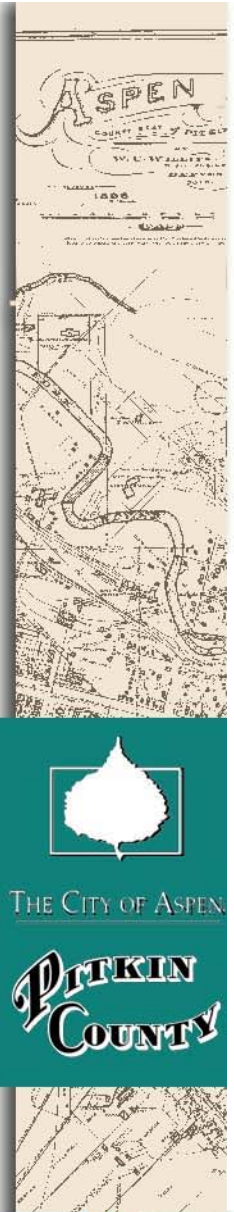
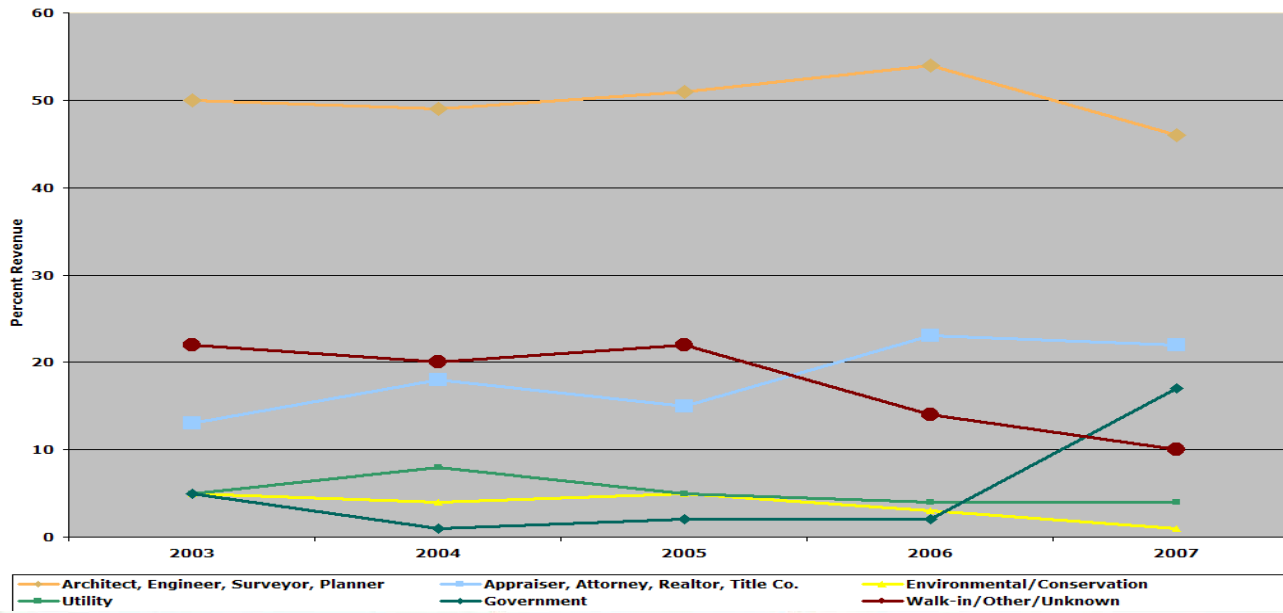


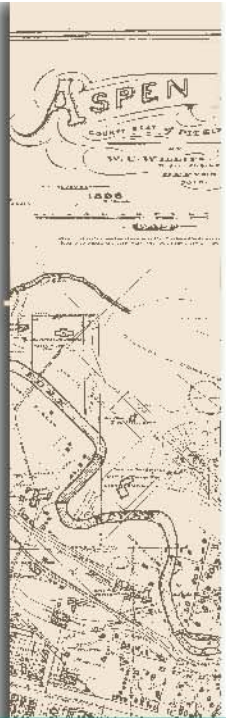
# Public Customers

2007 Customer Type

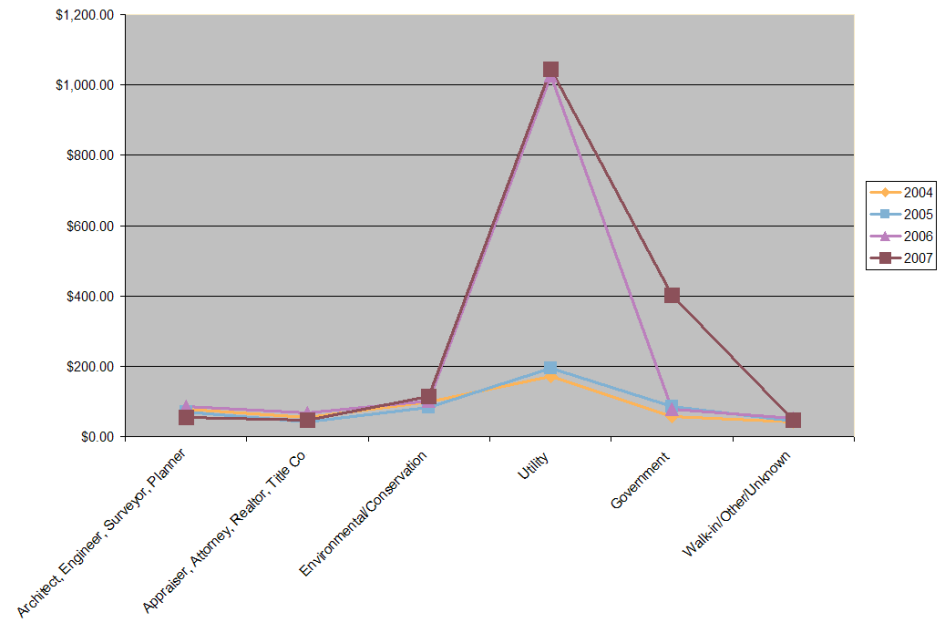


Percent Revenue by Public Cust

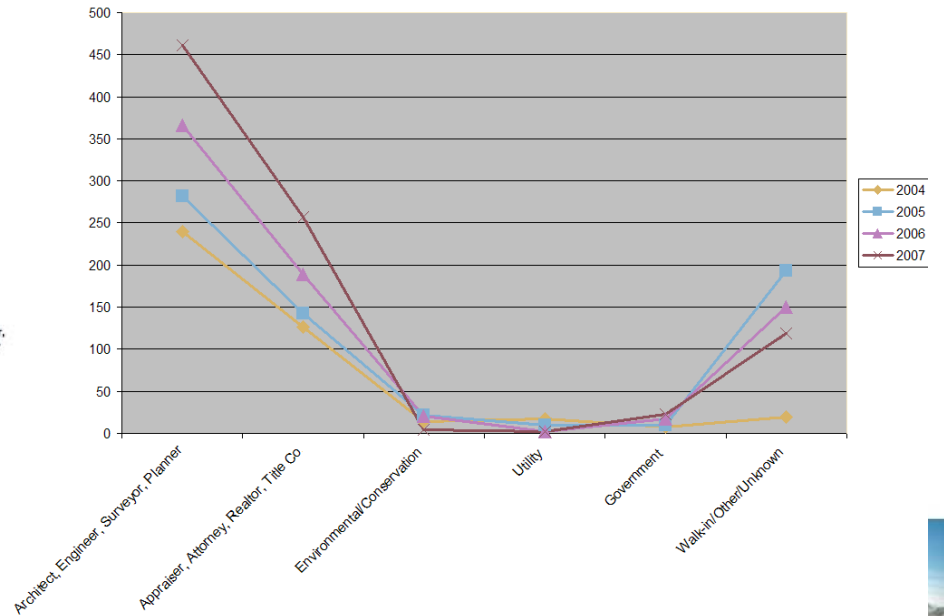
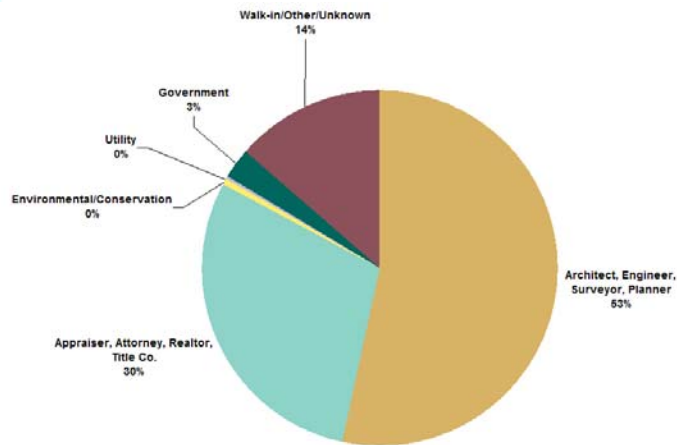
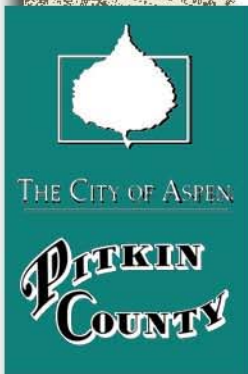




# Average Sale by Customer Type

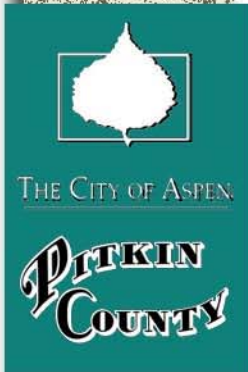
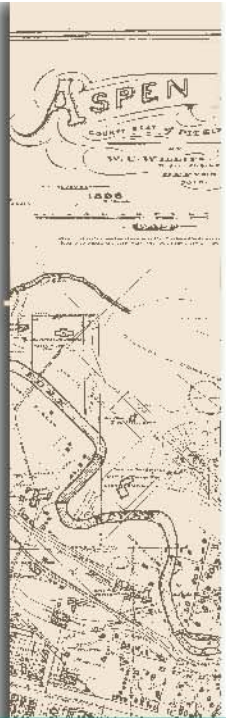


# Number of Orders by Customer Type





# City & County Customers

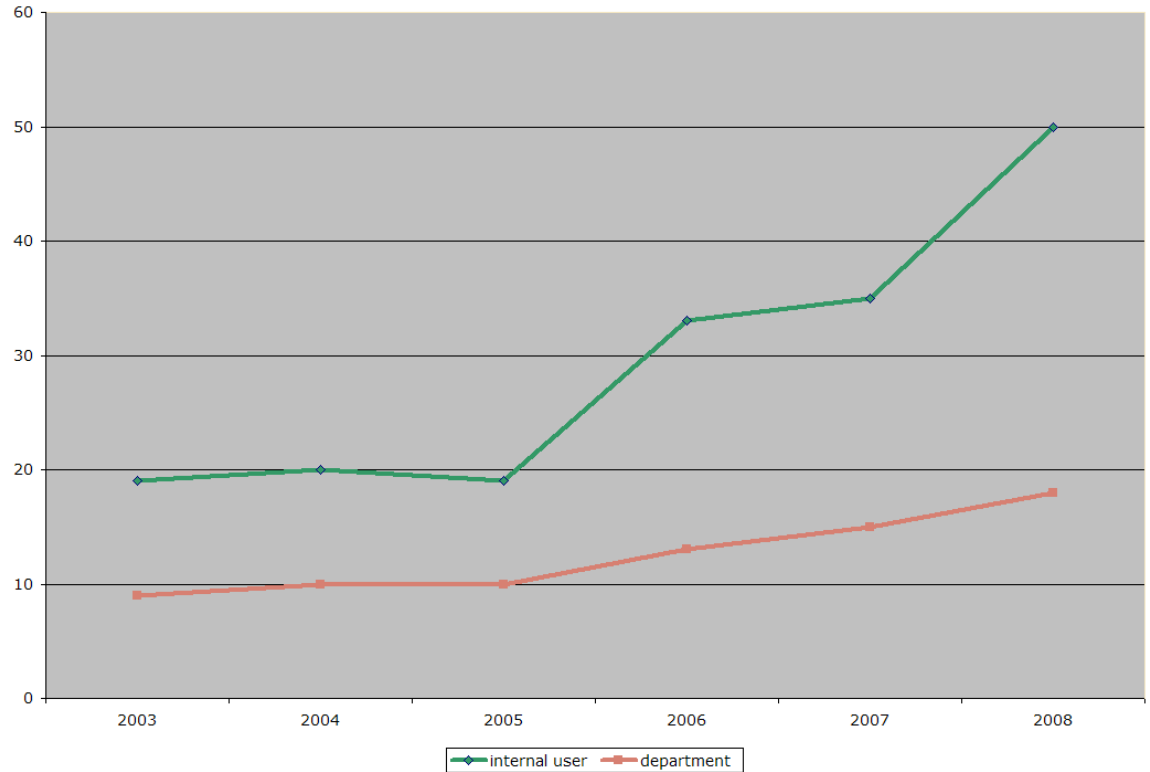


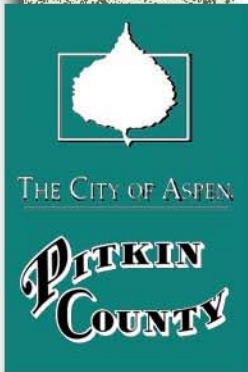
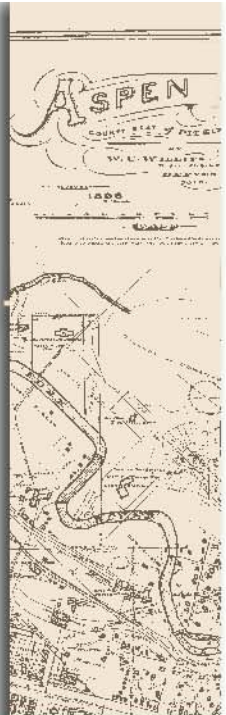
## Aspen

- Clerk - web
- Community Development
- Engineering
- Information Systems - web
- Parks
- Streets
- Transportation
- Water

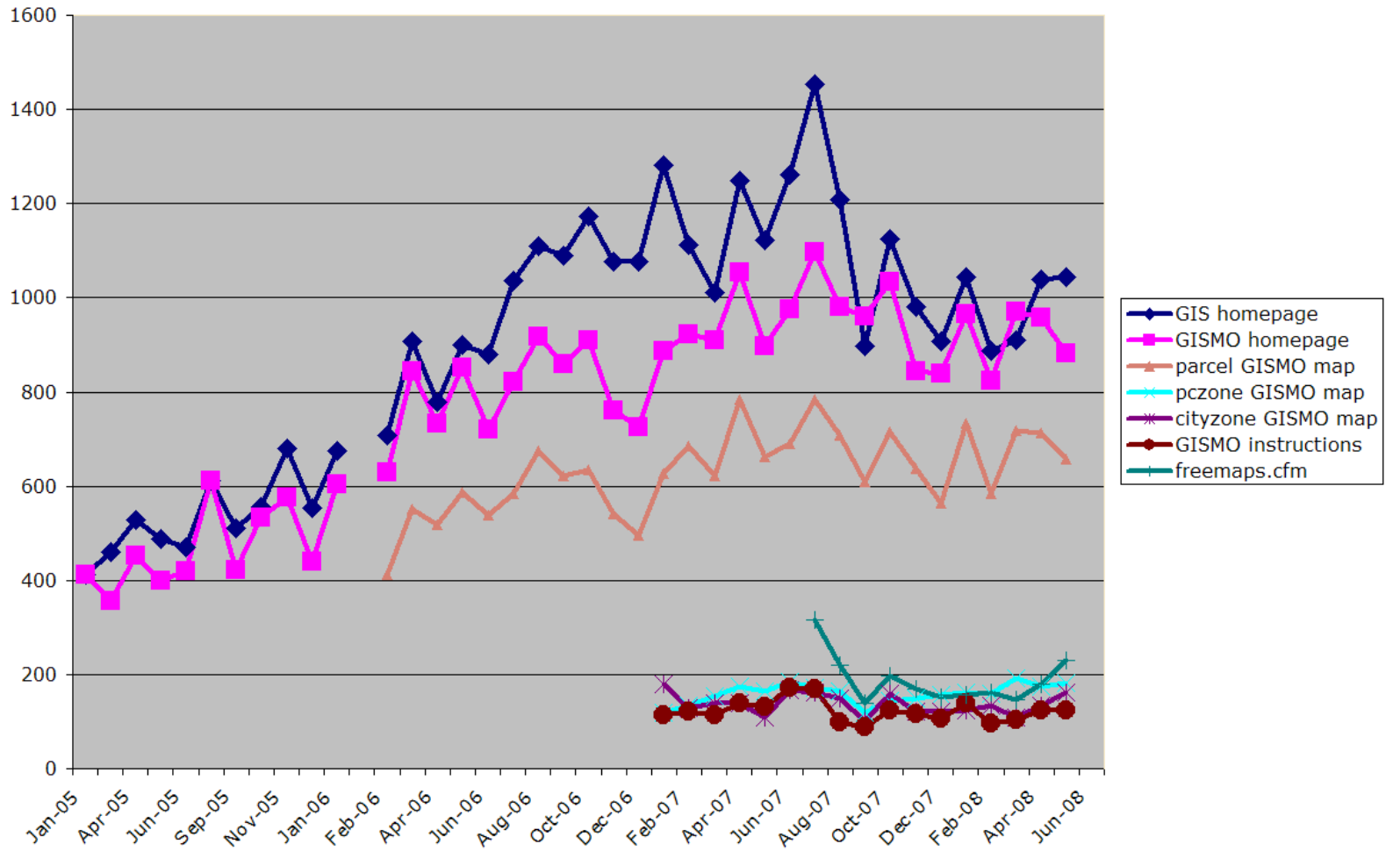
## Pitkin

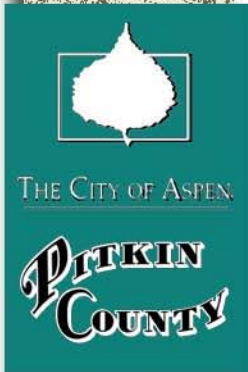
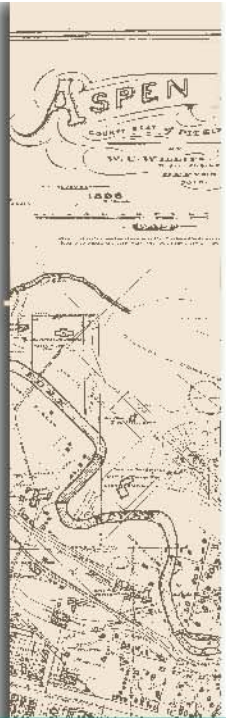
- Assessor
- Attorney
- Board of County Commissioners
- Clerk & Recorder - web
- Communications (911)
- Community Development
- Environmental Health
- Land Management
- Open Space
- Road and Bridge



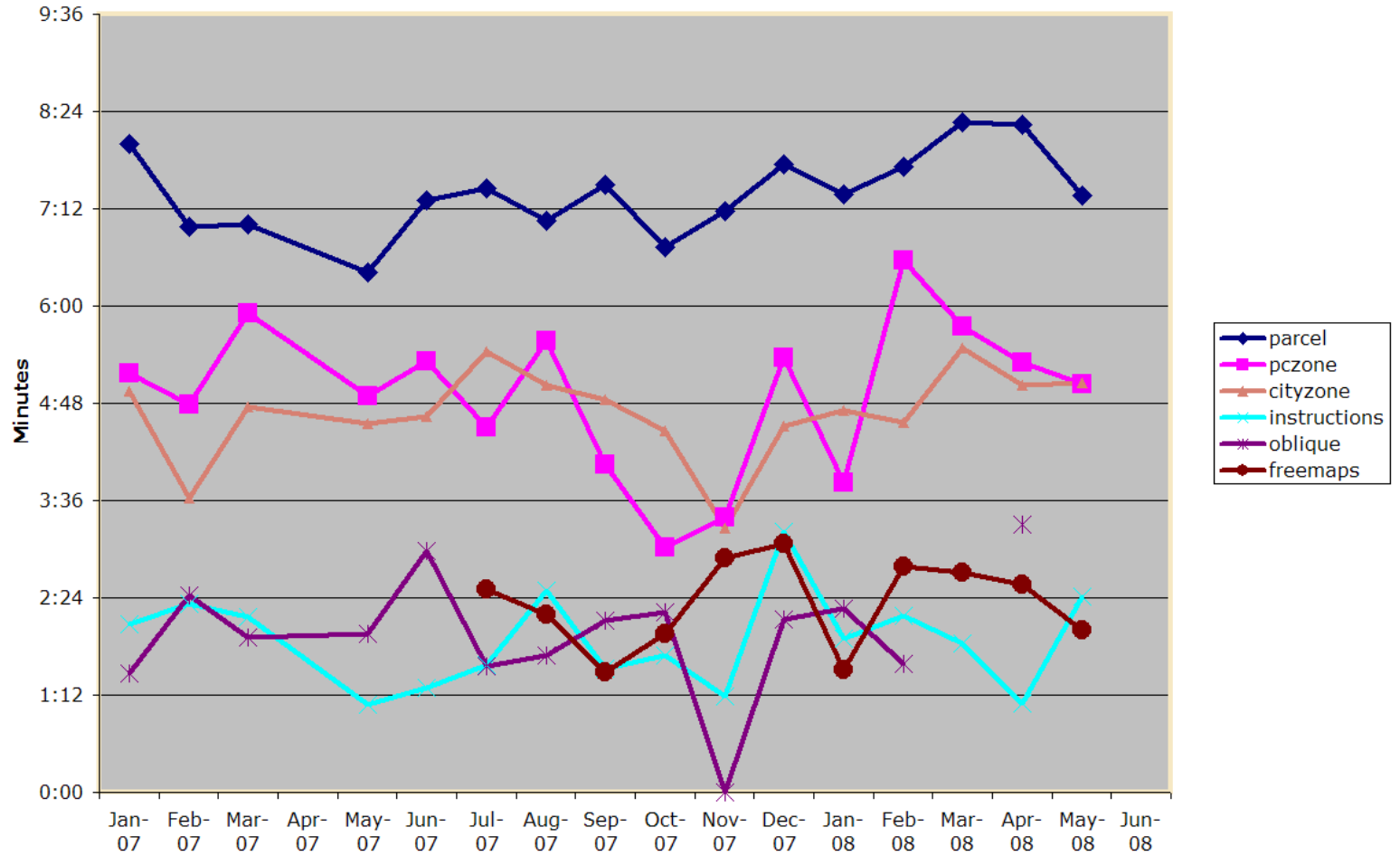


Hits on GIS Web Pages





Average Time Spent on GIS Web Pages





# What does this mean?

How do you spend your time?

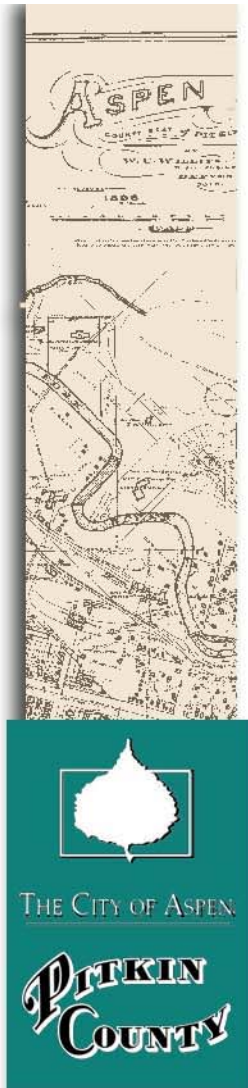
What are your resources?

Who are your customers?

How much do you sell?

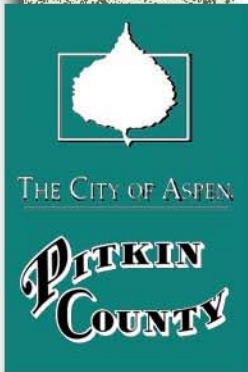
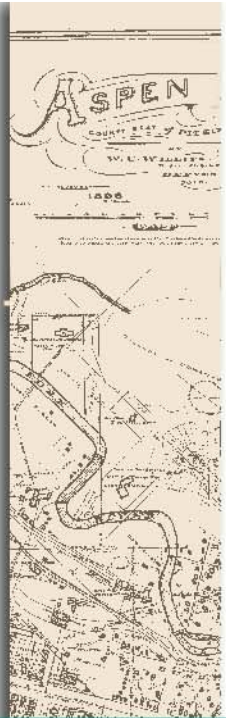
What do they purchase?

How long do they visit your site?



*The GIS program is growing!*





# Don't Let it Spoil

## c Winter (reflect)

- Analyze customers and numbers

## II Spring (clean)

- Talk to your customers



## Summer (grow)

- Five Suggestions for Easy Public Relations
- Additional Thoughts to Keep GIS Fresh



## Fall (harvest)

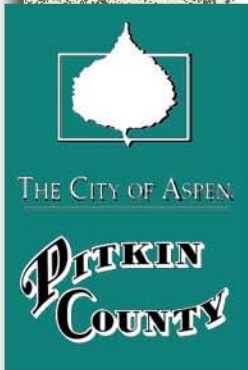
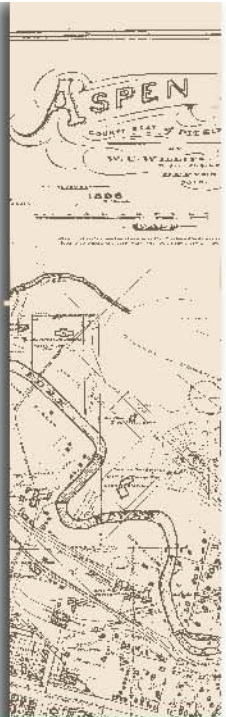
- Creativity Day



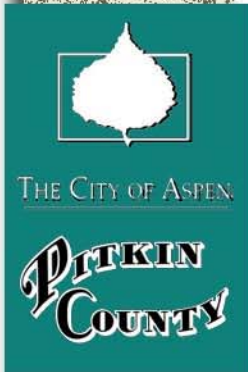
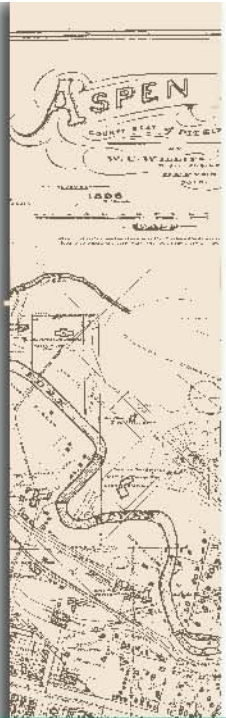
# When Did You Last Talk to Your Customers?

## Basic GIS lifecycle

- **needs assessment** (1989, 1998, 2006)
- **system design** (1990)
- **project implementation** (1991)
- **daily operation** (1991- current)







# Customer Interviews

## Why Take the Time?

- staff changes
- technology improves
- new data available
- dept operations mature
- communication
- policy changes
- find out what's happening in the field
- promote your services



# Interview Outline

GIS Overview

Is GIS Meeting your Needs

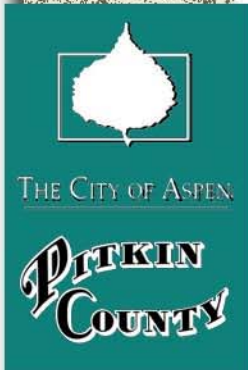
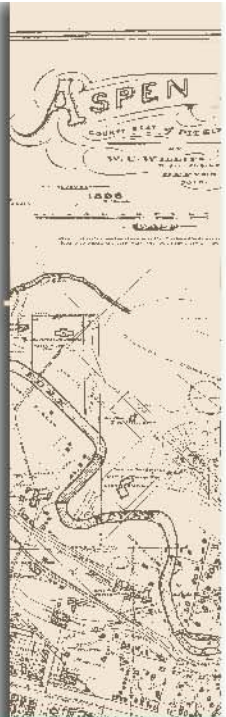
Data Development/Maintenance

GISMO/Web improvements

GIS Services

"Quick" List

Comments/Suggestions

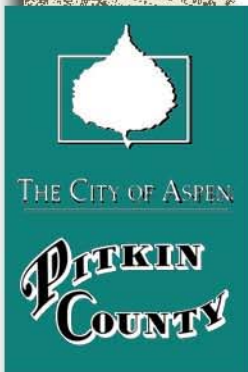
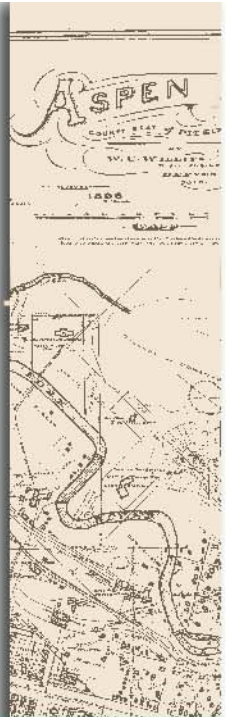


# Interview Follow Up

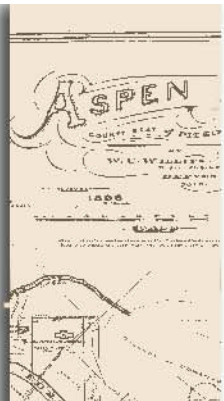
- Deliver the “Quick List” items to the customer
- Populate Customer Suggestion Matrix

When first phase of interviews are complete:

- Send a copy of the matrix to interviewees for review and changes.







# Customer Suggestion Matrix

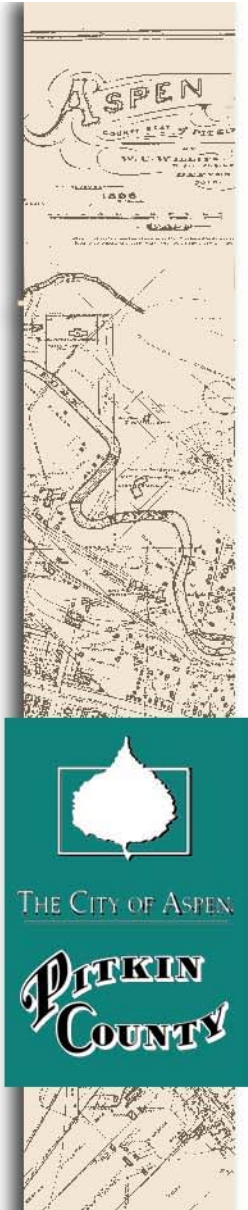
2006 GIS House Call Project Suggestions		City Asset/Engineering	City Clerk	City ComDev	City Env. Health	City & County Housing	City Parks	County Assessor	County Clerk & Recorder	County ComDev	County R&B, Nat Resources	OST	Total
<b>Data Development/Maintenance</b>													
addresses - centralized database									x				1
many different databases, procedure to assign agricultural lands irrigated, taxed etc.											x	x	2
building envelopes (approved)												x	1
CAD drawing integration to GIS as-builts of City projects	x						x						2
cemetery plot locations				x									1
city properties and facilities		x											1
conditions of approval tracking	x		x	x								x	4
ords, PUDs, resos, Eden Bldg data, etc													1
construction project locations				x	x					x			3
ne map for enforcement, complaints													1
re building permits													1
ints - problematic	x		x										2
er - determine groundwater influ											x		1
ches - named, owned by, etc.											x	x	2
- fishing		x					x					x	3
t - trails		x					x					x	3
t - conservation		x					x					x	3
ts - roads	x										x		2
vent - alley (for recycling bins)					x								1
nt lots								x					1
ayer for rental and sales EDUs										x			1
ayer for ADU's and CDU's								x					3
nse locations		x									x		1
urface rights					x						x		3
er improvements								x					1
horizontal accuracy issues								x		x	x	x	4
fathering PIN			x							x			2
ownership, in town vs out of town					x								1
type (SF, com, condo, duplex, etc)					x	x							2
vacant land audit to aenals								x					1
t from parcel to approved plats	x				x					x		x	4
bin locations - aspen													1
locations													1
ublic/private classifications	x												4
ffic count data									x				2
ources (CDOT, county, streets)													1
k mapping by customers											x		1
area - by parcel													1
l											x		2
on amendment tracking, link to plat	x		x						x	x	x		5
u semi-protected lands layer												x	1
er facilities on private property					x								1
argin layer								x					1
threatened & critical reaches											x		1
- CAD drawings of houses													1
- heights ( 3D modelling)													1
- year built										x	x		2
- type (UGB area)										x			1
TDR layer (from and to site info) - aspen			x									x	2
trails updates											x	x	3
utility usage - water & electric by parcel													1
vacations - alleys and streets		x											1
watershed information - valley wide					x							x	2
well data - provided by DNR											x		1
wetland delimitation						x						x	2
wildfire layer - fill in gaps											x		1
wildlife - provided by DOW											x	x	2
zoning - comprehensive past zoning - pitkin										x			1

2006 GIS House Call Project Suggestions		City Asset/Engineering	City Clerk	City ComDev	City Env. Health	City & County Housing	City Parks	County Assessor	County Clerk & Recorder	County ComDev	County R&B, Nat Resources	OST	Total
<b>GISMO Improvements</b>													
OST virtual visitor's center												x	1
nice static mapping of OST properties												x	1
GISMO hiking trails with painting												x	1
Construction project locations				x									1
Top twenty projects, public info, contacts													1
City ComDev site				x									1
should have zoning descriptions													1
County R&B/Natural Resources site													1
real-time snowplow tracking on web											x		1
interactive public pot hole comment map											x		1
weeds management											x		1
road classifications											x		1
EH data from Ken Kolm study										x	x		2
Constrained Areas/1041 site										x			1
GISMO labeling and symbols								x					1
should resemble that on Parcel maps													1
Parcel link to scanned plats								x				x	2
Improve GISMO print capability								x				x	2
Training for employees - how to use		x											3
Handout for GISMO users										x			1
<b>GIS Services</b>													
Aerial photography updates 3 year sched.	x	x	x	x			x	x		x	x	x	9
ArcGIS Tutorials, Tips and Training		x	x							x	x		5
Data backup of department GIS data							x				x	x	3
GIS should administer all ArcGIS licenses											x		1
Internal charge is limitation to use					x								1
Scan the Assessor's map book								x					1
date last updated 4/19/2007													



# Prioritize Project Matrix

- Prioritize Projects
  - matrix is quantified, illustrative, categorized
- Time & Cost Estimates
- Identify available funding
  - requesting departments have resources
- GIS selected five projects from matrix
  - customer involvement, buy-in, participating in decisions



# Projects Selected

## Data Development/Maintenance

Conditions of Approval Tracking

Link Parcels to Approved Plats

Horizontal Accuracy issues of database

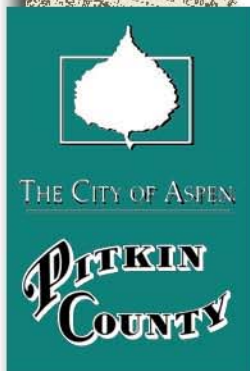
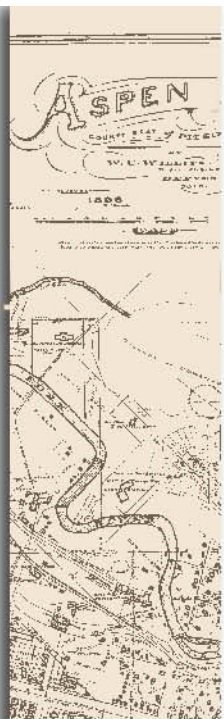
## GISMO/Web Improvements

Improve interface, flashier, intuitive, data downloads, etc.

## GIS Services

Aerial photography updates more frequently

ArcGIS Tutorials, Tips and Training for users





# Customer Interview Summary

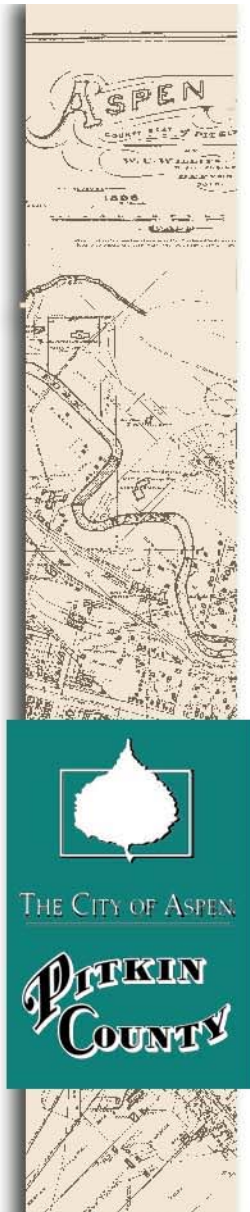
Take initiative to talk to your customers

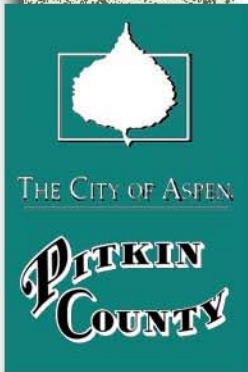
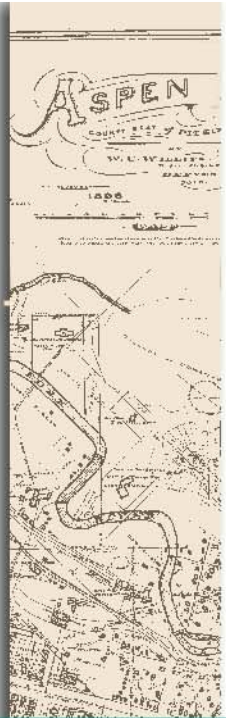
Complete a "quick" project for each customer

Document their needs

Prioritize all needs and distribute (many are shared)

Have customers participate in the selected project





# Don't Let it Spoil

## c Winter (reflect)

- Analyze customers and numbers

## II Spring (clean)

- Talk to your customers



## Summer (grow)

- Five Suggestions for Easy Public Relations
- Additional Thoughts to Keep GIS Fresh



## Fall (harvest)

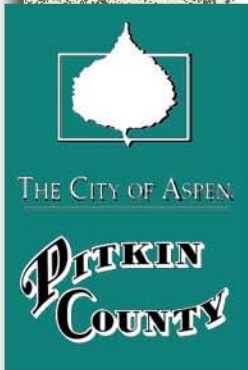
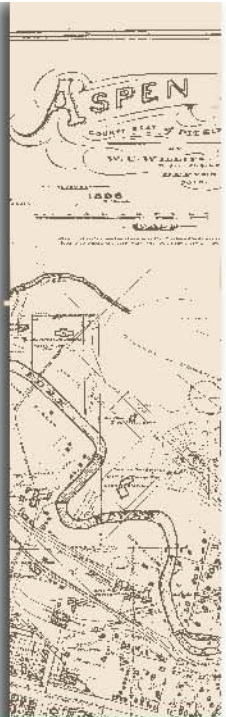
- Creativity Day



# Five Suggestions for Easy Public Relations

1. GIS Day Participation
2. Employee & public newsletters "GIS Corner"
3. GIS website "Map of the Month"
4. Map displays in public buildings
5. Lunch Bytes – monthly technology training

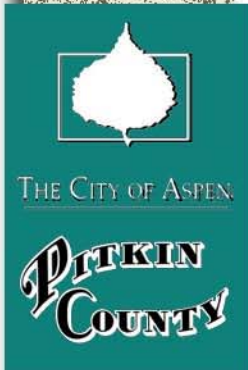
*Get GIS Before a Larger Audience*





# Additional Thoughts To Keep GIS Fresh

- Get Inspired  
*reading, photographs, nature, get lost, explore....*
- Develop a new look and feel to products  
*only use default fonts and colors and print on cheap bond?*
- Map Book, Map Gallery, Historic Maps, Online Maps  
*David Rumsey, Library of Congress, University of Texas*
- Post maps throughout organization  
*what do you get feedback on?*
- How can I communicate my message differently?  
*charts, 3D, projection, colors, scale, multiple extents, animations*



# Don't Let it Spoil

## c Winter (reflect)

- Analyze customers and numbers

## II Spring (clean)

- Talk to your customers



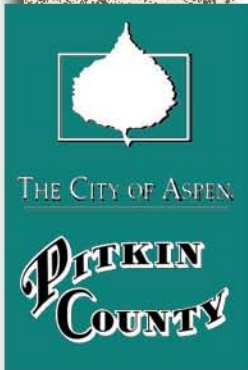
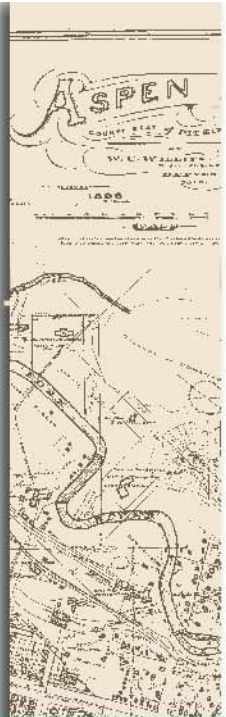
## Summer (grow)

- Five Suggestions for Easy Public Relations
- Additional Thoughts to Keep GIS Fresh



## Fall (harvest)

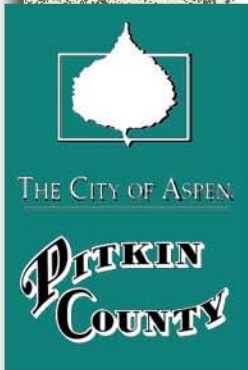
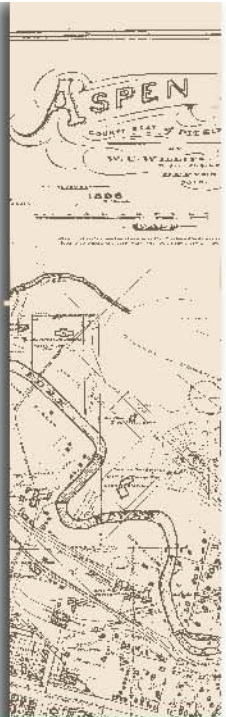
- Creativity Day



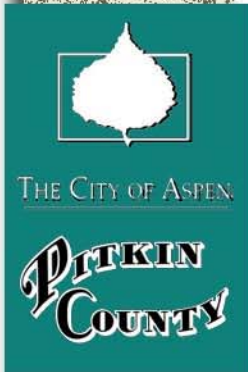
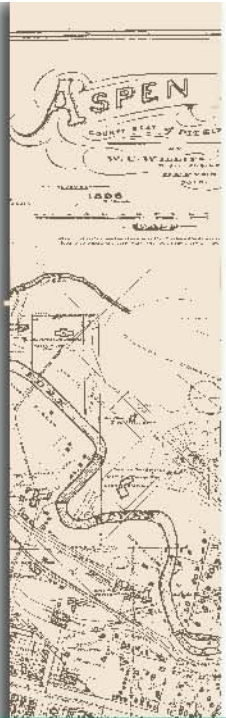
# Creativity Day

- Consultant and staff
- Look at GIS program elements
  - administration, customer service, database, procedures, etc.
- What should we Keep, Stop and Change?
- What's happening in the industry we need to address?

*Fresh outside perspective on your operations*







- Prioritized into Action Plan
- Credibility for manager support
- Staff concerns addressed

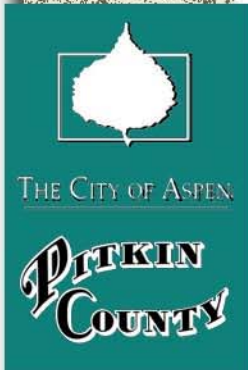
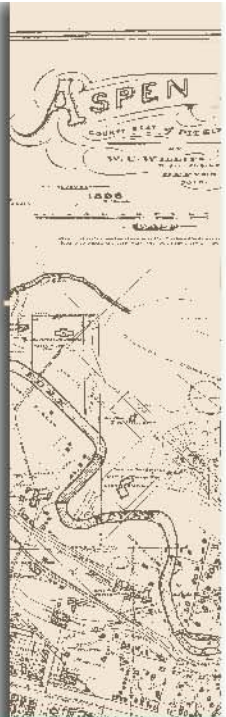
done	<b>Interview all GIS user groups</b>	is the system meeting your needs usability of data? new data requirements application development training and support needs
do	<b>Interview external customers</b>	questionnaire on website
doing	<b>Website</b>	monitor statistics improve interface - flashier, more intuitive more public customer oriented web site - look & function free data downloads, metadata links improved printing Transactions -
wait	<b>Google Earth</b>	evaluate as a "thin" web client upload local data
doing	<b>Evaluate current software licensing cost effectiveness</b>	are ArcView licenses being utilized? are there other less expensive options?
do	<b>Identify several internal/external GIS applications to be developed</b>	this is "low hanging fruit" websites for customers what was ID'ed from interviews?
do	<b>Aerial photography</b>	do customers like this? high rate of change in land base warrants new imagery every 2-3 years change funding rate of the \$50 fee
do	<b>Customer service</b>	be as productive as possible cost-effective + good customer service provide better customer service, easy to use tools on website website payments with Accounts Receivable - should save staff time
do	<b>New data layers</b>	evaluate customers needs better trails layers 1041 hazard overlays fishing/recreation easements easements & ROWs floodplains
do	<b>Identify data interfaces to other departments</b>	City clerks records county plat & recorded documents building permit records business licenses
wait	<b>Can GIS services be offered by other businesses?</b>	MapMart or similar? increase revenue with no addl time required by staff?
wait	<b>Eliminate the "charge back" scheme to City &amp; County Depts</b>	this inhibits useful work to happen with GIS
do	<b>Determine severity of parcel accuracy issues</b>	how critical is this to customers?
do	<b>Continue system documentation</b>	procedures, processes, data updates, etc.
do	<b>Keep GIS statistics- periodic and regular updates</b>	license, database & web use consider "dashboard" that will feed this to you
do	<b>Presentation to decision makers - after interviews</b>	republishize program/remarket program recommunicate value to program reeducate decision makers write outline for politicians

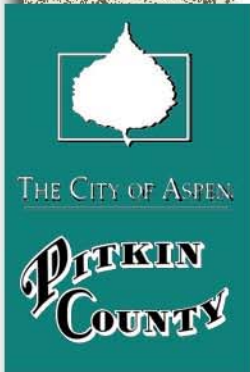
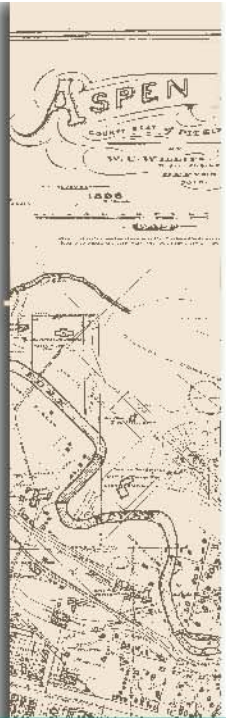
*Builds Enthusiasm and Support for GIS Program*



# What Does this Accomplish?

- Better understanding of your business
- Improved customer service
- Collaboration with customers on projects
- Identify and prioritize projects, funding and resources
- Respond to changing environment
- Addresses staff issues and concerns
- Keeps GIS in a respectable light in organization
- Makes the business enjoyable....





Thank You for Your Time

Questions ?



[mary.lackner@ci.aspen.co.us](mailto:mary.lackner@ci.aspen.co.us)

