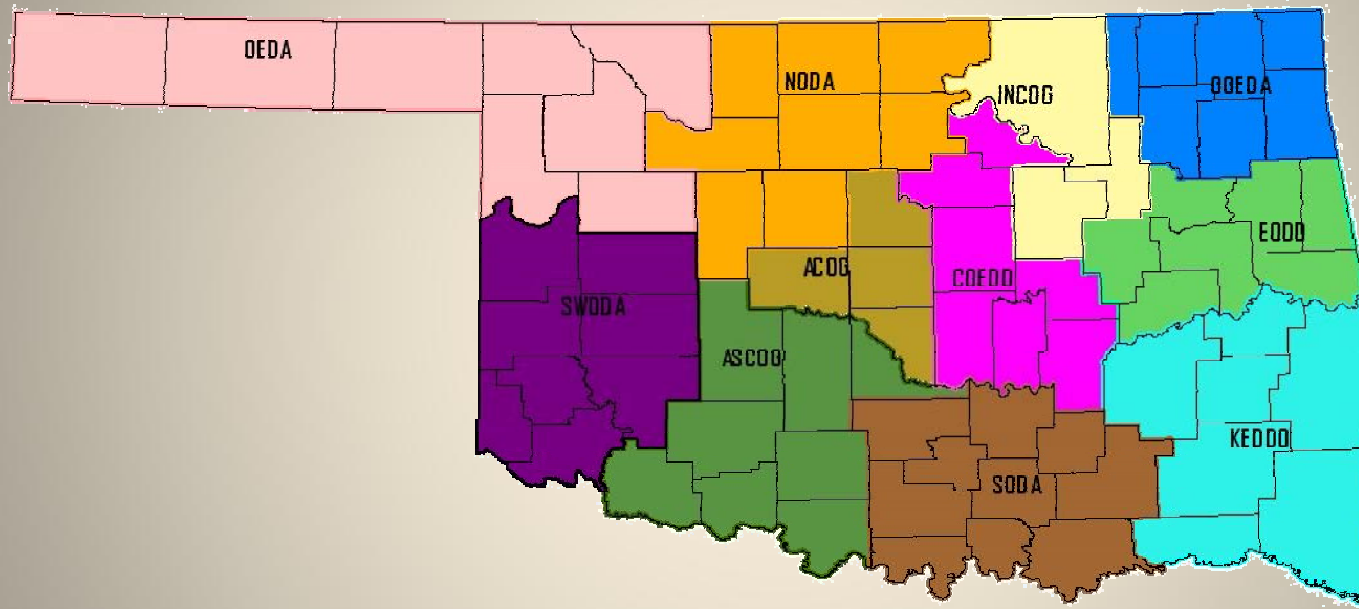


# **IMPLEMENTING A GIS MAPPING & INVENTORY PROJECT AT THE LOCAL GOVERNMENT LEVEL FEATURING THE TOWN OF ARAPAHO**



# COUNCILS OF GOVERNMENT

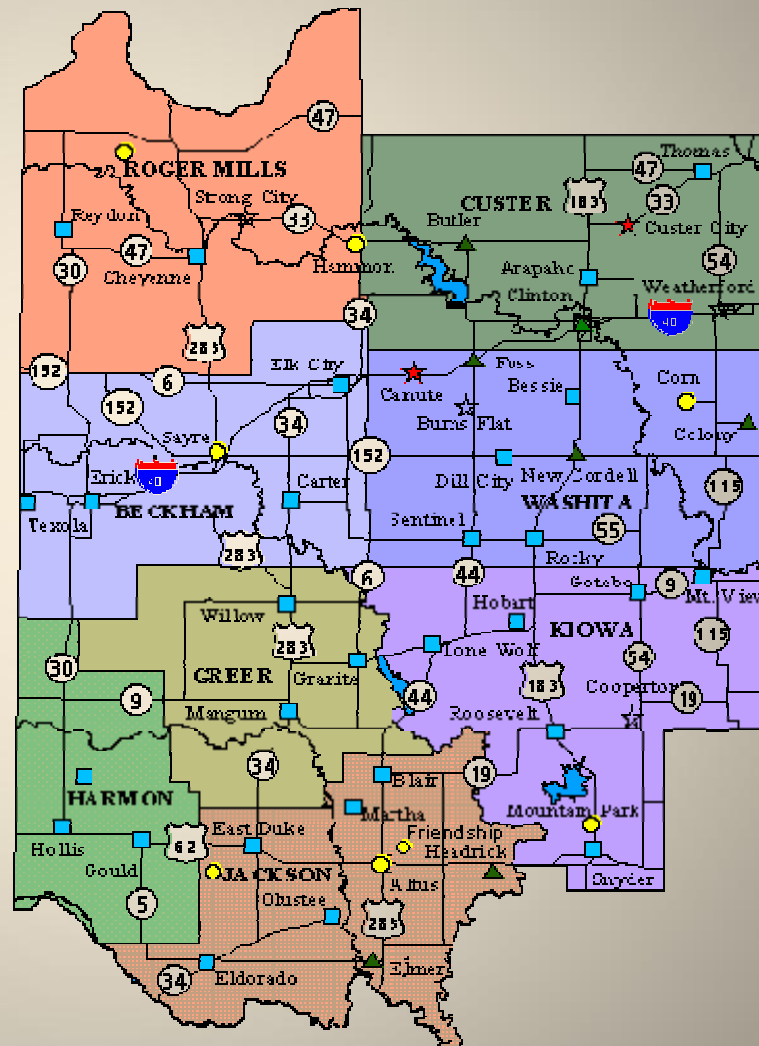


# SOUTH WESTERN OKLAHOMA DEVELOPMENT AUTHORITY

SWODA has 48 cities and towns  
8 counties and  
9 conservation districts.

Capital Improvement Planning is an  
integral part of our southwest  
region. SWODA currently has 53  
completed CIP's 47 entity, 4  
county and 2 conservation  
districts.

GIS mapping has been completed on  
45 entities, 4 counties and 2  
conservation districts.



# CAPITAL IMPROVEMENT PLANS

- CIP's provide inventory and mapping of community owned assets through a GIS tool to assess, manage and plan for infrastructure needs
- SWODA currently has 51 CIP's digitally mapped and six under contract at this time.
- CIP's give entities the ability to identify the top priority need and funding sources to be utilized
- Points are given on other grants for the project if it is listed in the top priority

# CIP PROCESS

- Inventory of all entity assets
- GPS of infrastructure
- Link data and digital information
- Data and mapping provided to entity
- Utilize information in daily operations such as budgeting, emergency operations and planning

# Inventory

- On-site inventory of all infrastructure using different methods such as GPS, metal detecting, review of engineer maps and utilizing the knowledge of the entity employees
- Identify the condition, cost and remaining useful life of each asset
- Identifies any problems with utility system such as blockage in sewer system lines before the problem becomes major
- Record all information into a database

# Excel Spreadsheet

Microsoft Excel - Sewer Appurtenance MH 1.xls

File Edit View Insert Format Tools Data Window Help

100% Gill Sans 8

**1 Sewer System Appurtenance Inventory**

Community: Reydon  
Date: 2.18.10  
Surveyor: Dennis Plemons / Ann Marie

Page 1 of 2

Line #	Appurtenance ID #	Appurtenance Type	Segment ID #	Condition	Comment	Remaining Useful Life	Cost to Improve or Replace	Surveyor Priority	LPAC Priority
1	MH-001	Manhole	SL-012		Cannot Locate				
2	MH-002	Manhole	SL-001	I	Needs raised	5	\$250	D	
3	MH-003	Manhole	SL-003	I	Needs raised	5	\$250	D	
4	MH-004	Manhole	SL-004		Cannot Locate				
5	MH-005	Manhole	SL-012	I	Needs raised	5	\$250	D	
6	MH-006	Manhole	SL-002	I	Needs raised	5	\$250	D	
7	MH-007	Manhole	SL-003	I	Needs raised	5	\$250	D	
8	MH-008	Manhole	SL-011	I	Needs raised	5	\$250	D	
9	MH-009	Manhole	SL-007		Cannot Locate				
10	MH-010	Manhole	SL-011	I	Needs raised	5	\$250	D	
11	MH-011	Manhole	SL-012	I	Needs raised	5	\$250	D	
12	MH-012	Manhole	SL-006	I	Needs raised	5	\$250	D	
13	MH-013	Manhole	SL-006	I	Needs raised	5	\$250	D	
14	MH-014	Manhole	SL-011	I	Needs raised	5	\$250	D	
15	MH-015	Manhole	SL-012	I	Needs raised	5	\$250	D	
16	MH-016	Manhole	SL-008	I	Needs raised	5	\$250	D	
17	MH-017	Manhole	SL-010	I	Needs raised	5	\$250	D	
18	MH-018	Manhole	SL-011	I	Needs raised	5	\$250	D	
19	MH-019	Manhole	SL-018	I	Needs raised	5	\$250	D	
20	MH-020	Manhole	SL-014		Cannot Locate				
21	MH-021	Manhole	SL-014		Cannot Locate				
22	MH-022	Manhole	SL-014		Cannot Locate				
23	MH-023	Manhole	SL-017	I	Needs raised	5	\$250	D	
24	MH-024	Manhole	SL-017	I	Needs raised	5	\$250	D	
25	MH-025	Manhole	SL-017	I	Needs raised	5	\$250	D	
Totals							\$4,750		

General Appurtenance Printout sewapp.dbf

Ready

start iTunes Inbox - Microsoft Out... ArcCatalog - ArcInfo ... Reydon.mxd - ArcMa... Microsoft PowerPoint ... Microsoft Excel - Sew... 90 °F 2:27

SWODA

Cherokee South Central ArcGIS User Group

Making 2010 Count

# GIS

- Lets you visualize information in ways that can reveal relationships not readily apparent when looking at data in tabular or other formats. Patterns, trends, concentrations, vacancies, etc., can be viewed and studied for current assessments and for planning purposes.
- GIS is a powerful tool that can be used to simply view spatial data or maps or used for complex spatial studies involving many types of data.



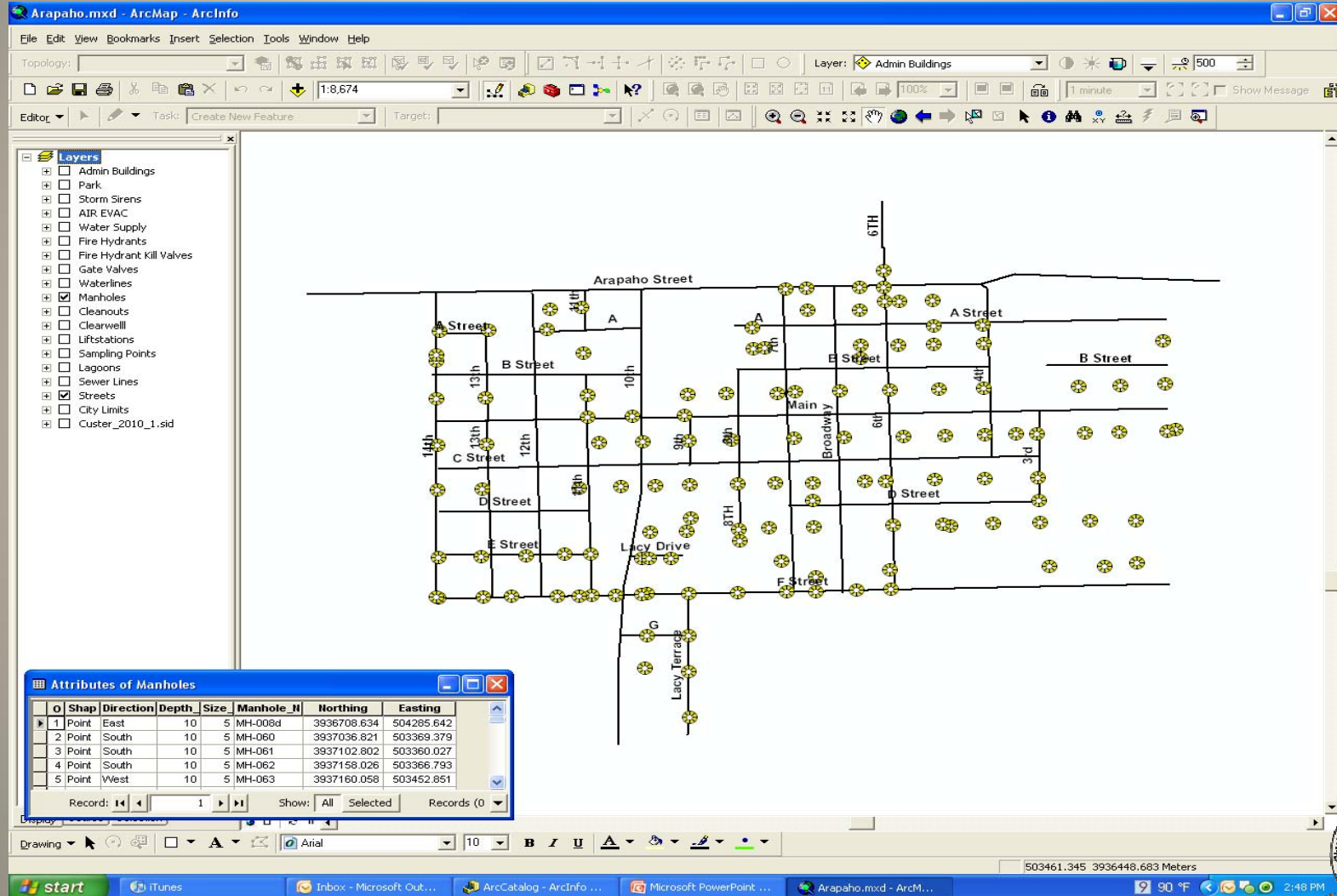
# BENEFITS OF GIS

- Comprehensive digital maps of all assets
- Detailed attribute information for individual assets
- Easily updated maps and attributes
- Real-time tool for Capital needs and budgeting
- Decisions based on real data
- Personnel knowledge in recordable format

# GPS

- Physically locate all infrastructure
  - Metal detect manholes, valves and other assets that have been buried in the ground
  - Take a GPS reading of identified assets
  - Record all information about that asset such as condition, type, cost, size and other valuable data
- All GPS data will be linked to the database and map

# GPS Location of Manholes

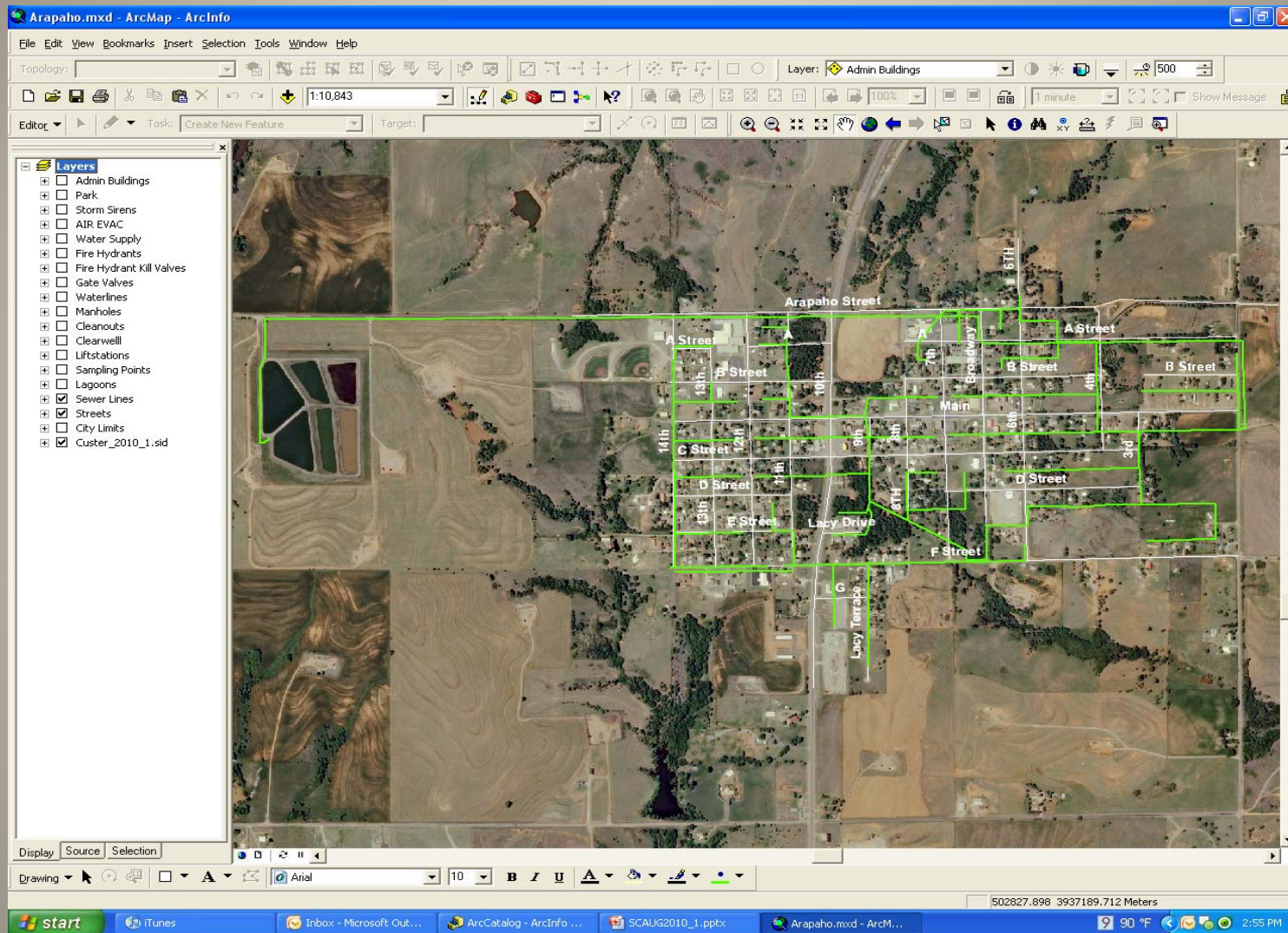


# Mapping

- Create standardized forms to collect information about the assets.
- Research original system drawings such as engineering and plat maps to create updated maps which are valuable to use in daily work environments.
- Import all data collected in the field from the GPS unit so that you have spatially correct information connected to database of infrastructure.
- All data and mapping is provided to entity. Personnel is trained on use of mapping software and database provided.

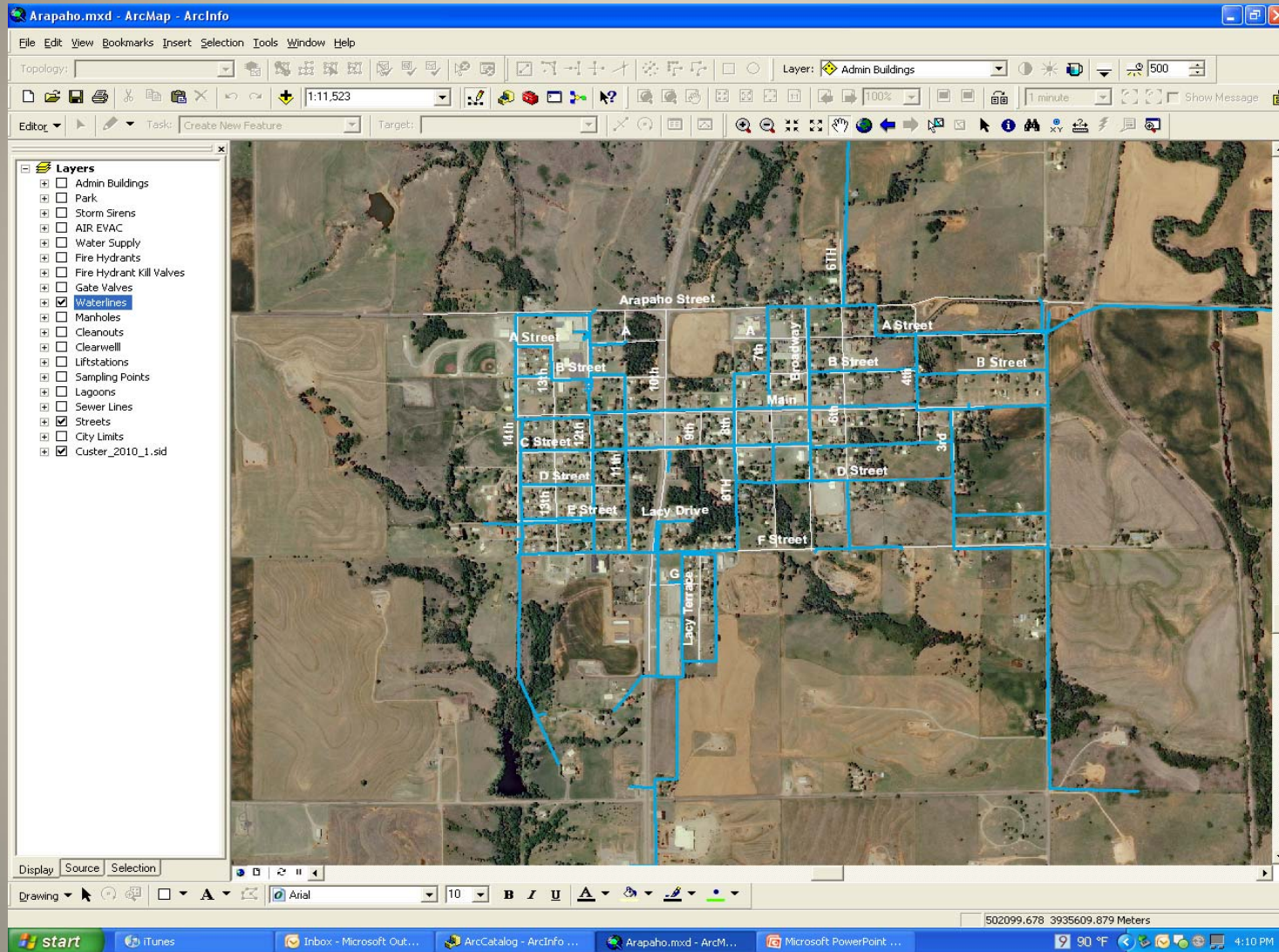


# Sewer System





# Water System





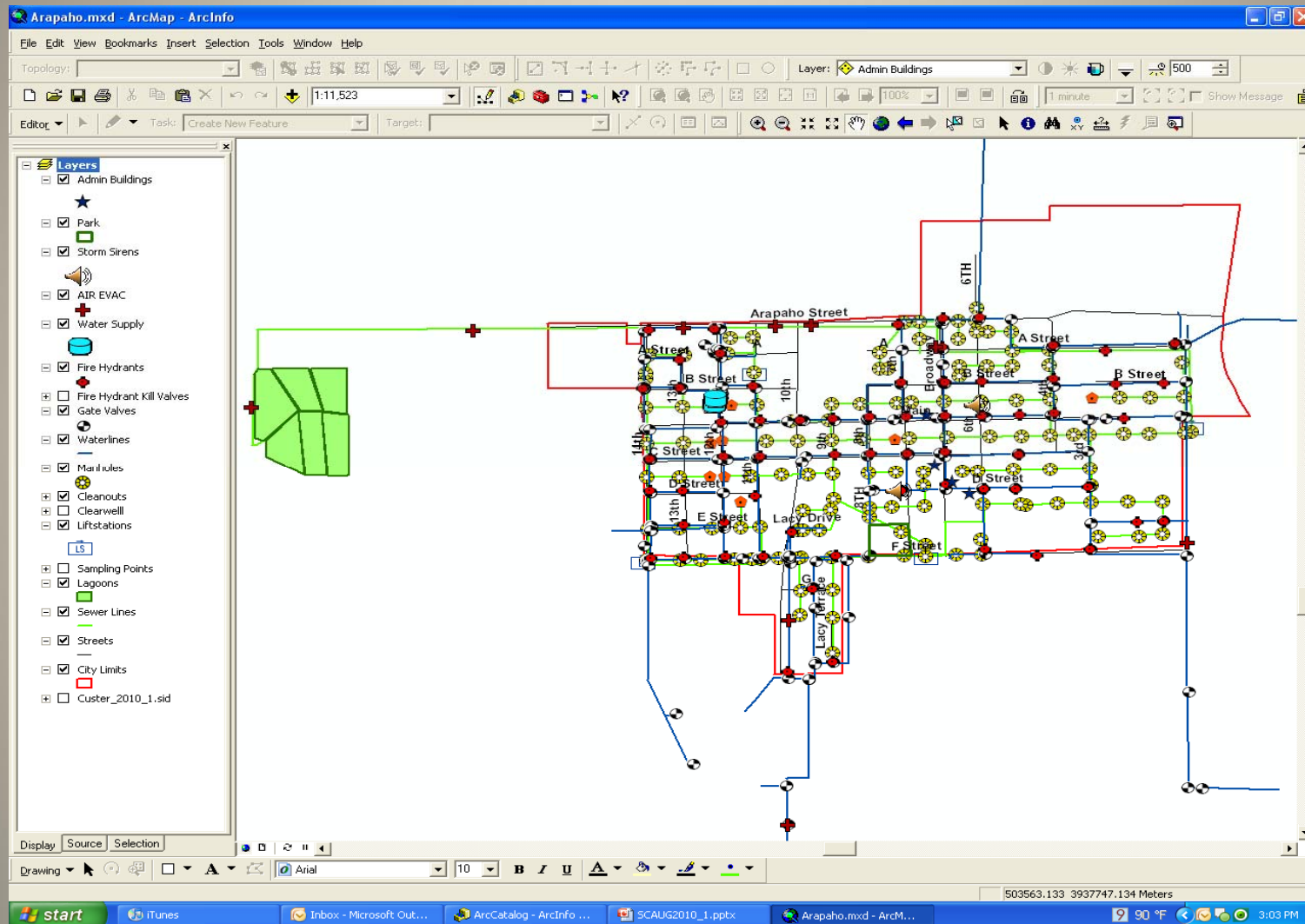
**Attributes of Sewer Lines**

OBJE	Shape	SEGME	COMMUNITY	SEGMENT	LENGTH	SIZE	TYPE	CLASS	CLEANOUTS	MANHOLES	SERV TAPS	CONDITION	COMMENTS	REM_LIFE	Shape_Length
1	Polyline	SL-001	ARAPAH	SL-001	15	10	PVC	0	0	1	0	S	LIFT STATION TO MH-001	20	16.163955
2	Polyline	SL-002	ARAPAH	SL-002	18	10	RED	0	0	1	0	S	0	20	19.279516
3	Polyline	SL-003	ARAPAH	SL-003	2700	8	CLAY	0	1	8	0	I	NEEDS IMPROVEMENTS/TREE R	20	822.1903
4	Polyline	SL-004	ARAPAH	SL-004	385	10	CLAY	0	0	1	0	S	0	20	115.978084
5	Polyline	SL-005	ARAPAH	SL-005	1425	8	CLAY	0	0	6	0	S	0	20	440.092945

Record: 0 | Show: All Selected | Records (0 out of 67 Selected) | Options



# Completed Map





# GIS APPLICATIONS

- Asset Inventory Control
- Capital Asset Management
- Cemetery Mapping & Database Management
- Census Interpretation & Statistical Mapping
- Disaster Management
- E911 (Addressing)
- Environment Quality Management
- Floodplain Zoning, Management & Analysis
- GASB-34
- Grant & Project Tracking
- Hazard Area Identification
- Hazard Mitigation (Project Impact)
- Housing
- Infrastructure Planning (CIP)
- Natural Resources Development & Conservation
- Property Inventory
- Redistricting
- Regional GIS Group
- Residential & Commercial Structure Evaluation
- Rezoning
- Rural/Unincorporated Area Planning
- Site Location / Business Location
- Soil Conservation
- Federal/State/Local Park Management
- Urban/Incorporated Area Planning
- Wildlife Management
- Brownfields Assessment



# South Western Oklahoma Development Authority

**Jana Harris GISP, CFM**

Director of Community &  
Economic Development

[jana@swoda.org](mailto:jana@swoda.org)

**Ann Marie Waugh**

GIS Specialist

[annmarie@swoda.org](mailto:annmarie@swoda.org)

Lynn Maloy

Utility Superintendent

Town of Arapaho



