

Enterprise Information Management Services – Berkeley County Data Integration Study



May 03, 2007

Berkeley County, S.C.



The Goal – Interoperability and

Asset Management



Addressing



Customer Management



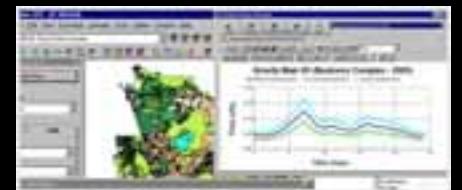
Routing



EDMS



Modeling



Geographic
Information
System

Emergency
Management



Land
Records



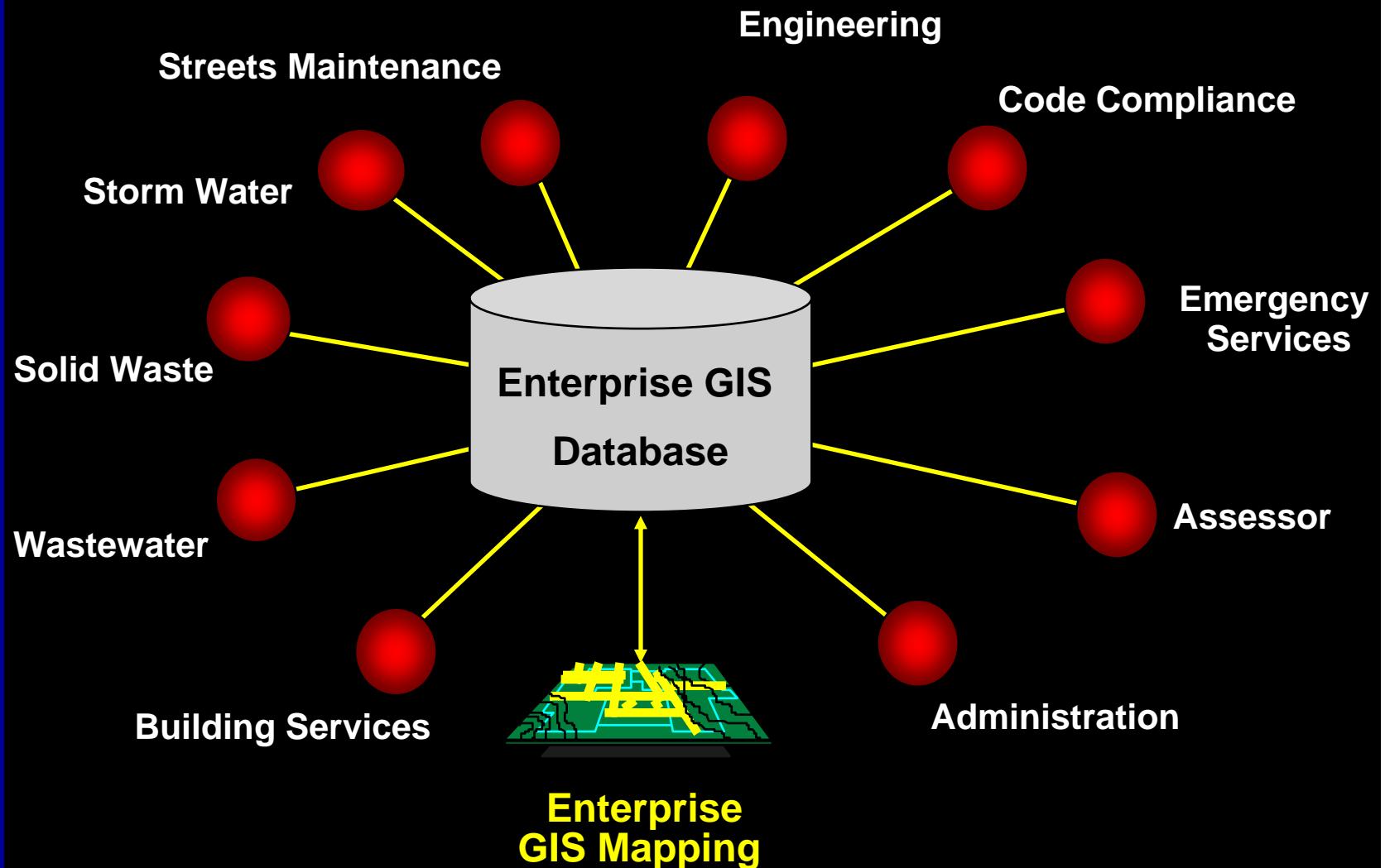
Web
Services



Mapping



Integration!



Setting the Bar

Focus:

- Engineering
- Planning and Zoning
- Assessor's Office
- Permitting
- GIS
- Codes Enforcement
- Roads and Bridges
- Information Technology
- Emergency Management

What Are the goals?

- CUSTOMER SERVICE – get it right, get it fast
- No redundant data/software/hardware cost
- No duplication of data maintenance
- Data access – data confidence
- Opens the door for additional solutions:
 - Additional data collection
 - Standards with enforcement
 - Emergency services
 - Data maintenance
 - Information integration



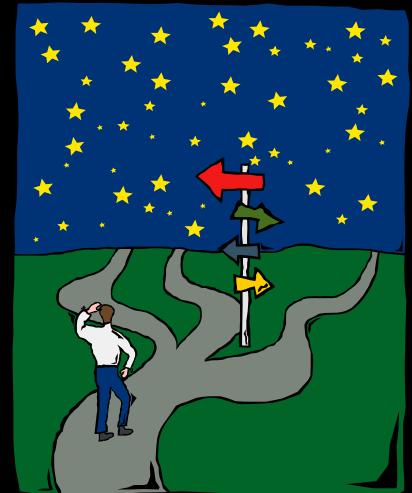
Criteria

- Non-redundant feature data storage
- Non-proprietary feature data model
- Interoperable
- Feature data coordinate location and connectivity
- GIS savvy tools for editing and data creation

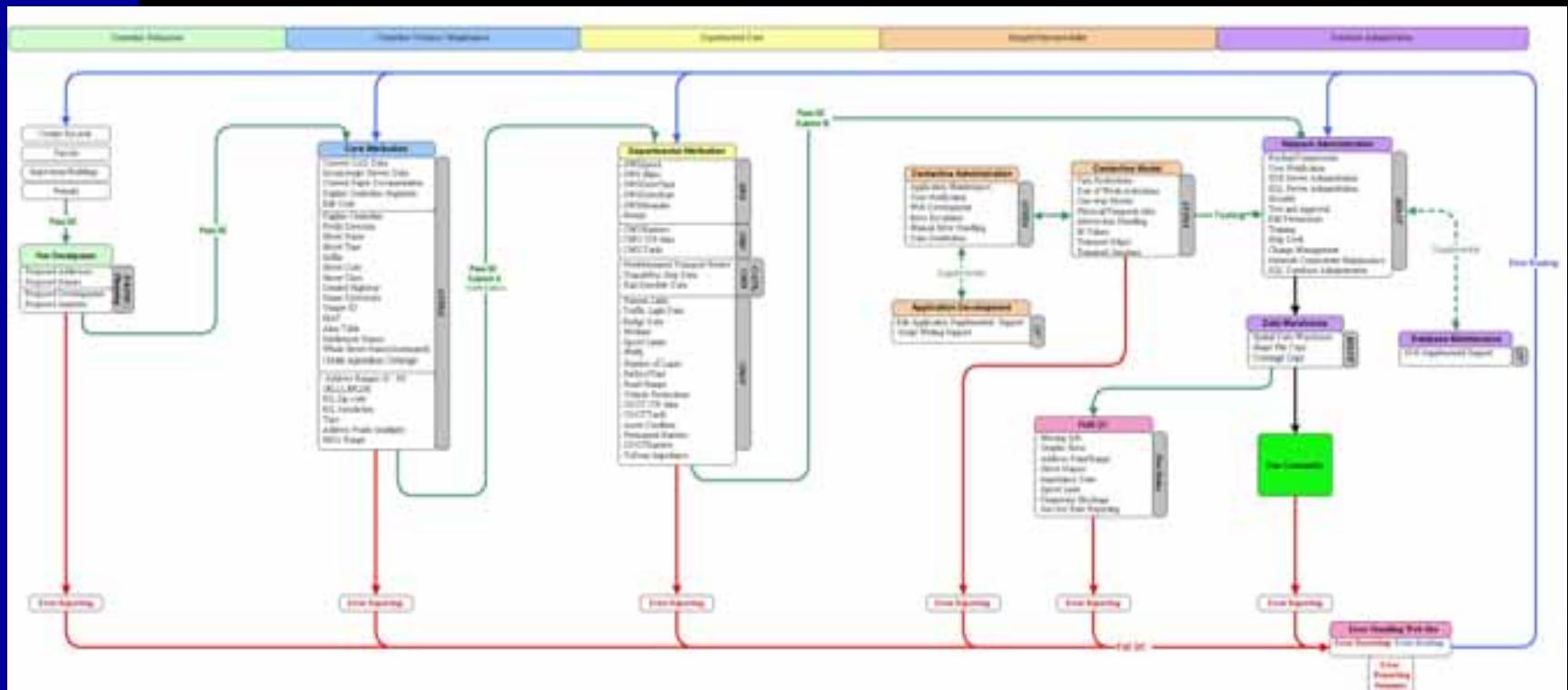


Providing Solutions

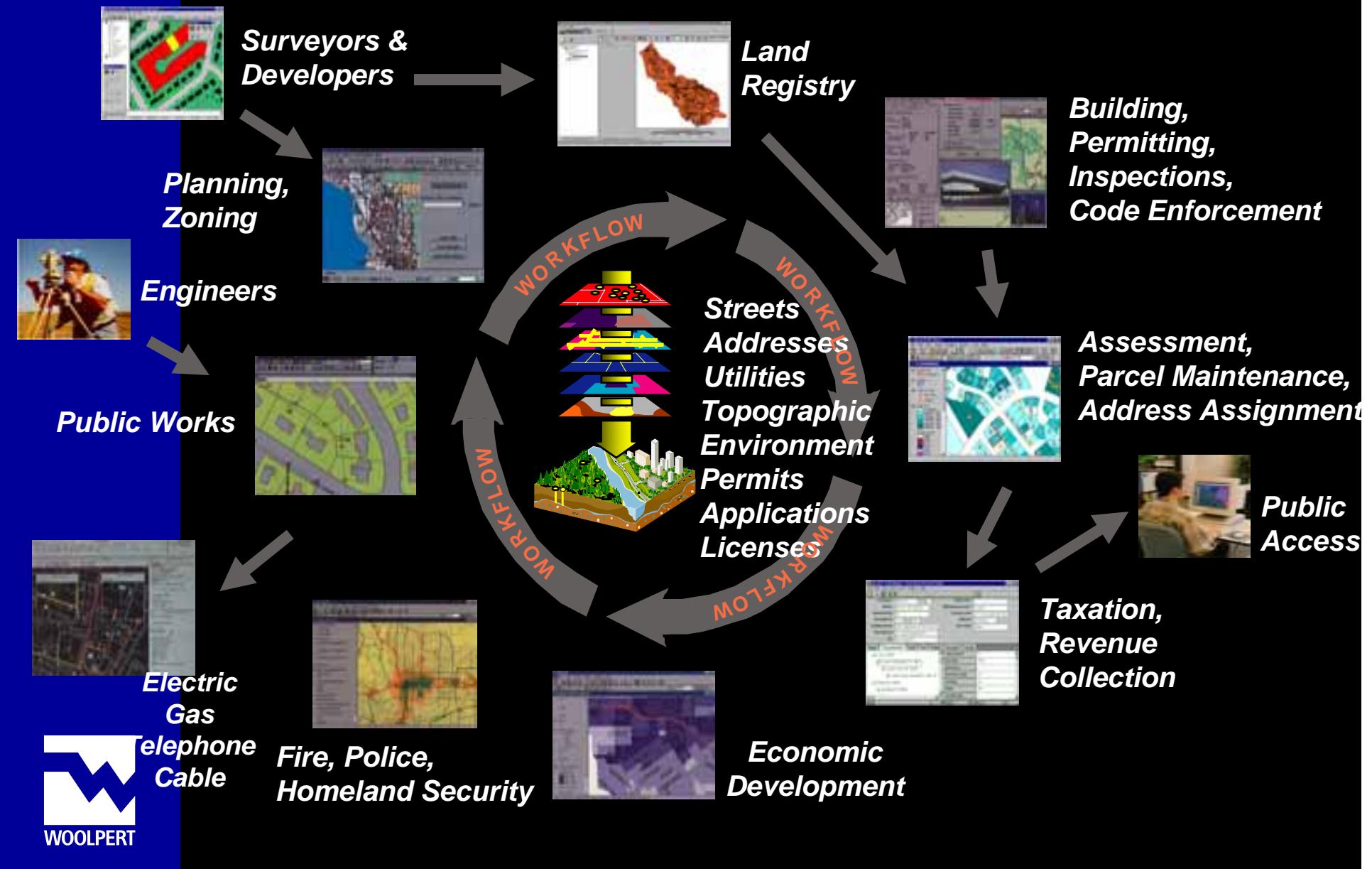
- Increase Access to Information
- Increase Management Tools
- Flexible Systems
- Provide Integrated Data
- Streamline Business Processes
- Maximize Investments in Technology



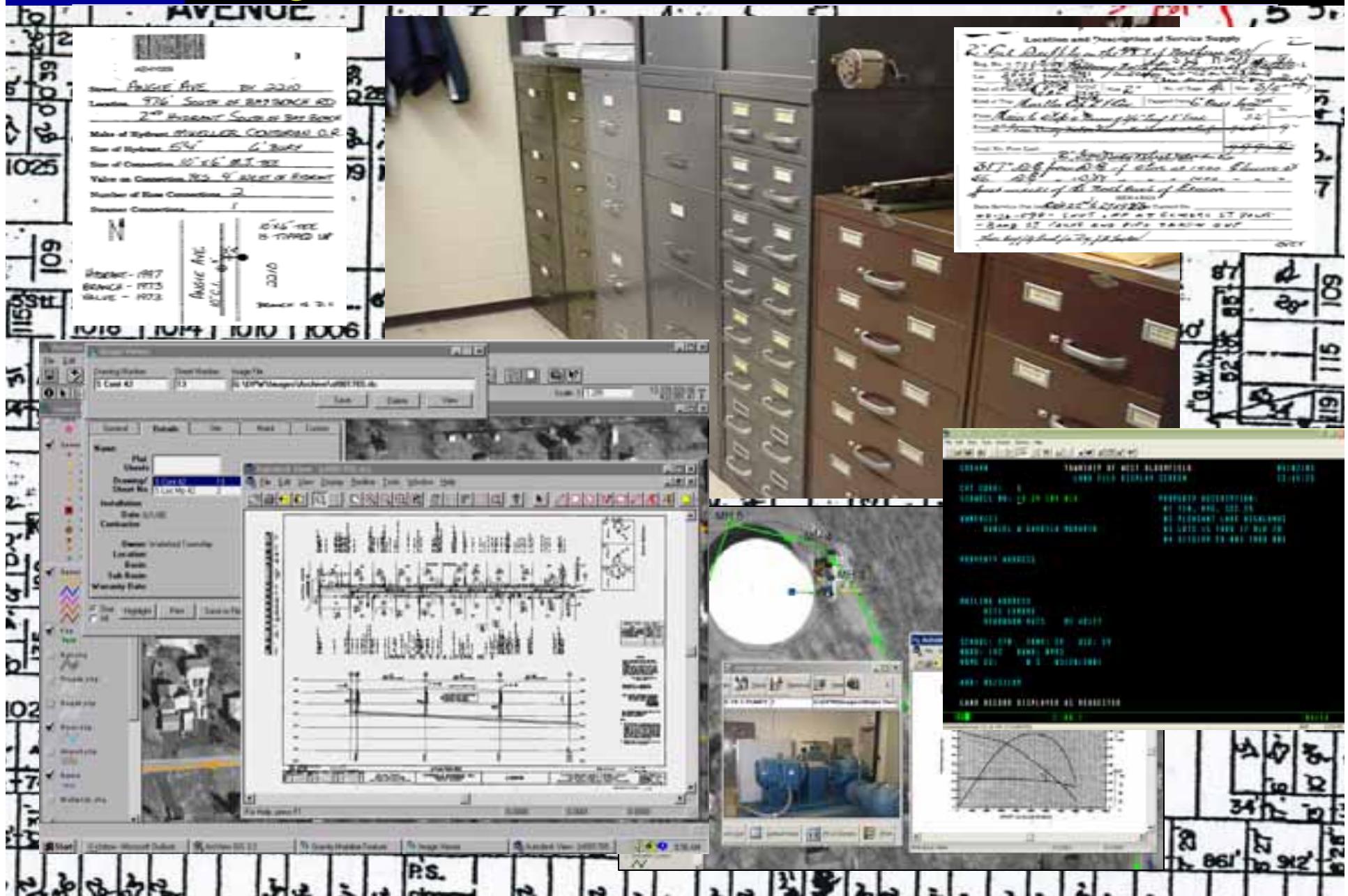
Step One: Organize and Prioritize



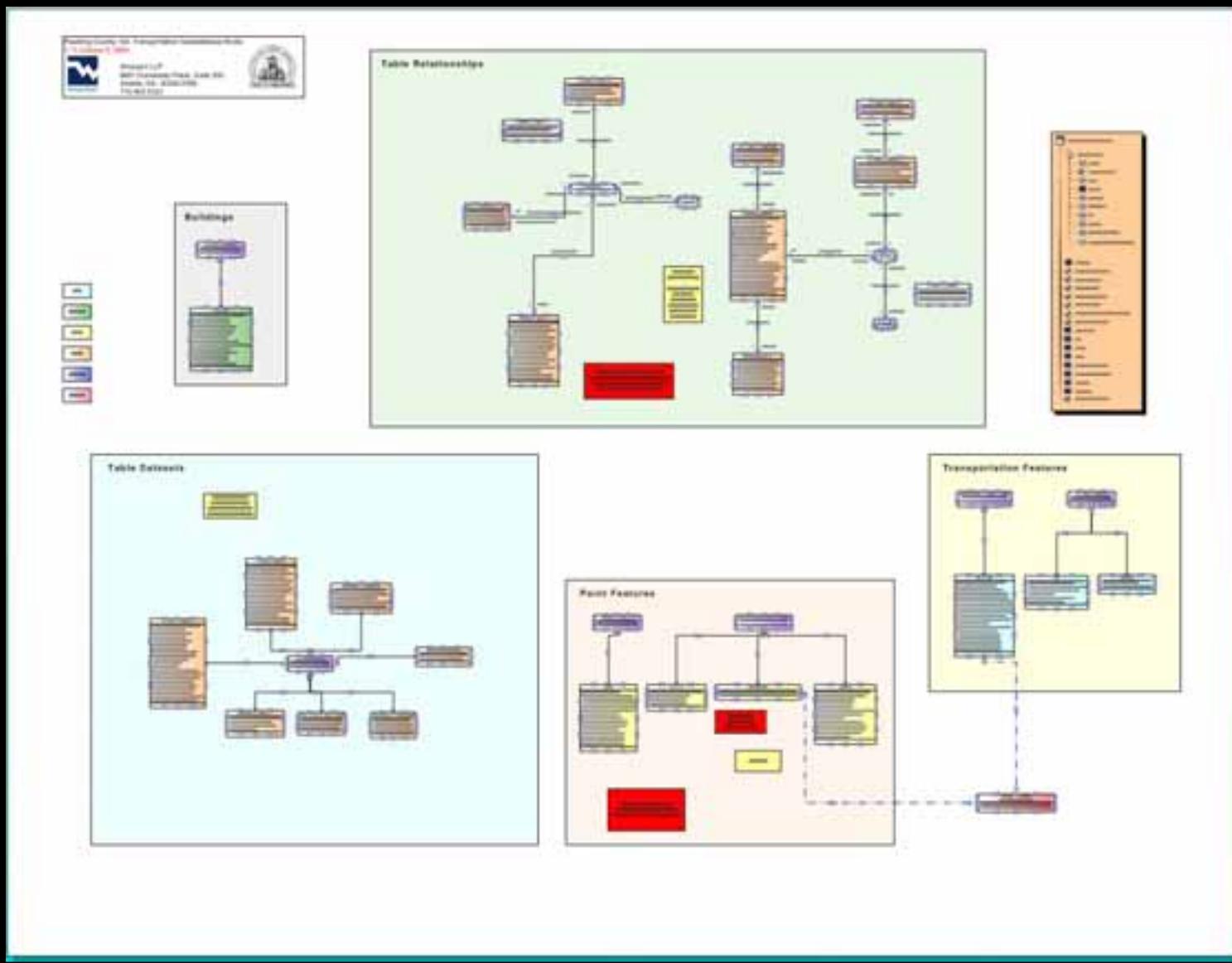
Land Records as a Foundation



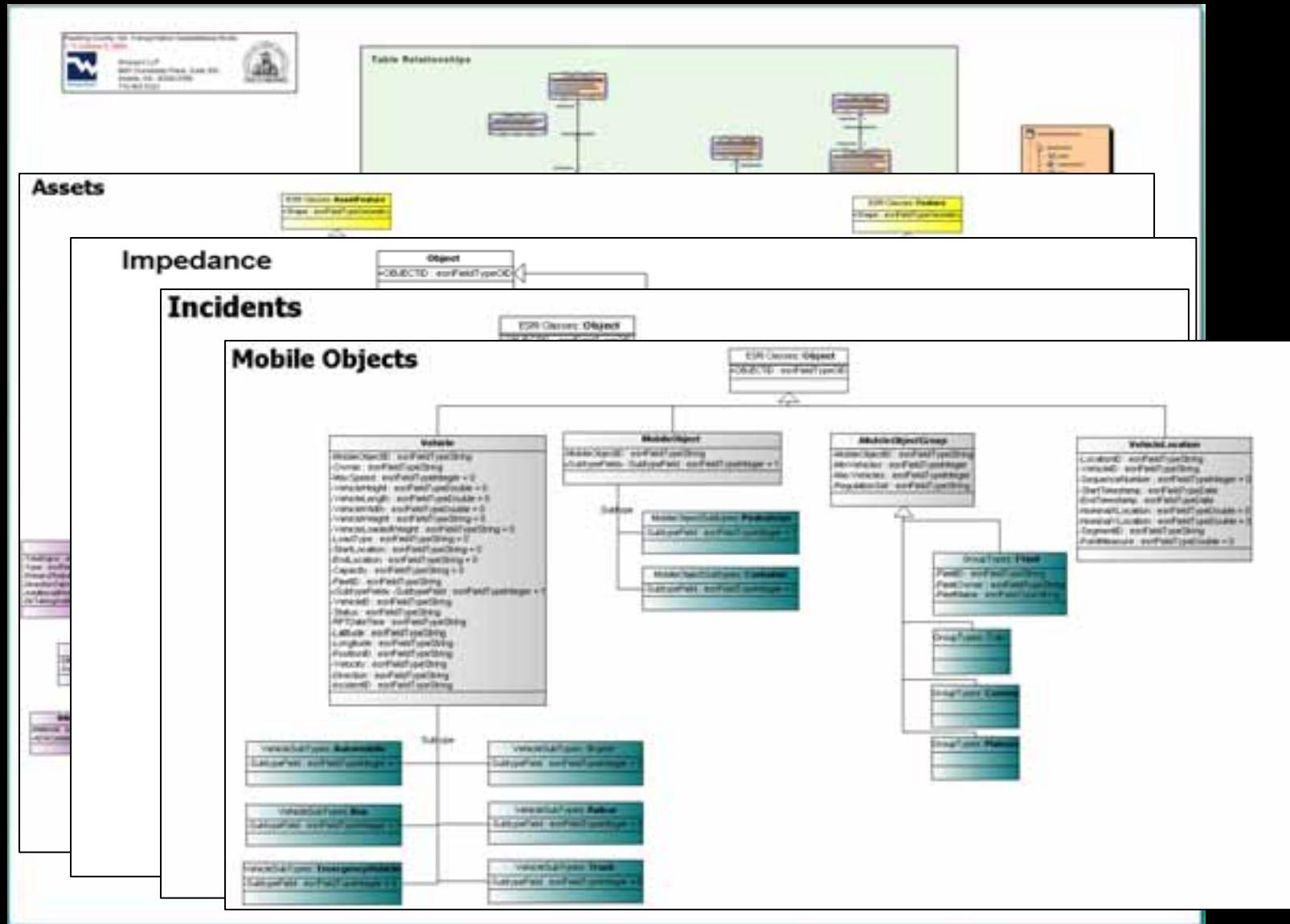
Major Issue - Data, Data, Data



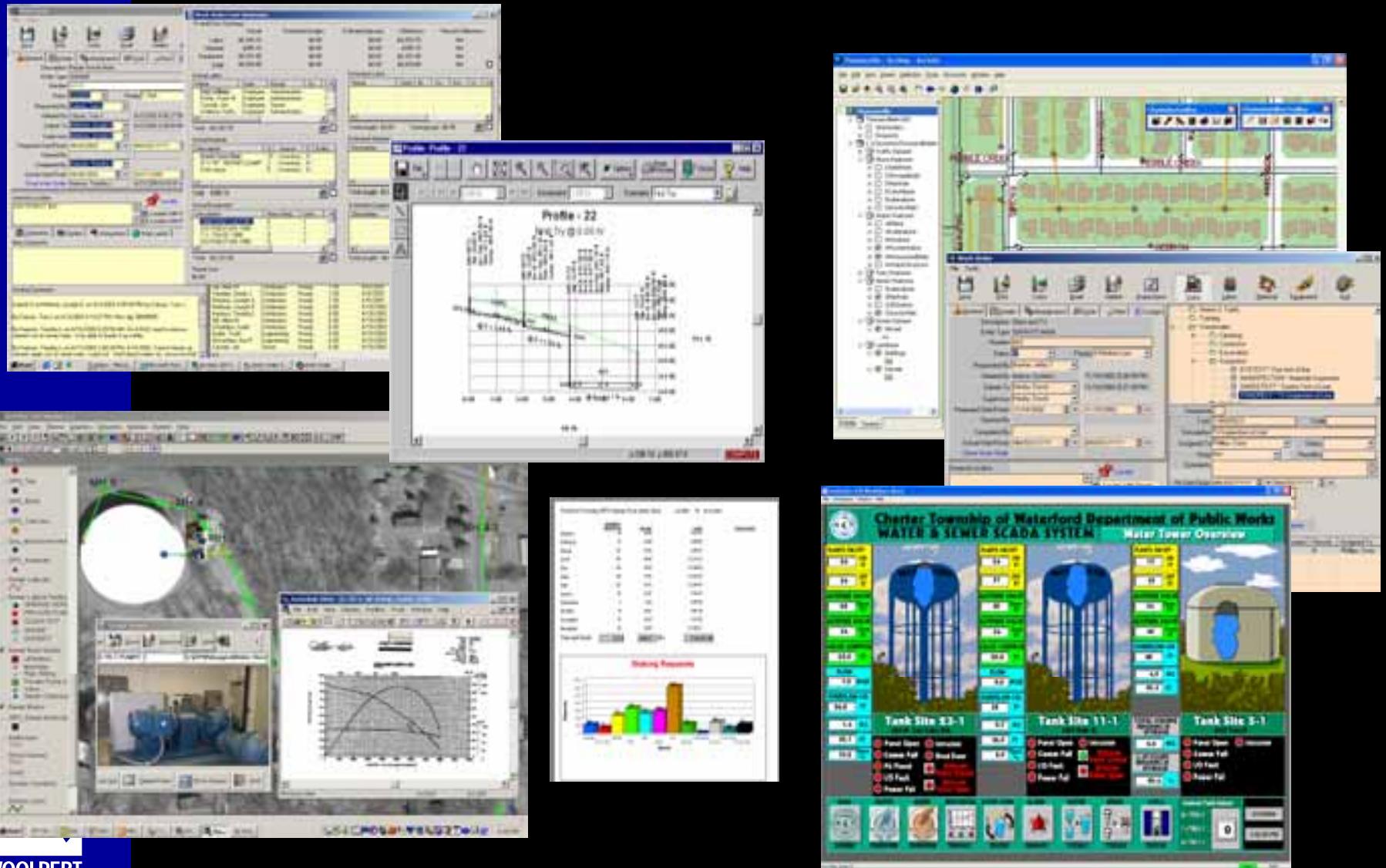
Database Design



Big Issue Two: Streets & Addresses

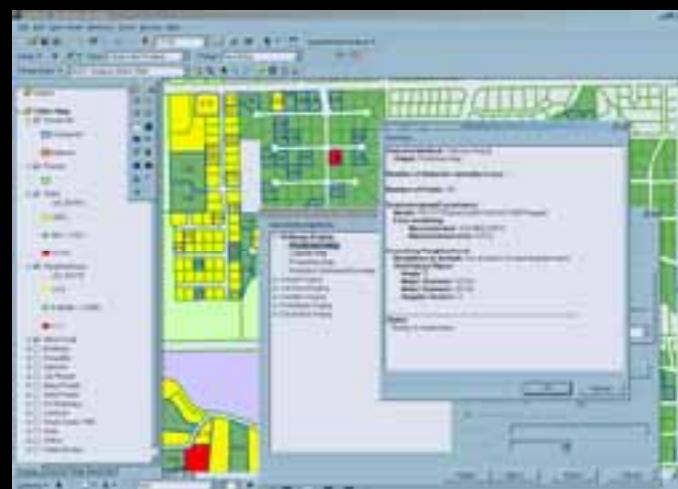
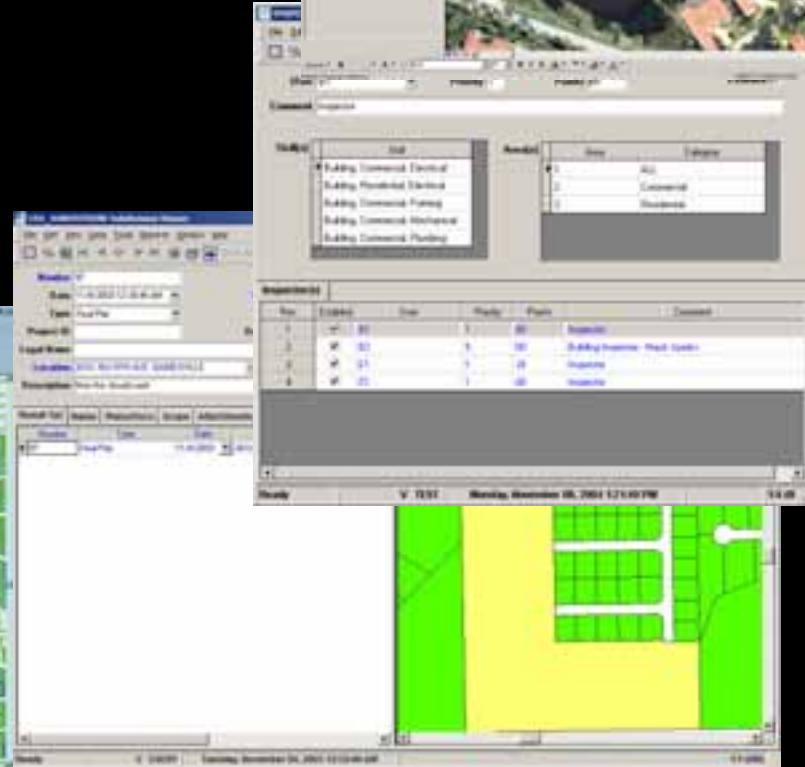
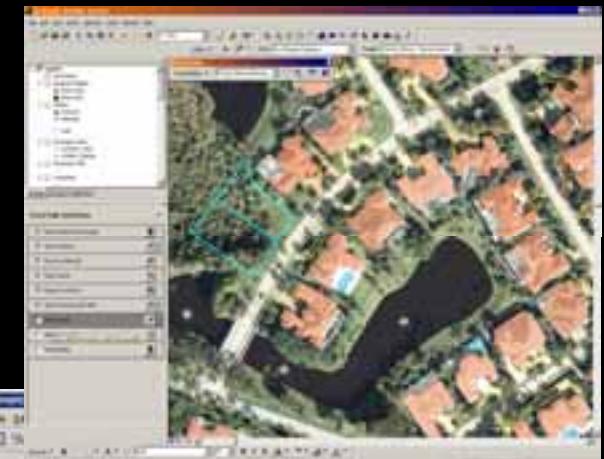


Application Implementation



Land Records Management

- Permitting
- Inspections
- Zoning Case Management
- Code Enforcement
- Contractor Licensing
- Subdivision Approval



Permitting

Result Set	Name	Parcel	Address	Plans/Docs	Attachments	Building Detail	Buildings	Other Detail	Fees	Tasks	Meetings																																																																																																																								
<table border="1"><tr><td colspan="2">Building ID</td><td colspan="2">Submitted Value</td><td colspan="2">Calculated Value</td><td colspan="2">Structure Type</td><td colspan="2">Activity</td><td colspan="2">Mobile Home</td></tr><tr><td colspan="2">Apt. 1BR</td><td colspan="2">\$230,000.</td><td colspan="2"></td><td colspan="2">Res - Single Unit Dwelling</td><td colspan="2">New Construction</td><td colspan="2">...</td></tr><tr><td colspan="2">2BR</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">2BR</td><td colspan="2"></td><td colspan="2"></td><td colspan="2">Coverage Structure</td><td colspan="2"></td><td colspan="2">Structure Area</td></tr><tr><td colspan="2">Other Units</td><td colspan="2"></td><td colspan="2"></td><td colspan="2">Gross Floor Area</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">Total Units</td><td colspan="2">1</td><td colspan="2"></td><td colspan="2">Other %</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2"># of Floors</td><td colspan="2">2</td><td colspan="2"></td><td colspan="2">Other Area</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">In Parking</td><td colspan="2">1.00000</td><td colspan="2"></td><td colspan="2">Water Prop</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">Out Parking</td><td colspan="2">2.00000</td><td colspan="2"></td><td colspan="2">Sanitary Prop</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="2">Row</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr></table>												Building ID		Submitted Value		Calculated Value		Structure Type		Activity		Mobile Home		Apt. 1BR		\$230,000.				Res - Single Unit Dwelling		New Construction		...		2BR												2BR						Coverage Structure				Structure Area		Other Units						Gross Floor Area						Total Units		1				Other %						# of Floors		2				Other Area						In Parking		1.00000				Water Prop						Out Parking		2.00000				Sanitary Prop						Row											
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Row																																																																																																																																			

Submitted Value: \$230,000.00

Calculated Value:

Structure Type: Res - Single Unit Dwelling

Activity: New Construction

Mobile Home:

Detached: 1

Duplex:

Row:

Result Set	Name	Parcel	Address	Plans/Docs	Attachments	Building Detail	Buildings	Other Detail	Fees	Tasks	Meetings	Security	Planning Info	Related
2004-05-24 PA														
Type	Date	Plan No.	# Copies	Plan Location	Location Date	Description	Number	Creator						
P-Complete Building Plans	2/26/2004	P-201	1 Rev-2		4/26/2004	Preliminary building plans	490	Matthew Archibald						
P-Suite or Tenant space numbers		P-202												
P-Specifications		P-203												
P-Building Code Summary														
D-Owner Authorization														

Type: P-Complete Building Plans

Date: 2/26/2004

Plan No.: P-201

Copies: 1 Rev-2

Plan Location:

Location Date: 4/26/2004

Description: Preliminary building plans

Number: 490

Creator: Matthew Archibald

Street Type	Steel	Fax	
Suffix Dir.		Email	archibald@archs.net
Municipality	Monticello	Web Site	archibaldarchs@aol.com
Create Date	7/2/2003		

Street Type: Steel

Suffix Dir:

Municipality: Monticello

Create Date: 7/2/2003

Fax:

Email: archibald@archs.net

Web Site: archibaldarchs@aol.com

Result Set	Related Names	Deposit Info	License Info												
<table border="1"><tr><td>Number</td><td>Expiry Date</td><td>Duration</td><td></td></tr><tr><td>Type</td><td>Status</td><td>Renewal</td><td></td></tr><tr><td>Qualifications</td><td>Identifier</td><td>Type</td><td>Description</td></tr></table>				Number	Expiry Date	Duration		Type	Status	Renewal		Qualifications	Identifier	Type	Description
Number	Expiry Date	Duration													
Type	Status	Renewal													
Qualifications	Identifier	Type	Description												

Number:

Expiry Date: 12/31/2003

Duration:

Type: Builder

Status: Revoked

Renewal: Annual

Qualifications:

Identifier	Type	Description	Expiry Date
	Local License		

Identifier:

Type: Local License

Description:

Expiry Date:

Task Type: REVIEW

Task Description: Review - Historic

Priority: HIGH

Required Approval:

Revised Plans:

Status: ASSIGNED

Task Type: REVIEW

Task Description: Review - Historic

Priority: HIGH

Required Approval:

Revised Plans:

Status: ASSIGNED

Order: 6

Assigned Date: 4/26/2004 2:05:21 PM

Assigned By: tony

Scheduled Finish: 5/3/2004

Actual Start:

Actual Finish:

Comment List:

Comment:

Reminder:

Complete:



WOOLPERT

Inspections

INSPECTOR: Inspector Setup Viewer

User: B1 Priority: 1 Points: 60

Comment: Inspector

Skill(s):

Skill
Building, Commercial, Electrical
Building, Residential, Electrical
Building, Commercial, Framing
Building, Commercial, Mechanical
Building, Commercial, Plumbing

Area(s):

Area
1
2
3

Inspector(s):

Rec	Enabled	User	Priority	Points	Comment
1	<input checked="" type="checkbox"/>	B1	1	60	Inspector
				60	Building Inspector - Mack S...
				24	Inspector
				60	Inspector

November 08, 2004 1:21:49 PM

Code Enforcement



The screenshot displays a software application for code enforcement. The top portion shows a 'Case Notes' tab in a main window with a table of case notes, including 'A PROPERTY OWNER IN THE AREA REPORTED TH...'. The bottom portion shows a 'Case Details' tab in a main window with a table of case details, including 'Case Detail #' and 'Staff'.

In...	Case Detail #	Staff	Department	Notes	Date
...	Demo User	Building Inspector		A PROPERTY OWNER IN THE AREA REPORTED TH...	11/27/2002

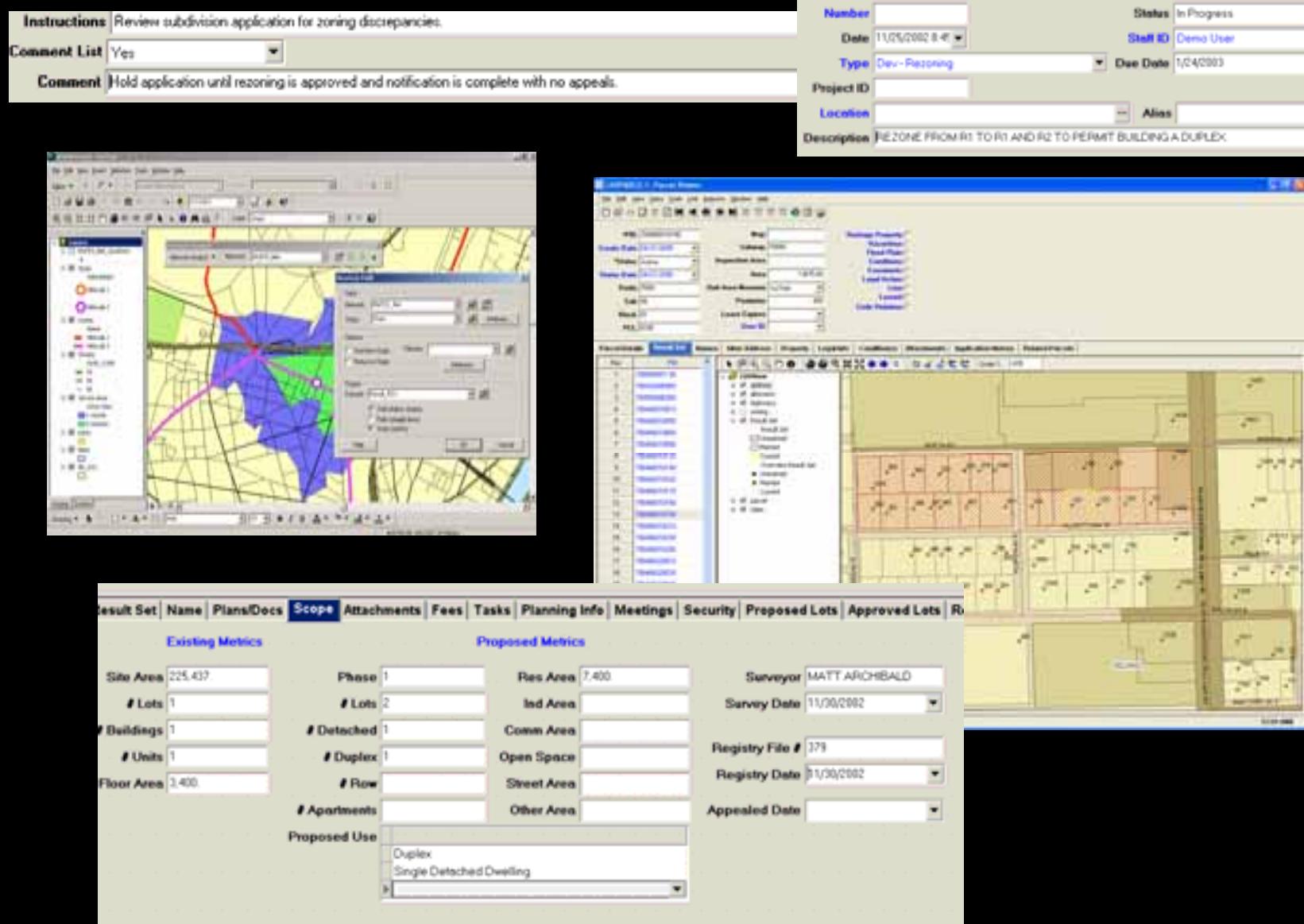
Zoning

Instructions: Review subdivision application for zoning discrepancies.

Comment List: Yes

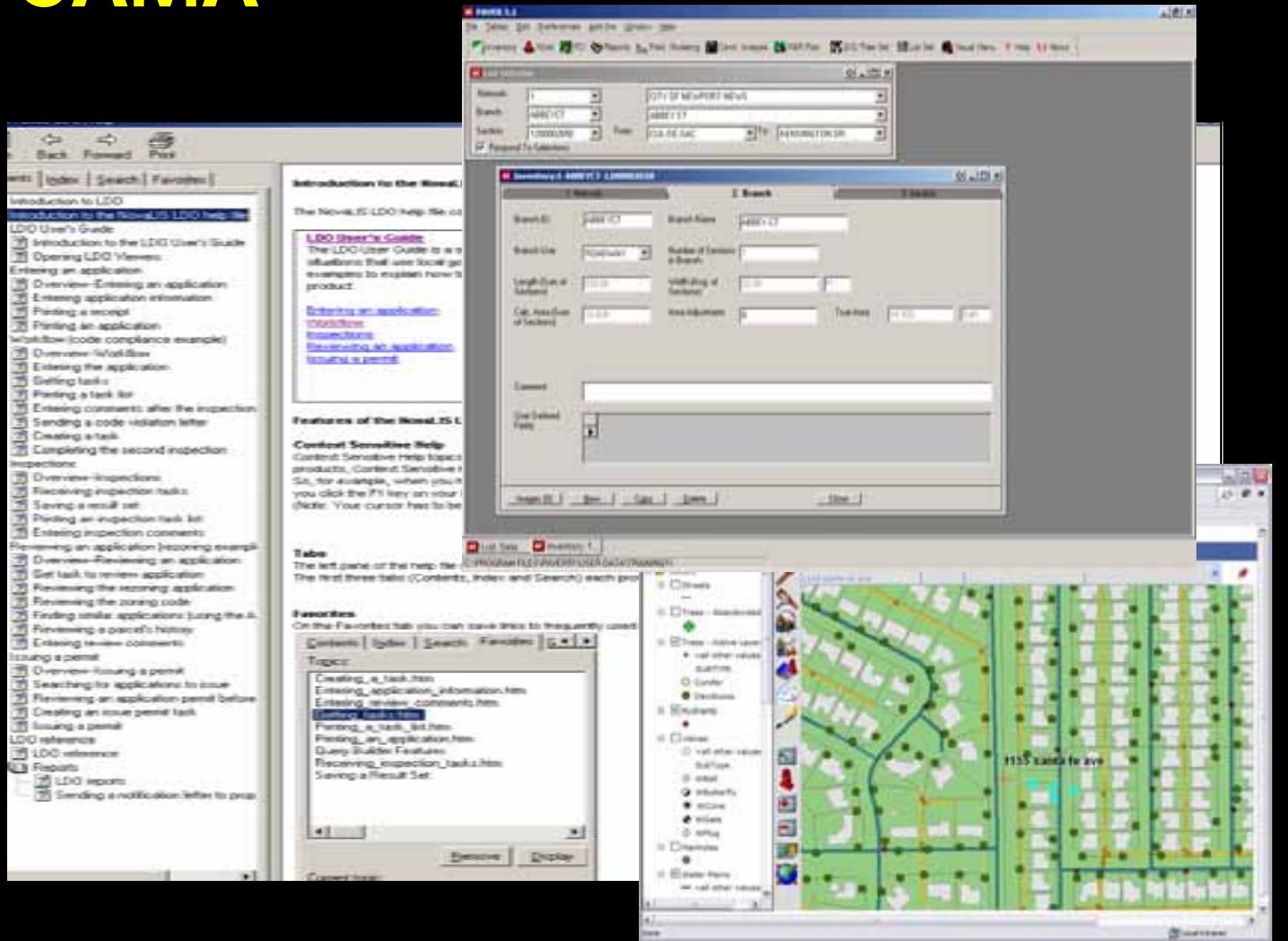
Comment: Hold application until rezoning is approved and notification is complete with no appeals.

Number:
Status: In Progress
Date: 11/05/2002 8:45
Staff ID: Demo User
Type: Dev - Rezoning
Due Date: 1/24/2003
Project ID:
Location: Alias:
Description: REZONE FROM R1 TO R1 AND R2 TO PERMIT BUILDING A DUPLEX.



Existing Metrics		Proposed Metrics	
Site Area	225.403	Phase	1
# Lots	1	# Lots	2
# Buildings	1	# Detached	1
# Units	1	# Duplex	1
Floor Area	3,400	# Row	
		# Apartments	
		Proposed Use	
		Duplex	
		Single Detached Dwelling	

CAMA



CMMS

Work Order Cost Summary

Work Order

File Tools

Save Print Costs Email Delete

General Details Attachments Cycle Print

Description: Repair Gravity Main

Entity Type: SGMAIN

Number: 40026

Status: **CLOSED** Priority: 1 High

Requested By: Coburn, Tom J.

Initiated By: Coburn, Tom J. 4/3/2003 4:05:27 PM

Submitted To: Methner, Joseph E. 4/3/2003 4:05:49 PM

Supervisor: Methner, Joseph E.

Projected Start/Finish: 04/03/2003 MM/DD/YYYY

Opened By:

Completed By: Harmon, Timothy L.

Actual Start/Finish: 04/09/2003 04/11/2003

Close Work Order: Harmon, Timothy L. 4/21/2003 8:20:01 AM

General Location: 1037 FOREST BAY

Locate

Comments: [] Editor [] Instruction [] Map Layers

New Comments:

Existing Comments:

Submitted to Methner, Joseph E. on 4/3/2003 4:05:49 PM by Coburn, Tom J.

By Coburn, Tom J. on 4/3/2003 4:14:27 PM. Miss dig 30098585

By Harmon, Timothy L. on 4/10/2003 8:29:52 AM. On 4-9-03, tried to remove cement out of sewer main. Was able to break it up a little.

By Harmon, Timothy L. on 4/11/2003 3:40:28 PM. 4-10-2003. Tried to break up cement again out of sewer main, could not. Had Inland waters try, unsuccessful.

Work Order Cost Summary

Overall Cost Summary

	Actual	Estimated (single)	Estimated (group)	Difference	Percent Difference
Labor	\$4,293.78	\$0.00	\$0.00	\$4,293.78	NA
Material	\$305.10	\$0.00	\$0.00	\$305.10	NA
Equipment	\$4,331.00	\$0.00	\$0.00	\$4,331.00	NA
Total	\$8,929.88	\$0.00	\$0.00	\$8,929.88	NA

Actual Labor

Name	Type	Group	Co.	H	Cd
Fritz, William	Employee	Administration			
Fisher, Frank M.	Employee	Administration			
Cassidy, Jim	Employee	Sewer			
Wallace, Kath	Employee	Administration			

Total: \$4,293.78

Estimated Labor

Name	Type	Gr.	Co.	Ra.	H	Cd
------	------	-----	-----	-----	---	----

Total (single): \$0.00 Total (group): \$0.00

Actual Material

Description	U.	Source	SI	Entity
8inch Truss Pipe	10	Inventory	N	
6"X15" REPAIR CLAMP	2	Inventory	N	
6AA stone	5	Inventory	N	

Total: \$305.10

Estimated Material

Description	Unit R.	Cost	Source
-------------	---------	------	--------

Total (single): \$0.00 Total (group): \$0.00

Actual Equipment

Description	Hours Rep.	Units
1996 FORD VACTOR	8	1
DISTRIBUTION 1999	7	1
T.V. TRUCK 1998	9	1
DISTRIBUTION 1996	9	1

Total: \$4,331.00

Estimated Equipment

Description	Hours	Units	Rate
-------------	-------	-------	------

Total (single): \$0.00 Total (group): \$0.00

Print Cost: \$0.00

Copy to Excel

Start Microsoft Powerpoint ArcView GIS View Work Order 5... Work Order 2:55 PM

Mobile Applications

Wireless Drawing and Data Management

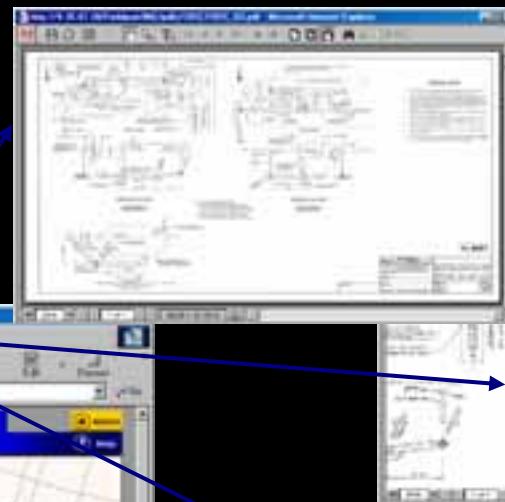
Field Documents

Complete Listing of Documents Related to Map Selection



Map ID	Sheet ID	Document Name	Date
00001	1 of 4	Watermain Drawing and Water-Regulating Valve	Watermain Drawing - Sheet 1 of Drawing Map 1, 2000
00002	2 of 3	Watermain Drawing and Water-Regulating Valve	Watermain Drawing - Sheet 2 of Drawing Map 1, 2000
00003	3 of 4	Watermain Drawing and Water-Regulating Valve	Watermain Drawing - Sheet 3 of Drawing Map 1, 2000
00004	4 of 5	Watermain Drawing and Water-Regulating Valve	Watermain Drawing - Sheet 4 of Drawing Map 1, 2000

As-built Drawings



GIS-enabled Document Retrieval



Facility Operations Manuals

Data Viewing Tools

HBWS ArcIMS Application - Microsoft Internet Explorer provided by Honolulu Board Of Water Supply

HONU Honolulu ONline Utilities

GIS Home SEARCHES SAVED VIEWS SERVICE INFO DOCUMENTS PRINT/REPORT

Choose your search method: **- Search By Tax Map Key -** Enter Tax Map Key: **11004035** **search**

Welcome, Guest User
Tue, November 18, 2003

MAP LAYERS
More layers will become available depending on the current map scale

- [BWS Water System](#)
- [Base Information](#)
- [Projects](#)
- [Contours](#)
- [Other Utilities](#)
- [Aquifers](#)
- [Political Districts](#)
- [Land Information](#)
- [Roads and Streets](#)

Expand All **Collapse All**

Layer Information

Tax Map Key

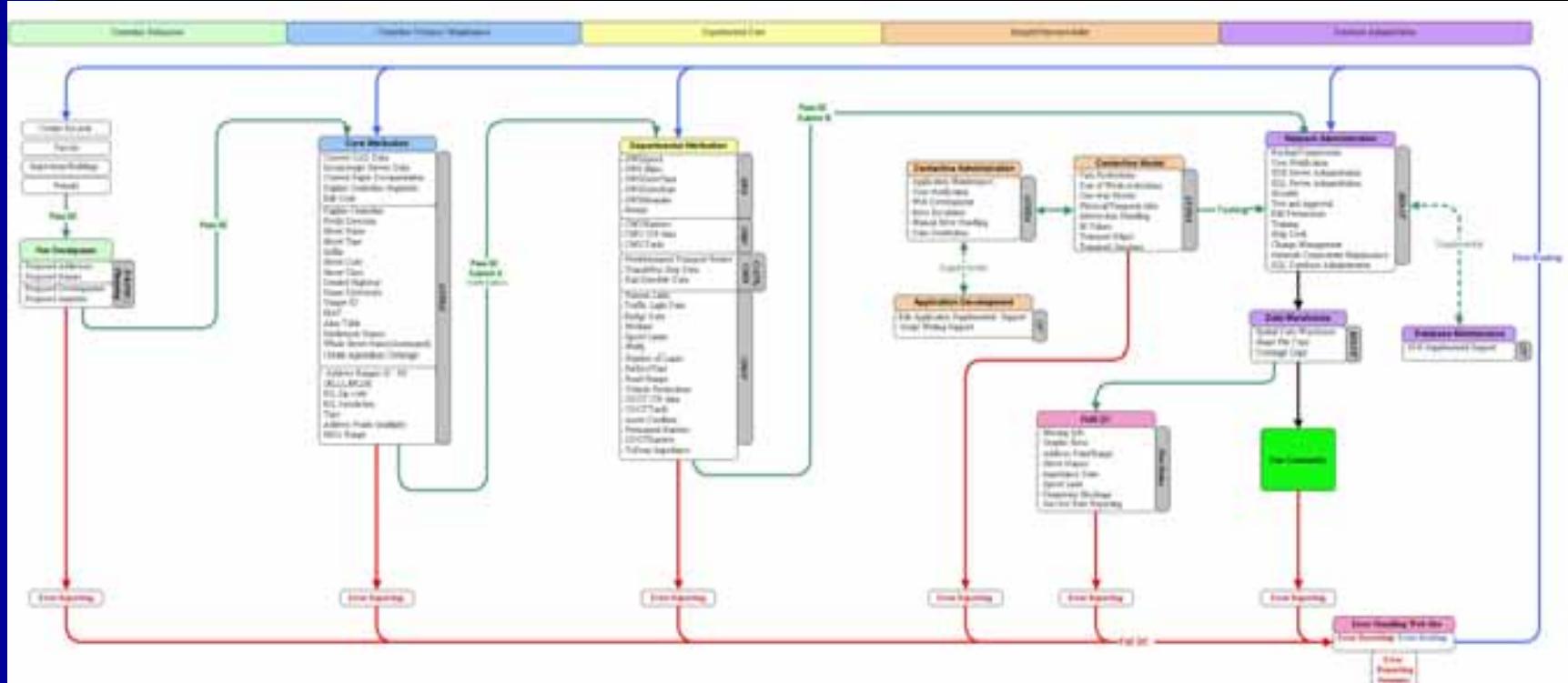
To search by tax map key, type the tax map key value in the input box and click on the search button. When the parcel is located the "show all services" button will link you to the service information for selected parcel.

Example: 1100-4076

Copyright (C) 2000 HONU

Zoom In Zoom to scale 1: 392065 Go BWS Facilities: - ZOOM TO BWS FACILITY- Parcels is now the Active Layer

But Workflow Is Key to Success



Measuring Success

- Build metrics to evaluate successes:
 - How does the new system improve business processes?
 - Are you able to utilize business processes perfected over many years in the new system?
 - How readily can the system respond to changes as they are needed?
 - Can you take advantage of other technologies and systems available in the County that you couldn't before?
 - Is core information more accessible? By how much?

Benefit: Accountability and Communication

- Shared Change Management
- Benefits:
 - Distributed change management
 - Shared accountability
 - Broad user representation
 - Defined process for making changes
 - Defined process for error escalation
 - Forum to review future changes and impacts
 - Potential regional coordination

Questions



Thank You

Jim Kiles

Jim.Kiles@Woolpert.com

704.907.5515

