

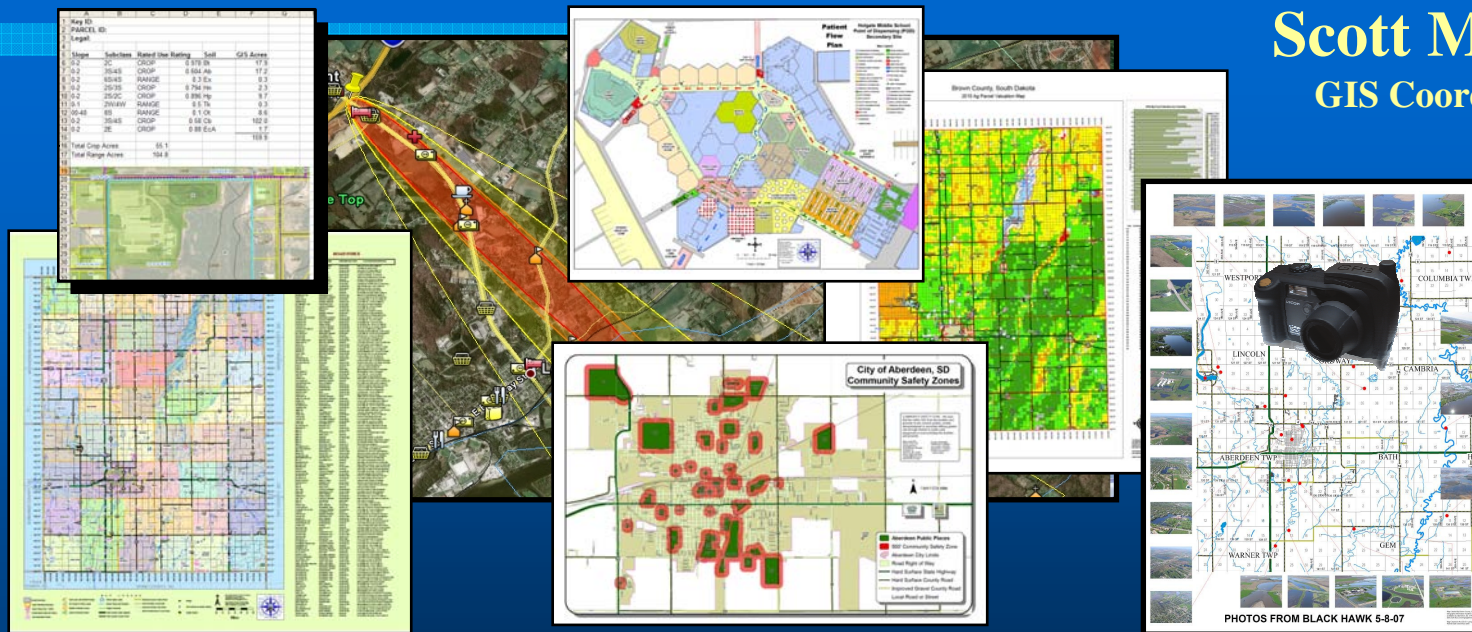


Brown County

South Dakota

“A Local Perspective on GIS”

Scott Madsen
GIS Coordinator



25th Regional Local Roads Conference, Rapid City, SD

October 20, 2010

FACT:



**95% of all government
information is spatial
in nature**



Brown County Departments Using or Benefiting from GIS:

- Equalization (Assessor)
- Zoning & 911-Addressing
- E911 Emergency Dispatch
- Emergency Management
- Road and Infrastructure Mngt
- GIS (providing coordination for all county departments)
- County Commission
- Sheriff, Jail, JDC, Criminal Investigators
- States Attorney, Court Services
- Auditor, Treasurer, Register of Deeds
- Cooperative Extension, Weed and Pest
- Property Management (Bldg & Grounds)
- Public Assistance (Welfare, VA, Others)

Other Local Organizations Benefiting from Brown County's GIS:

- Fire & Rescue Departments
- Police Departments
- Avera Care Flight
- Area School Districts
- City of Aberdeen Departments
- Rural City Departments
- NorthEast Council of Governments
- Local Media and area Decision Makers
- Local Utility and Engineering Companies
- US Department of Agriculture
- Game, Fish & Parks, US Fish & Wildlife
- Real Estate, Insurance & Finance Companies
- Plat Book, Map and Phone Book Publishers
- National Weather Service
- US Postal Service

File Edit View Go Tools Window Help

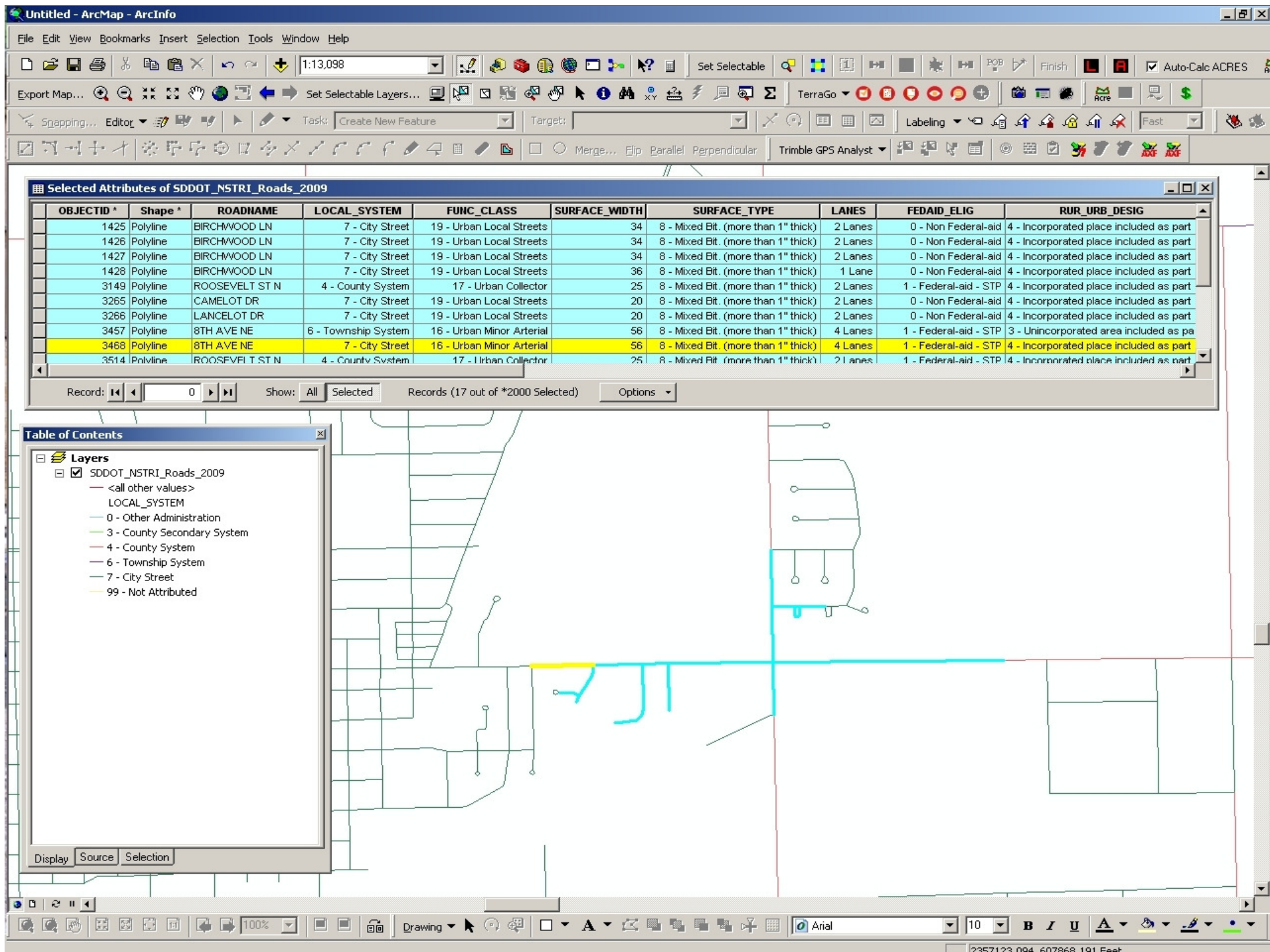


Location: C:\Documents and Settings\sbmadsen\My Documents\GIS\CURRENT_DATA\BRO Stylesheet: FGDC ESRI

Contents Preview Metadata

BROWN

- CAD
- Data_Imagery_Tables
- Metadata_Schema_Scripts
- Temporary
- Brown_Geodatabase.mdb
 - Addressing_Data
 - Administrative_and_Land_Use_Data
 - Annotation
 - Emergency_Mngt_Data
 - Environmental
 - Historical_Recreation_Tourism
 - Infrastructure
 - LandUse_State_Plane_Data
 - Aberdeen_CAD_Parcels_07_01_08
 - Brown_Addressed_Roads_05_01_08Anno
 - Brown_Addressed_Roads_10_09_08**
 - Brown_Addressing_Boundaries_09_22_08
 - Brown_County_Boundary_10_01_07
 - Brown_CSZ_500ft_Buffer_10_01_07
 - Brown_FSA_Crop_and_Grass_2007
 - Brown_Legislative_Districts_02_13_08
 - Brown_Parcels_05_01_08
 - Brown_Parcels_10_01_08
 - Brown_Public_Places_10_01_07
 - Brown_Quarter_Quarters_10_01_07
 - Brown_Quarters_10_01_07
 - Brown_Section_Corners_10_01_07
 - Brown_Sections_10_01_07
 - Brown_Soils_12_2006
 - Brown_Townships_Legal_10_01_07
 - Brown_Townships_Political_05_01_08
 - Brown_Unincorporated_Places_10_01_07
 - Brown_Voting_Precincts_02_13_08
 - Brown_WEB_Water_Mains_10_15_08
 - Brown_Zoning_05_01_08
 - Richmond_Lake_San_Dist_12_01_07
- Transportation
 - 2006_10_17_TIN_Extract_Table
 - _MSAG
 - Address
 - ALTERNATE_NAME
 - BCSOILS
 - CompSearch
 - EXT_LEGAL
 - M_SPECIALS_1
 - MASTER_Parcels_List
 - PARCELS
 - ParcSum
 - SALES_ADDRESS



SD DOT Dept of Inventory Management

Counties in South Dakota 66
Avg Road Segments per County X 3000
Avg # Data to Attribute to Each Road Segment X 30

Total # Data to Attribute and Maintain Annually: Almost 6 Million

(Local Jurisdiction, Surface Type, Federal Aid, Avg Daily Traffic, etc)

LOCSYS_DESCRIPTION	Total # Segments	Total Feet	Miles
City Street	2456	1067524	202.2
County System Road	1063	3574677	677.0
No Local Administration	101	233978	44.3
State Highway System	368	1123384	212.8
Township System Road	2736	10647746	2016.6
TOTALS:	6724	16647310	3153

Brown County:

Road Segments: 6700
Data per Segment: x 30

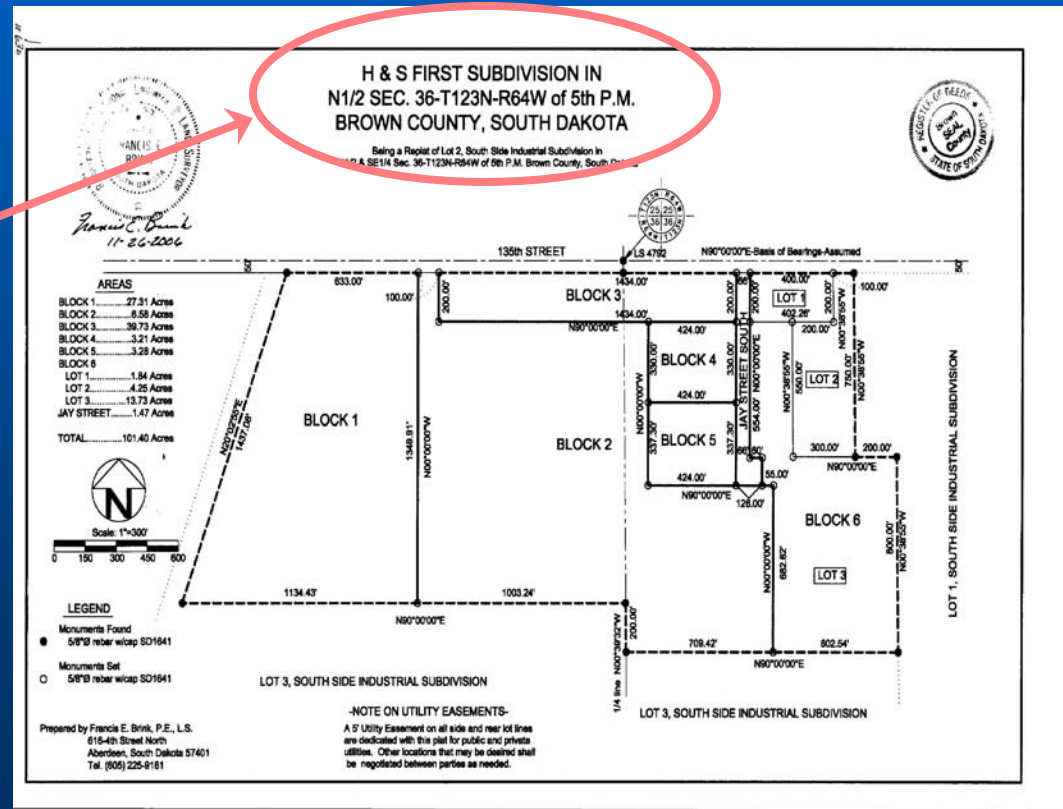
200,000 Data

Supports Planning & Development

Where is it located?

Who is it going to affect?

What is it going to affect?

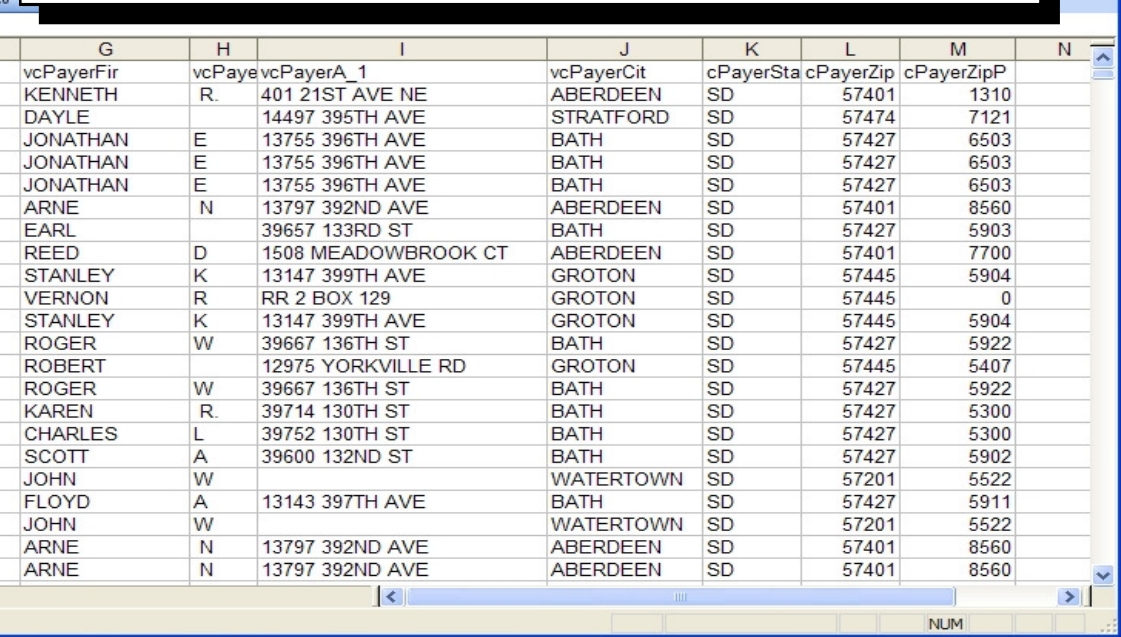


Supports Road ROW and Corridor Research

Legal Description: N ½ of SW ¼ S25 – T125N
– R64W *Ex School Lot*

Lot 3 of 3rd
Replat of
Millers OL F
Ex Rd Row





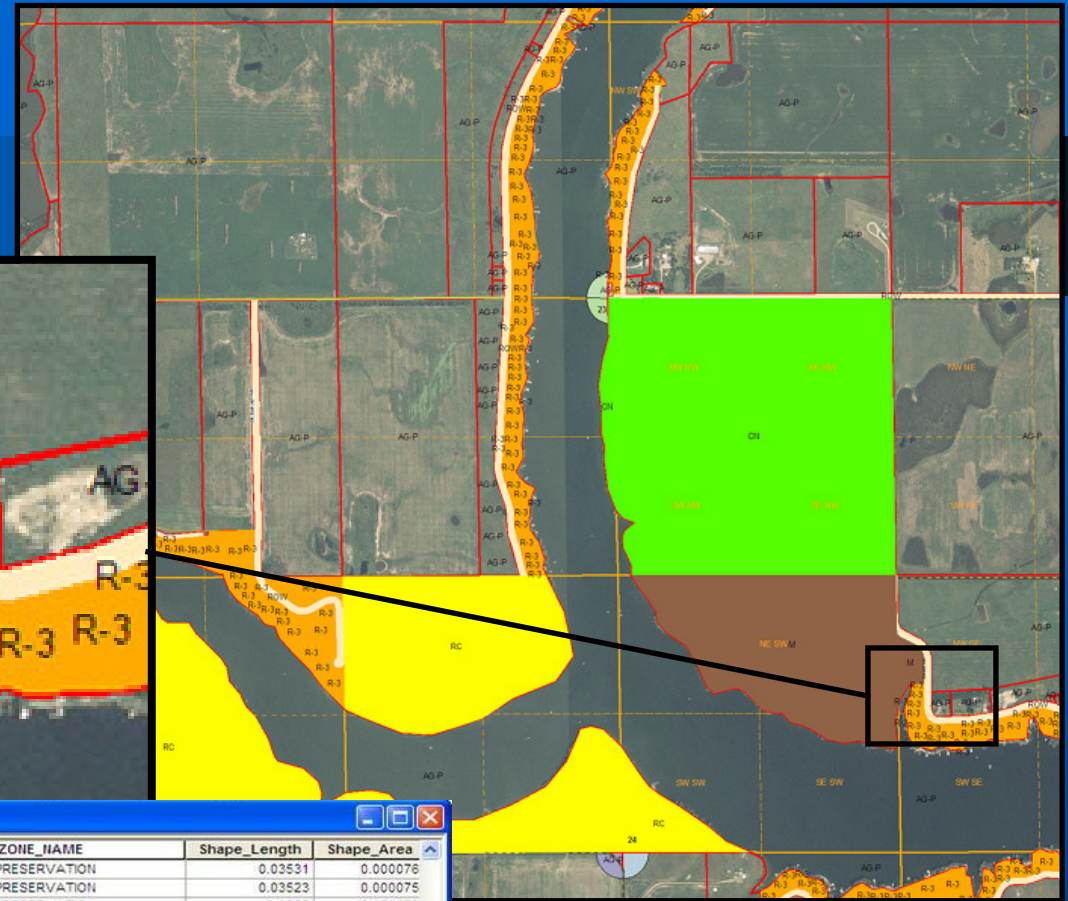
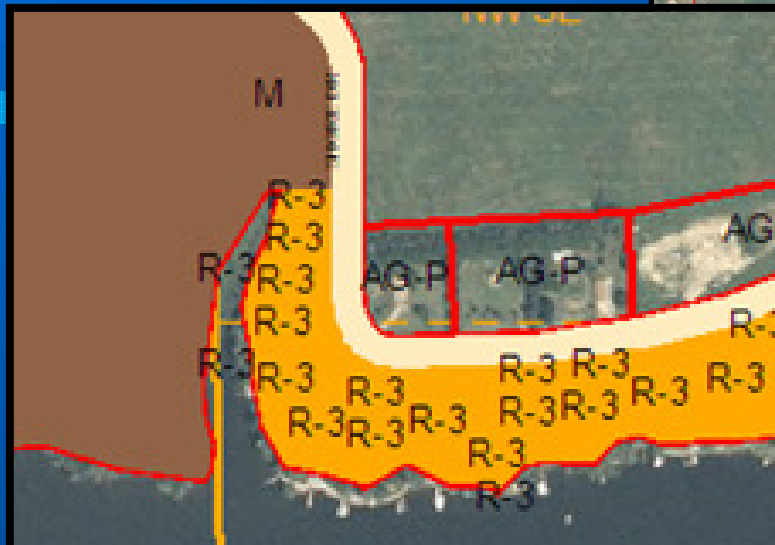
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	PARCEL	QUARTE	SECTION	TOWNSHIP	RANGE	vcPayerLas	vcPayerFir	vcPayer	vcPayerA_1	vcPayerCit	cPayerSta	cPayerZip	cPayerZipP	
2	7714	NE	7	121 N	62 W	JARK	KENNETH	R.	401 21ST AVE NE	ABERDEEN	SD	57401	1310	
3	7782	NE	18	121 N	62 W	LUDEKE	DAYLE		14497 395TH AVE	STRATFORD	SD	57474	7121	
4	4574	NW	27	123 N	62 W	LOCKEN	JONATHAN	E	13755 396TH AVE	BATH	SD	57427	6503	
5	4575	SE	27	123 N	62 W	LOCKEN	JONATHAN	E	13755 396TH AVE	BATH	SD	57427	6503	
6	4576	SW	27	123 N	62 W	LOCKEN	JONATHAN	E	13755 396TH AVE	BATH	SD	57427	6503	
7	4622	NE	28	123 N	62 W	SVARSTAD	ARNE	N	13797 392ND AVE	ABERDEEN	SD	57401	8560	
8	4625	SE	28	123 N	62 W	STAHL	EARL		39657 133RD ST	BATH	SD	57427	5903	
9	4660	NW	33	123 N	62 W	SWENSON	REED	D	1508 MEADOWBROOK CT	ABERDEEN	SD	57401	7700	
10	3905	NW	12	123 N	62 W	KNUDSEN	STANLEY	K	13147 399TH AVE	GROTON	SD	57445	5904	
11	3914	SW	13	123 N	62 W	WALTER	VERNON	R	RR 2 BOX 129	GROTON	SD	57445	0	
12	3915	NW	14	123 N	62 W	KNUDSEN	STANLEY	K	13147 399TH AVE	GROTON	SD	57445	5904	
13	6772	NE	4	122 N	62 W	LOCKEN	ROGER	W	39667 136TH ST	BATH	SD	57427	5922	
14	3836	NE	1	123 N	62 W	PRAY	ROBERT		12975 YORKVILLE RD	GROTON	SD	57445	5407	
15	3845	NW	2	123 N	62 W	LOCKEN	ROGER	W	39667 136TH ST	BATH	SD	57427	5922	
16	4184	NE	3	123 N	62 W	SIEBER	KAREN	R.	39714 130TH ST	BATH	SD	57427	5300	
17	4196	NW	4	123 N	62 W	BOYNTON	CHARLES	L	39752 130TH ST	BATH	SD	57427	5300	
18	4197	SE	4	123 N	62 W	SPERRY	SCOTT	A	39600 132ND ST	BATH	SD	57427	5902	
19	4199	SW	4	123 N	62 W	SPERRY	JOHN	W		WATERTOWN	SD	57201	5522	
20	4262	NE	9	123 N	62 W	BEAMAN	FLOYD	A	13143 397TH AVE	BATH	SD	57427	5911	
21	4263	NW	9	123 N	62 W	SPERRY	JOHN	W		WATERTOWN	SD	57201	5522	
22	4268	NE	10	123 N	62 W	SVARSTAD	ARNE	N	13797 392ND AVE	ABERDEEN	SD	57401	8560	
23	4269	NW	10	123 N	62 W	SVARSTAD	ARNE	N	13797 392ND AVE	ABERDEEN	SD	57401	8560	

1_mile_parcel

Ready

NUM

Supports Zoning Administration



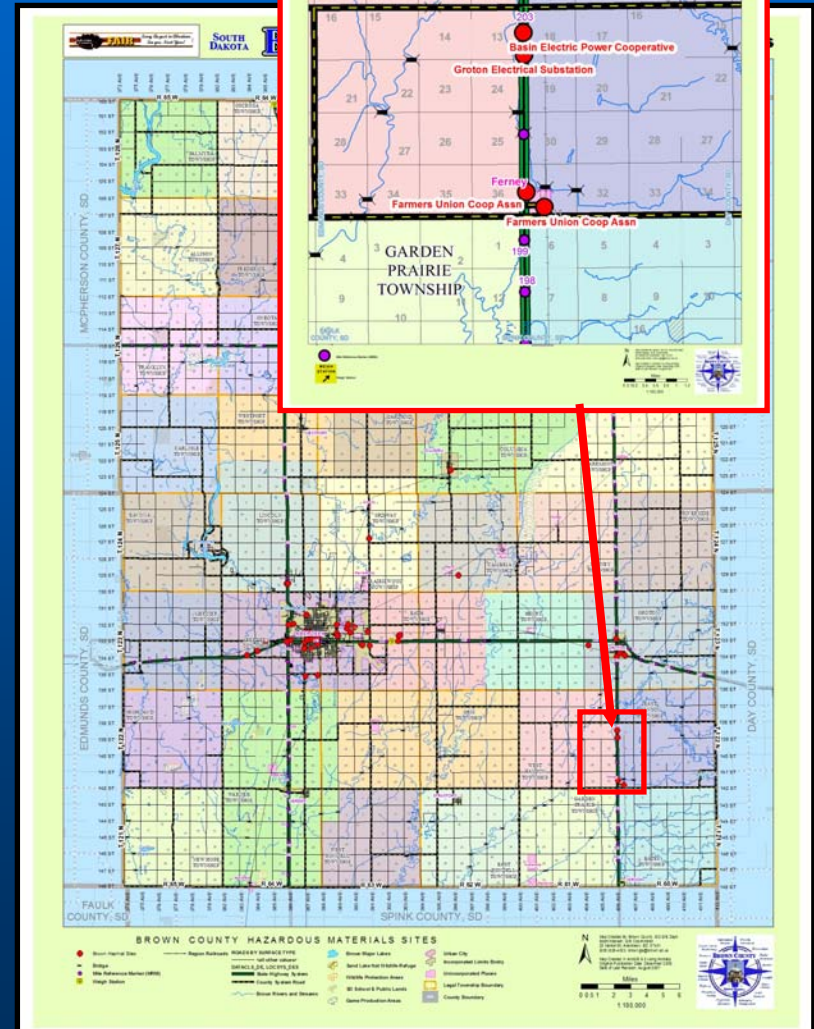
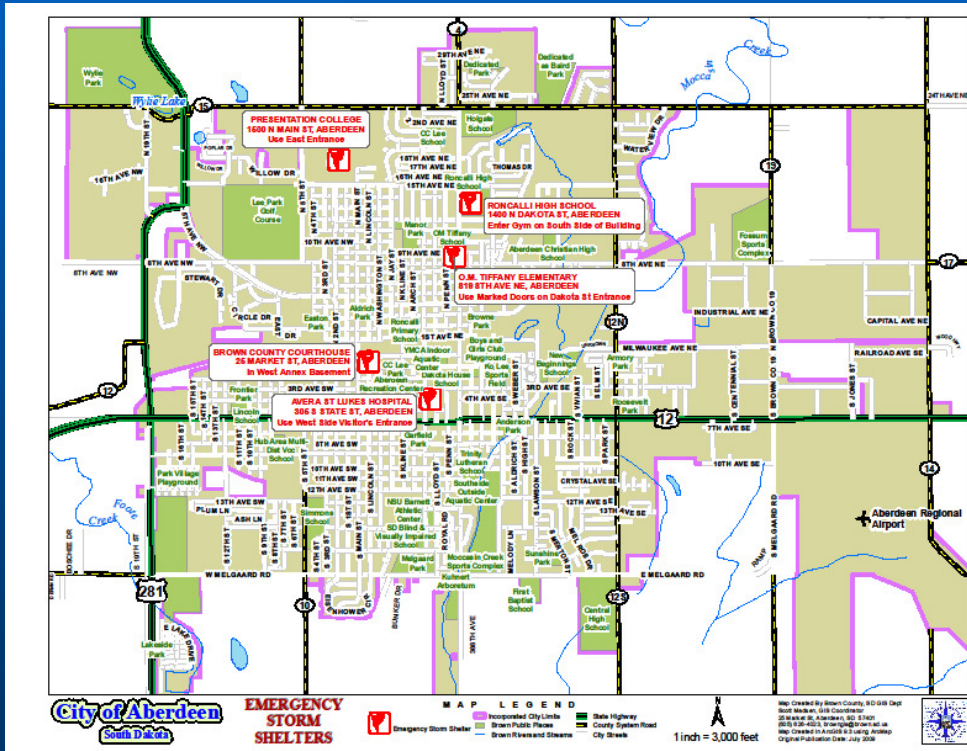
Attributes of Brown_Zoning_08_01_07

SECTION_NUMBER	TOWNSHIP	RANGE	NEW_SPLITS	nParcelID	ZONE_CODE	ZONE_NAME	Shape_Length	Shape_Area
2	125 N	65 W	NO	2648	AG-P	AGRICULTURE PRESERVATION	0.03531	0.000075
2	125 N	65 W	NO	2649	AG-P	AGRICULTURE PRESERVATION	0.03523	0.000075
2	125 N	65 W	NO	2650	AG-P	AGRICULTURE PRESERVATION	0.0352	0.000075
3	125 N	65 W	NO	2651	AG-P	AGRICULTURE PRESERVATION	0.03524	0.000075
3	125 N	65 W	NO	2652	AG-P	AGRICULTURE PRESERVATION	0.03519	0.000075
3	125 N	65 W	NO	2653	AG-P	AGRICULTURE PRESERVATION		
3	125 N	65 W	NO	2654	AG-P	AGRICULTURE PRESERVATION		
4	125 N	65 W	NO	2655	AG-P	AGRICULTURE PRESERVATION		
4	125 N	65 W	NO	2656	AG-P	AGRICULTURE PRESERVATION		
34	123 N	64 W	NO	5593	NC	NON-COUNTY JURISDICTION		
17	123 N	64 W	NO	5073	NC	NON-COUNTY JURISDICTION		
17	123 N	64 W	NO	5072	NC	NON-COUNTY JURISDICTION		
17	123 N	64 W	NO	5074	NC	NON-COUNTY JURISDICTION		
17	123 N	64 W	NO	24875	NC	NON-COUNTY JURISDICTION		
17	123 N	64 W	NO	ROAD ROW	ROW	<Null>		
18	123 N	64 W	NO	5082	AG-P	AGRICULTURE PRESERVATION		
22	123 N	64 W	NO	24433	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	24434	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	ROAD ROW	ROW	<Null>		
22	123 N	64 W	NO	ROAD ROW	ROW	<Null>		
22	123 N	64 W	NO	5184	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	5192	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	5189	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	5214	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	5213	NC	NON-COUNTY JURISDICTION		
22	123 N	64 W	NO	5215	NC	NON-COUNTY JURISDICTION		
27	123 N	64 W	NO	5421	NC	NON-COUNTY JURISDICTION		

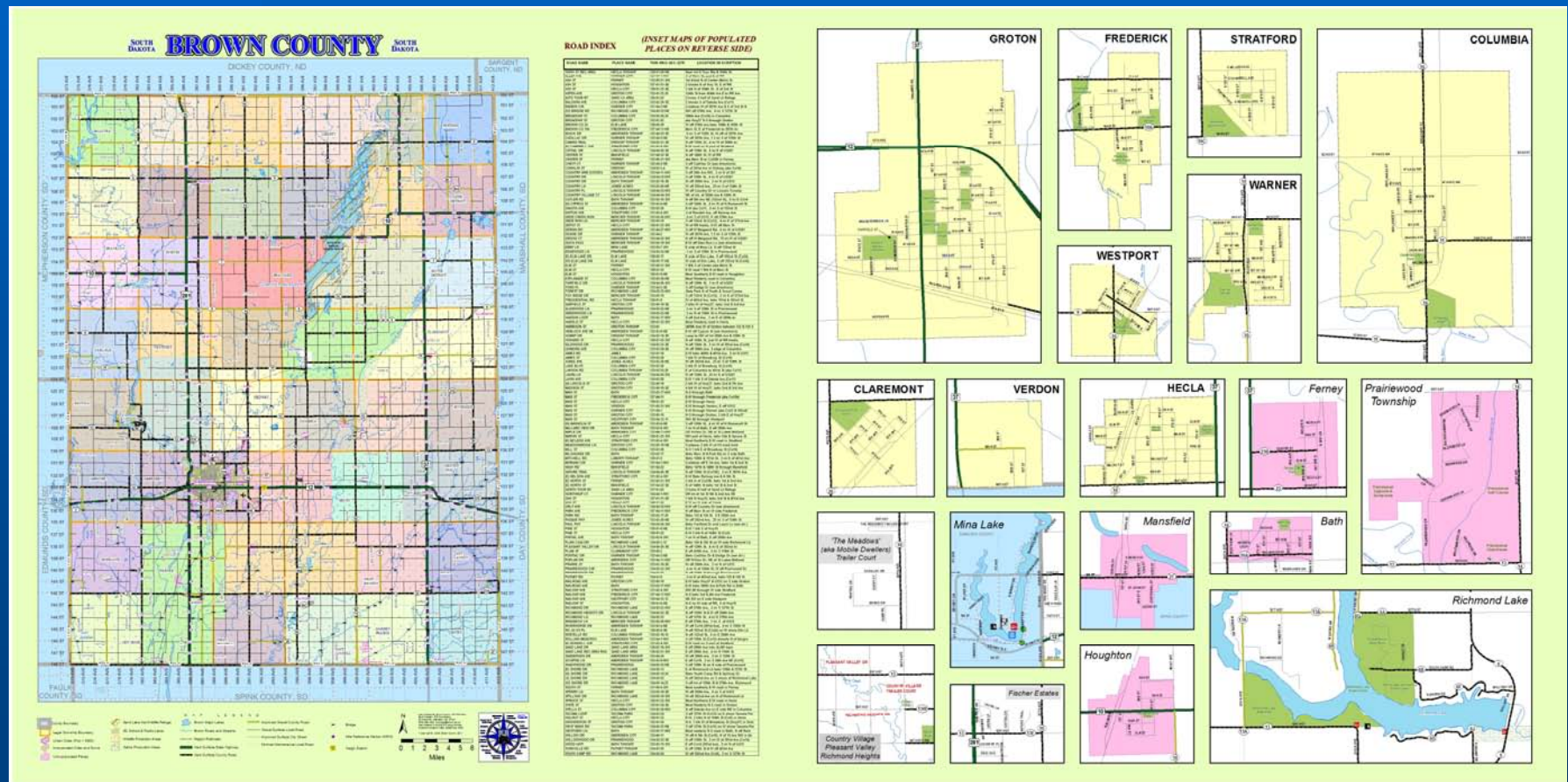
Record: 934 Show: All Selected Records (0 out of *2000 Selected) Options

ZONE_NAME	Count	Acres	SQ_MILES
AGRICULTURAL PRESERVATION	8909	1002719.9	1567
COMMERCIAL DISTRICT	3	6.9	0
CONSERVATION DISTRICT	137	12119.4	19
CONSERVATION DISTRICT REFUGE	68	19721.1	31
HEAVY INDUSTRIAL DISTRICT	15	799.9	1
HIGHWAY COMMERCIAL DISTRICT	4	24.0	0
LAKE FRONT RESIDENTIAL	369	286.0	0
LIGHT INDUSTRIAL	3	76.3	0
MINI AGRICULTURAL DISTRICT	197	3489.8	5
MUNICIPAL	4	389.7	1
NON-COUNTY JURISDICTION	13380	58428.2	91
RECREATION DISTRICT	8	294.2	0
RIGHT-OF-WAY	767	5246.0	8
RURAL-URBAN	1171	2191.2	3
WATER	55	1963.5	3

Emergency Planning

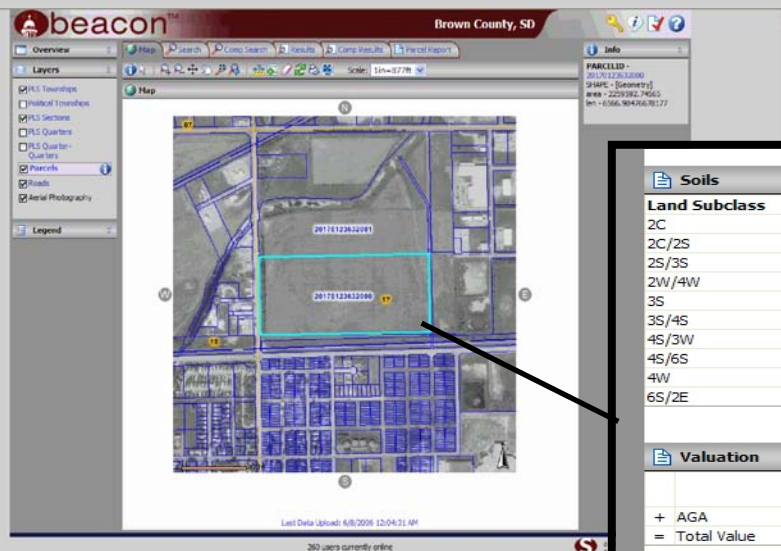


Supports E-911 Response



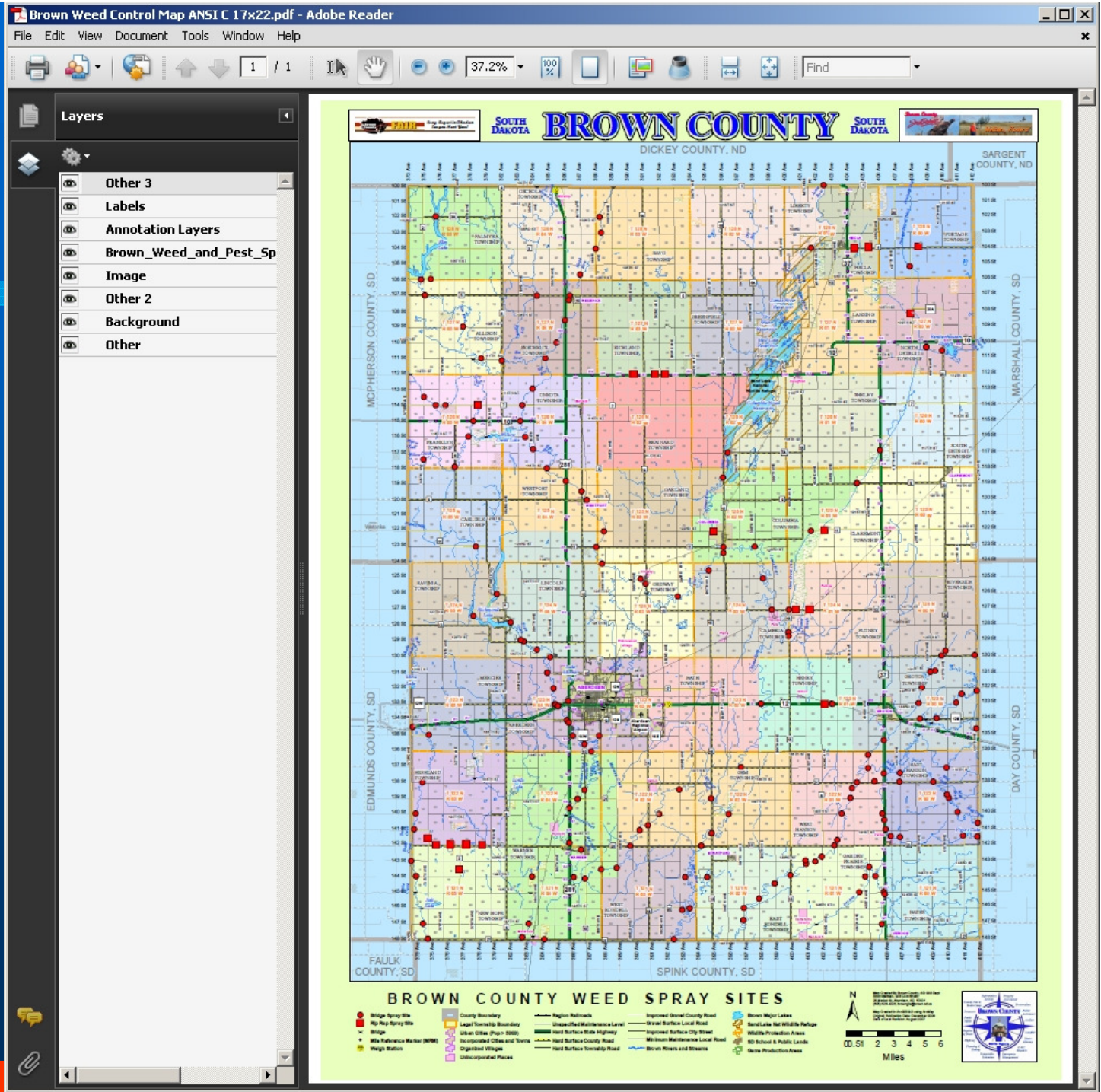
Supports Public Access to Information

WEB-BASED DATA ACCESS



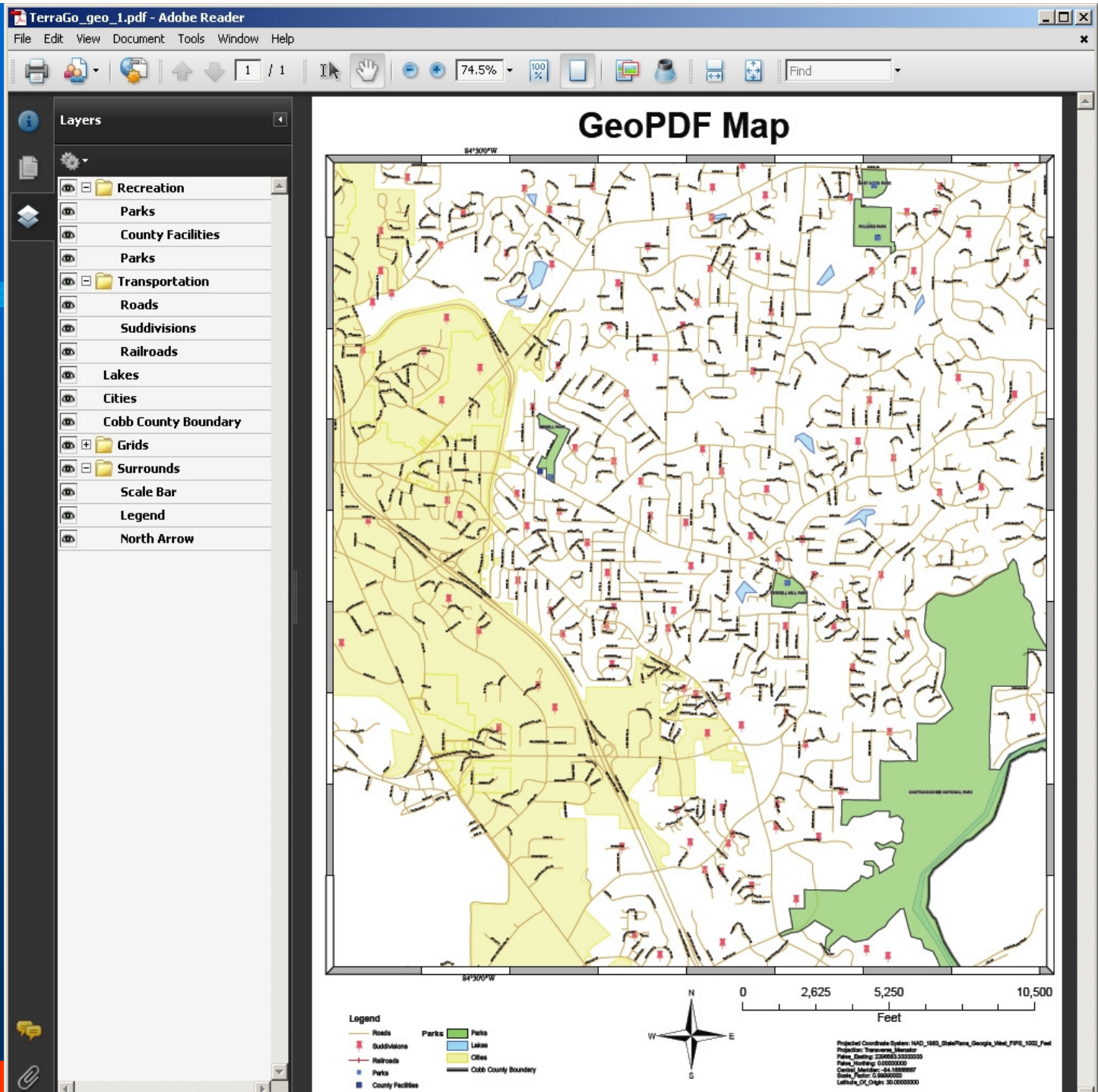
Soils					
Land Subclass	Soil Class	Acres	Slope Percent	Rating	
2C	GRA	8.00	0-2	0.8720 C	
2C/2S	GTA	8.00	0-2	0.7620 C	
2S/3S	HN	12.00	0-2	0.7940 C	
2W/4W	WT	8.00	0-1	0.7550 C	
3S	BP	4.00	0-1	0.5790 C	
3S/4S	AB	48.00	0-2	0.6040 C	
4S/3W	RY	3.00	0-2	0.4570 C	
4S/6S	NA	9.00	0-2	0.4640 C	
4W	PM	22.00	0-2	0.5730 C	
6S/2E	EYA	36.00	1-4	0.4000 C	
Total Acres:		158.00	Average Rating:	0.5854	
Valuation					
		2007 (Final Values)	2006 (Final Values)	2005 (Final Values)	2004 (Final Values)
+	AGA	\$84,677	\$84,677	\$80,645	\$76,805
=	Total Value	\$84,677	\$84,677	\$80,645	\$76,805
Tax History					
Year	Tax Due				
2006 (Payable 2007)	\$896				
2005 (Payable 2006)	\$897				
2004 (Payable 2005)	\$882				

'GEO' PDF Maps Become Inter- active



GeoPDF

GIS
Layers and
Attributes
Become
Accessible
to Non-
GIS Users





Water, Water Everywhere...

Brown County Flood of 2007

**9" Rainfall in
24 Hours**



2007 Flood



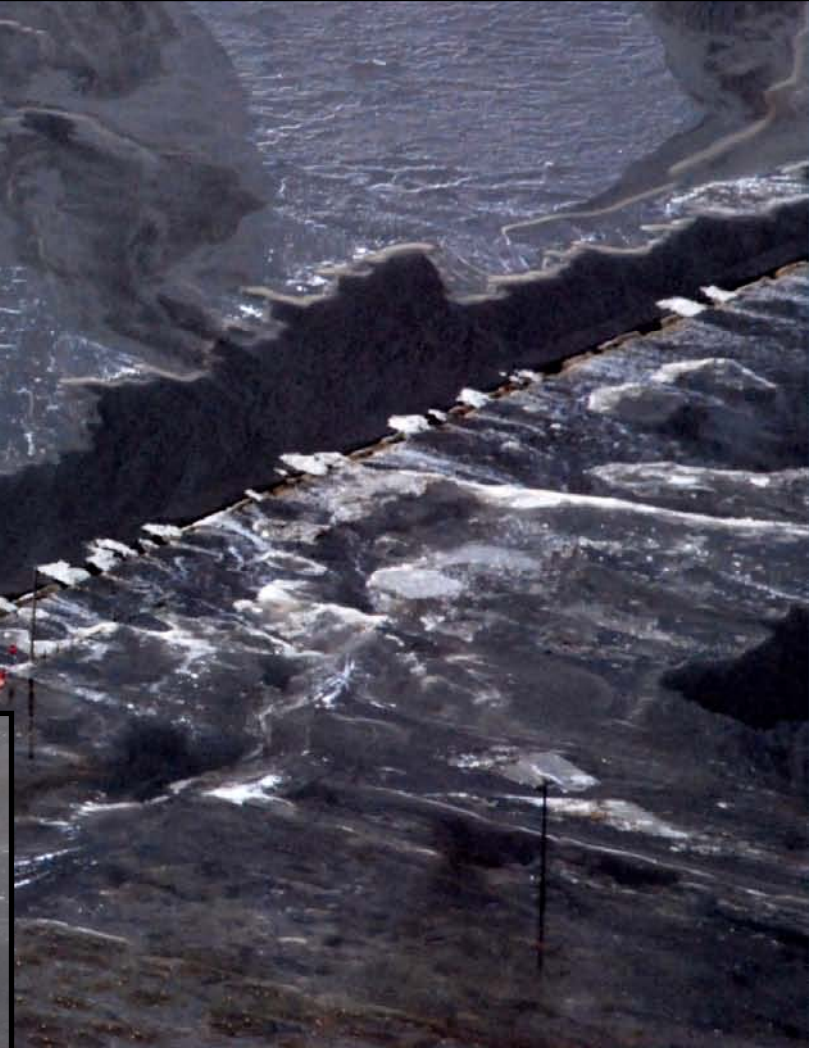
\$1M Rural

**Over \$1.7M in
Damage to
Public
Infrastructure**



\$700K Urban

Brown County Flood of 2009



Brown County Flood of 2010



2010 / 3 / 18

The Social and Economic Impact

General Impacts:

- Damage to Infrastructure, Property, Crops, Livestock & Land
- Disruption of public services including E911
- Revenue loss to agriculture-related businesses and industries
- Negative impact of economic multipliers – ‘trickle-down’ effect



Historically Good Roads
Begin to Break Up

Additional Load Limits and
Restrictions Applied



**Some Roads
Fall Apart**



2010/ 3/17

**Others
Disappear**



**Desperation
Sinks in for
Suppliers...**



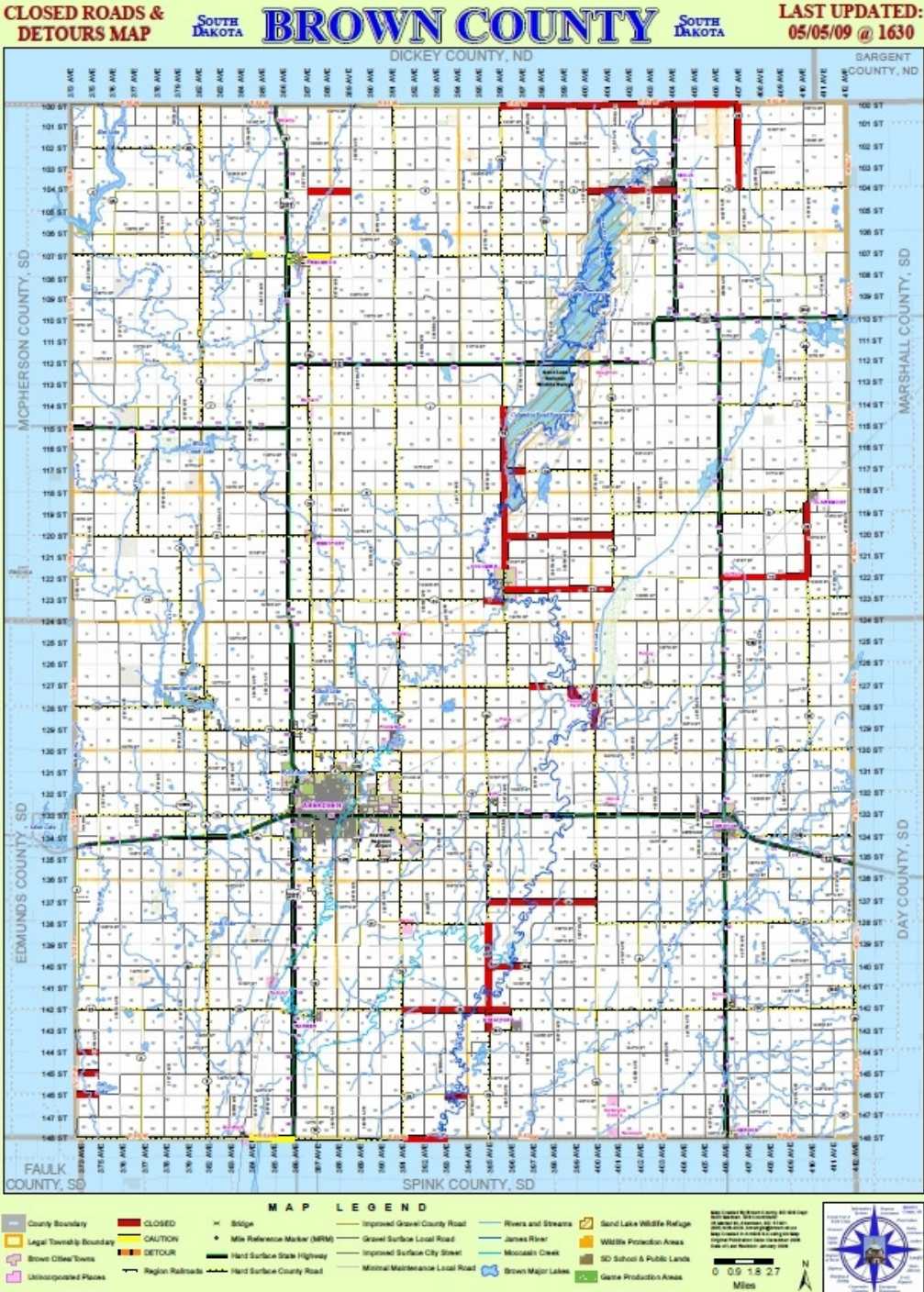
**...and for
Producers**





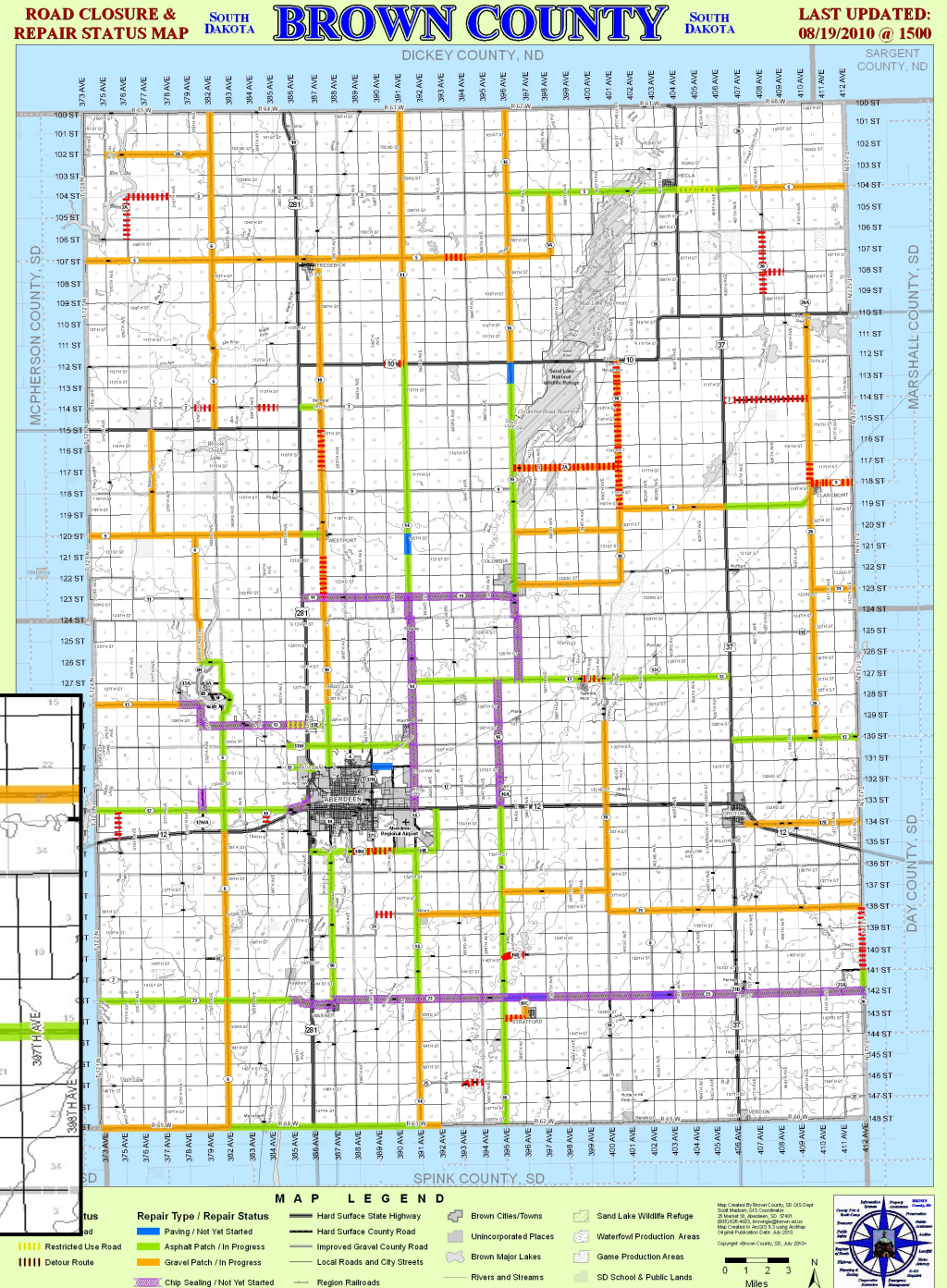
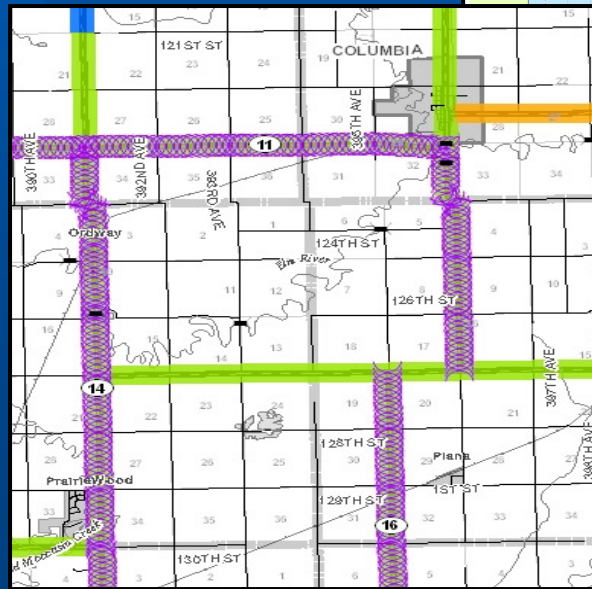
E-911 Services in
Flood-Inundated
Areas Become
Severely Limited

Road Closure Maps
Allow Responders
and Local Residents
to Plan Accordingly



Road Repairs Begin

Online Status Maps Save
Phone Calls to the
Highway Department and
County Commissioners



Ice and Log Jams Restrict Flow



???



11/13/2009 1:13:05 PM

80



N 45° 25.040' W 098° 30.948'

1266 ft

194°

GeoMapping



03/30/2009 5:56:19 PM

31

Infrastructure at Risk



N 45° 26.624' W 098° 14.015'

1280 ft

WGS 84



04/02/2009 10:18:46 AM

68

N 45° 19.653' W 098° 08.347'

1296 ft

WGS 84

