An Assessment of Parcel Data in the United States
2005 Survey Results

May 2006

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Overview: A cadastral survey in all fifty states and the District of Columbia was conducted from November 2005 through January 2006. This is the second national survey of the status of parcel data by the FGDC Cadastral Data Subcommittee. The purpose of the survey was to assess the status of parcel conversion in the United States and identify trends using the 2003 survey[1] as a base line. The 2005 survey was implemented as a web enabled database that contrasts with the interview format that was used for the 2003 survey. This caused some discrepancies when comparing the data, but the on-line database allows the survey to be updated as better information is gathered over time. Throughout the text numbers in *italics and enclosed in parenthesis (##)* indicate values taken from the 2003 survey.

State Management and Collection: All states, with the exception of Alaska, distribute the responsibility of collecting parcel data to local governments with varying degrees of oversight and support provided by a state agency. Twelve states indicated that they centrally manage parcel data and eight states indicated that the geometry is centrally managed. This contrasts with the 2003 inventory which found twenty-two states stating that they compiled parcel data at the state level. The author believes that the inconsistency is due to a misunderstanding of the question. Conversations with a sample of survey respondents found that they believed that question applied only to spatially enabled data. The 2003 survey used an interview format and allowed clarification of this question; this was not the case in the 2005 survey. It is the experience of the author that many states require local governments to submit all or a portion of their CAMA[2] data to a state auditing agency that is responsible for ensuring equity of assessments. Even though the data may not be a parcel GIS layer, central reporting does provide a state infrastructure for the transfer of a subset of the county's parcel data to an area integrator.

Distribution of Responsibility: The number of entities in a state that are responsible for collecting parcel data varies from under 10 in Delaware, Hawaii and Montana to over 250 in Texas (253), Massachusetts (351), Vermont (255), Maine (500), and New Jersey (566). In most states the responsibility rests at the county level with a total of 2,925 counties acting as the primary responsible entity for collecting and managing parcel data. There are a few states that have taken on the responsibility of building the parcel geometry, Montana being a prime example where the state is managing the parcel boundaries for 48 of 56 counties. There appears to be an advantage to this centralization for areas where the population density is low and local governments do not have the resources to develop the expertise to spatially enable the CAMA database. On the average there are 61 counties per state that are responsible for managing parcel data with Texas having the most at 254 counties. Yet the 11 sates that have delegated responsibility to the municipal or township level accounted for an additional 2,284 entities including Connecticut (169),

[1] David Stage and Nancy von Meyer, *An Assessment of Parcel Data in the United States*, FGDC Cadastral Data Subcommittee, March 2003, Internet, http://www.nationalcad.org/data/documents/Assessment-of-Parcel-Data-in-50-States.pdf

[2] CAMA – Computer Assisted Mass Appraisal software systems. These systems automate the appraisal of residential homes, manufactured houses, commercial structures, land systems, and sales analysis. These databases were developed in the 1970's and were not spatially enabled.

Maine (500), Maryland (163), Massachusetts (351), New Hampshire (234), New Jersey (566), Rhode Island (37) and Vermont (255) accounting for 2,238. The total number of states, counties, municipalities and township that are responsible for collecting and managing parcel information is 5,210.

Parcels and Density: The total number of privately owned parcels in all 50 states and the District of Columbia is approximately 144.3 million *(141.3)*; the average number of persons per parcel is 2.0 *(1.99)*, ranging from 0.3 in Wyoming to 3.5 in New York. Another perspective on density can be acquired by looking at the parcels per square mile, the average for all fifty states being eighty (80). New Jersey and Rhode Island reported the highest parcel density with each having 373 parcels per square mile, and Alaska the least at 1.7 parcels per square mile followed closely by South Dakota at 4 parcels per square mile. Five states were at the lower end of the range, having densities of less than ten parcels per square mile: Alaska (1.7), South Dakota (4), North Dakota (5), Montana (7) and Nevada (9). Four states were on the high end, having densities greater than 250 parcels per square mile: Connecticut (260), Massachusetts (281), Rhode Island (373) and New Jersey (373). The District of Columbia, which is the one representation of a 100% urban environment, reported 2,464 parcels per square mile.

Parcels Converted: The number parcels reported is an approximation. Some states were able to provide numbers based on actual counts while others were calculations. States that did not provide numbers were based on the average number of persons per parcel and the state population using the national average of 2 persons per parcel. It was estimated that for the entire country 68% of the parcels have been spatially enabled ranging from 10 to 100 percent. Twenty-five *(13)* states reported over 70% of their parcels in a GIS format. It is probably safe to assume that communities with populations over 150,000 have some type of GIS for their parcel data and that an active conversion effort is underway, if not complete.

Standards: Survey respondents were asked what relevant standards they had. Twelve (12) states indicated that they had a publication standard, sixteen (16) had a parcel boundary file standard and nine states indicated that they have some other standards relevant to parcel data. This seems to indicate that even though standards are being applied to parcel data acquisition, with the exception of states that have programs, most of the initiative for standards is taking place at the local level.

Digital Orthophotography: Large-scale Orthophotography, approximately 1 ft resolution or better, is a requirement for the conversion and effective use of digital parcel data in areas with 20 or more parcels per square mile. It is used primarily for quality assurance and verification allowing “desktop” site visits. The small-scale orthoimagery, 1-meter Digital Ortho Quarter Quads (DOQQ), which were designed for mapping and planning purposes, are used in rural areas if larger-scale imagery is not available or if the terrain relief is so great as to exclude the use of large-scale orthoimagery. The DOQQ’s are conveniently pervasive throughout most of the United States as a result of the US Geological Survey’s (USGS) cooperative assistance program. Twenty-six *(down from*

34) states indicated that their state has a small-scale, usually one meter, orthoimagery program and that seventeen states *(up from 9)* have large-scale orthoimagery programs which are completely replacing their small-scale imagery. This confirms the trend identified in the 2003 survey that found states moving away from small-scale imagery.

Trends: Comparing data from the 2005 survey with the 2003 survey it is possible to make some comparisons and to identify some trends.

- The number of parcels increased by 2% from 141.3 to 144.2 million.
- Number of parcels converted increased from 61% to 68%.
- The persons per parcel remained about the same (1.99 persons/parcel to 2.0 persons/parcel)
- Number of states with large-scale orthoimagery program increased from eight (8) to sixteen (16) while the small-scale orthoimagery programs decreased from thirty (30) to twenty-two (22).
- Eighteen states indicated that they had some type of parcel management program to assists local governments.

There appears to be an increased emphasis by states to support the efforts of local governments by acquiring large-scale imagery and by the creation of programs to assists their modernization efforts. The National States Geographic Information Council Digital Imagery for the Nation[3] initiative demonstrates the widespread need for this data orthoimagery.

State Parcel Management Programs: The FGDC Cadastral Data Subcommittee has found that states that have parcel management programs have been able to exceed the national average of conversion. These programs support the use of standards, cooperative ventures and land records modernization in communities that do not have the resources to implement a conversion program. States were asked for the first time in the 2005 survey if they had some form of a parcel conversion assistance program for local governments, seventeen states and the District of Columbia said that they had some form of program and eleven states indicated that their programs were substantial efforts that are targeted at achieving complete statewide conversion of parcel data to digital maps. Another study of seven states with parcel conversion programs[4] found that the average of conversion for states with well established programs with these programs was at 86% or 18% percentage points above the national average of 68%.

Where are the unconverted parcels? The holes in the parcel data fabric will be unknown until a nationwide county survey can be complete. Never-the-less it is worth

[3] *Digital Imagery for the Nation*, National States Geographic Information Council, Internet, May 2006, **http://www.nsgic.org**

[4] David Stage and Nancy von Meyer, *An Assessment of Best Practices off Seven Parcel Management Programs*, FGDC Cadastral Data Subcommittee, February 2006, Internet, http://www.nationalcad.org/data/documents/3StateParcelMgtProgFinal.pdf

estimating this number because the identification of potential gaps is important for the development of an intelligent strategy for parcel conversion. The number of entities responsible for collecting and managing parcel data is daunting with 2,926 counties and 2,284 municipalities or townships. Based on the FGDC Cadastral Data Subcommittee's experience from analyzing and compiling parcel data from counties, it was assumed that the smaller the population of the county, the least likely they would have spatially enabled their parcel databases. Utilizing this assumption the following criteria was used to estimate the number of counties that remain to be modernized.

- Counties with populations of 150,000 or larger were presumed to have GIS parcel data layer.
- States with above average conversion rates (80% and above) were sorted by county according to population size. The population of the counties was then summed, beginning with the smallest counties, until the sum of the population was equivalent to the proportion of the population not converted. The smaller counties were included in the count while the larger ones were eliminated.
- The estimated number of parcels to be converted was based on the national average of two persons per parcel.

Values were calculated using both 150,000 and 100,000 as cut off points.

Table 1. A summary table of the identification of counties that will need assistance to spatially enable their parcel data[1].

	100,000 Cut Off	**150,000 Cut Off**
Total Number of counties	3140	3140
Number of counties matching criteria	2257	2389
Number of counties greater than cut off	883	751
Total Pop in challenged Counties	56,835,187	73,070,812
Total Population	272,928,696	272,928,696
Percentage of Total Population	20.8%	26.8%
Percentage of counties	72%	76%
Estimated Parcels in Challenged Communities at 2 persons/parcel	28,417,594	36,535,406
Estimated Cost @ $6/parcel[5]	170,505,561	219,212,436

After the criteria was applied the number of counties remaining still represented over 70% of the counties in United States verifying the adage that 80% of the people live on 20% of the land. Specifically 23% of the counties (711) have populations of less than 10,000 and 51% (1610) of the counties have populations less than 25,000. This compares

[5] The estimate is for conversion costs only. Additional resources are needed for nationwide to support data standardization, linking the digital maps to attribute tables and the publication of existing data.

with 24% (751) of the counties that have populations of 150,000 or greater. Figure shows the distribution of counties by population.

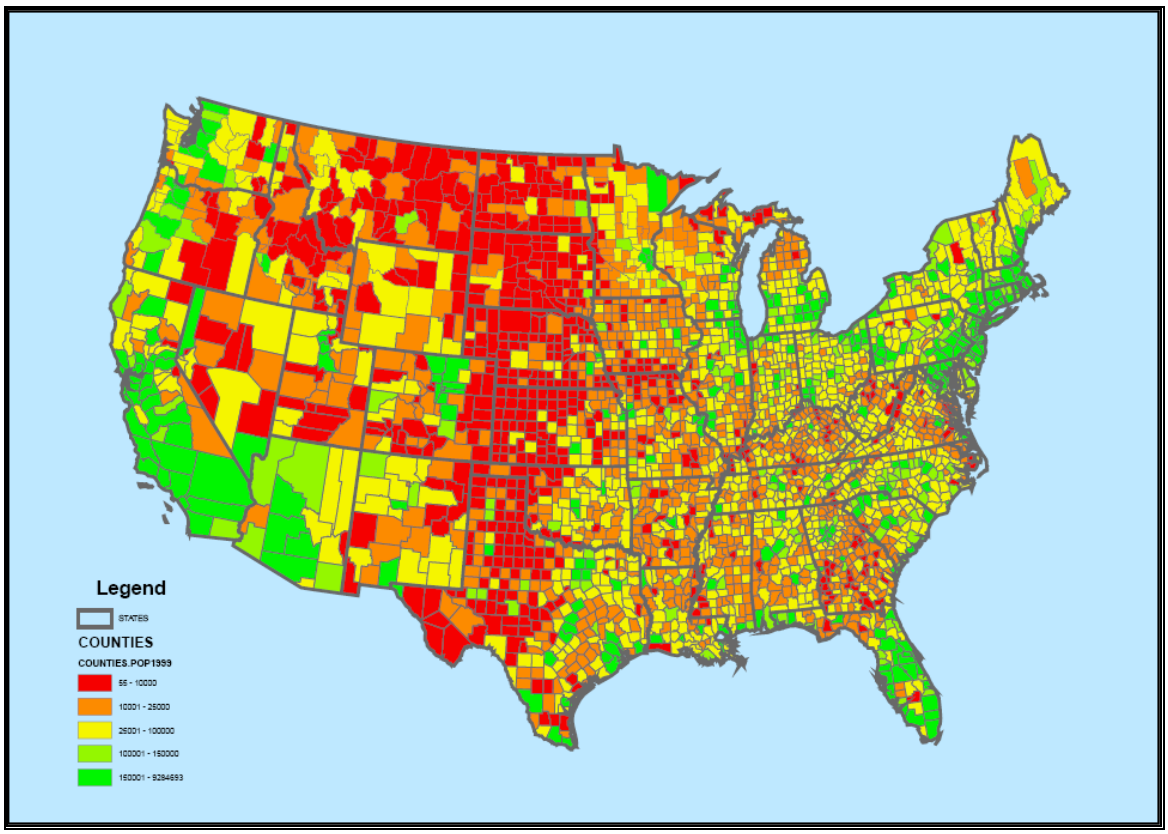


Figure 1 Population distribution by county for the continental United States. Alaska and Hawaii are included in the appendix.

Table 2. Legend for figure 1 with attribution.

	Population Range	Number of Counties	Area	Total Population
	55 – 10,000	710	1,189,223	3,992,495
	10,001 – 25,000	899	833,722	15,002,242
	25,001 – 100,000	1,014	989,984	49,780,215
	100,001 – 150,000	170	196,935	20,888,970
	150,001 – 9,284,693	347	37,6631	183,264,774

Although there was not a one to one correspondence in the questions, a 2002 study *How Do Rural Western Counties Use GIS* it supports the hypothesis of the availability of GIS

with slightly under half of the 292 counties surveyed indicating that they did not have GIS. Rural was defined as counties with a population of less than 50,000[6].

Summary: The conversion of parcel data into a format that can be used in a GIS continues to grow. States and counties are moving their image acquisition efforts from small-scale to large-scale imagery with the specific objective of meeting both the needs of local and regional governments. State parcel conversion programs are becoming more prevalent. Although the total number of parcels converted is approaching 70%, it seems likely that most of the conversion to GIS is taking place in the more urban areas. An analysis of counties based on population has estimated that 76% (2,389) of the counties are not likely to have the expertise and resources to spatially enable their parcel data. This makes it imperative that if a national parcel data layer is to be achieved then it will be necessary to provided guidance and assistance to the more technically challenged communities. The states will necessarily play a key role in this effort through the development of standards, providing training and in some instances taking on the responsibility of developing and maintaining parcel boundary files as is happening in Montana, Tennessee and Alabama.

[6] Theresa Selfa and Tyrell Bailey, *How Do Rural Western Counties Use GIS,* Western Rural Development Center, July 2003, Internet, May 2006**,** http://www.geo-one-stop.gov/WhatsNew/GISFull.pdf

Appendix A

Status of the States

Status of the States

							Population	Area in Square Miles	Number of Parcels	% Parcels Converted in 2005	% Parcels Conveted in 2003	Change % over time*	Growth Rate	Density (parcels per sq. mi.)	Persons per Parcel	County	Cities
Alabama	Yes	Yes	No	No	No	No	4,500,000	50,750	2,600,000	85%	65%	20%	0.10	51	1.7	67	
Alaska	Yes	Yes	No	No	No	Yes	634,892	571,591	1,000,000	85%	85%	0%	0.14	1.7	0.6	15	2
Arizona	No	Yes	No	Yes	No	Yes	5,130,632	113,635	2,538,250	72%	72%	0%	0.40	22	2.0	15	
Arkansas	Yes	Yes	Yes	Yes	Yes	Yes	2,673,400	52,068	2,170,891	18%	0%	18%	0.14	42	1.2	75	
California	No	Yes	No	No	No	No	33,871,648	155,959	12,000,000	80%	74%	7%	0.14	77	2.8	58	
Colorado	No	Yes	No	No	No	Yes	4,301,261	103,718	2,200,000	UK	UK	UK	0.31	21	2.0	64	
Connecticut	No	Yes	No	No	No	No	3,405,565	5,009	1,300,000	60%	60%	0%	0.03	260	2.6	0	169
Delaware	No	Yes	No	No	Yes	No	843,524	1,954	393,000	100%	UK	UK	0.18	201	2.1	3	
District of Columbia	Yes	Yes	Yes	No	Yes	No	572,059	69	170,000	90%	100%	-10%	-0.06	2,464	3.4	1	
Florida	Yes	Yes	Yes	Yes	No	No	15,982,378	53,927	9,035,000	95%	82%	13%	0.24	168	1.8	67	
Georgia	No	Yes	Yes	No	No	Yes	8,383,000	57,906	3,300,000	70%	30%	40%	0.26	57	2.5	159	
Hawaii	No	Yes	No	No	No	Yes	1,211,537	6,423	358,447	100%	100%	0%	0.09	56	3.4	4	
Idaho	No	Yes	No	No	No	Yes	1,293,953	82,747	1,000,000	80%	60%	20%	0.29	12	1.3	44	
Illinois	No	No	No	No	No	No	12,419,293	55,584	6,500,000	UK	UK	UK	0.09	117	1.9	102	
Indiana	No	Yes	No	No	No	No	6,800,000	35,867	3,500,000	50%	50%	0%	0.10	98	1.9	92	
Iowa	No	Yes	No	No	No	No	2,926,324	55,869	2,180,000	50%	50%	0%	0.05	39	1.3	99	
Kansas	No	Yes	Yes	No	No	Yes	2,688,418	82,000	1,552,500	80%	75%	5%	0.01	19	1.7	105	
Kentucky	Yes	Yes	No	No	No	Yes	4,041,769	40,409	2,200,000	95%	70%	25%	0.10	54	1.8	120	
Louisiana	No	Yes	No	No	No	No	4,465,000	43,562	2,100,000	UK	UK	UK	0.06	48	2.1	70	
Maine	No	Yes	No	Yes	Yes	Yes	1,274,923	30,862	720,000	60%	UK	UK	0.04	23	1.8	0	500
Maryland	No	Yes	Yes	No	Yes	Yes	5,296,486	9,774	2,000,000	60%	60%	0%	0.11	205	2.6	24	163
Massachusetts	Yes	Yes	Yes	No	No	Yes	6,349,097	7,840	2,200,000	70%	50%	20%	0.06	281	2.9	0	351
Michigan	No	Yes	No	No	No	No	9,938,444	56,804	5,000,000	50%	50%	0%	0.07	88	2.0	83	
Minnesota	No	Yes	Yes	No	No	No	5,100,958	86,939	2,435,165	72%	50%	22%	0.12	28	2.1	87	
Mississippi	No	No	No	No	No	No	2,844,658	46,907	1,762,402	20%	UK	Uk	0.11	38	1.6	82	
Missouri	No	Yes	No	No	No	Yes	5,595,211	69,686	3,082,289	65%	58%	7%	9.34	44	1.8	114	1
Montana	Yes	Yes	Yes	Yes	Yes	Yes	902,195	145,552	1,000,000	99%	90%	9%	0.13	7	0.9	8	
Nebraska	No	Yes	No	No	No	No	1,739,291	77,358	1,000,000	40%	UK	UK	0.08	13	1.7	84	
Nevada	No	Yes	No	No	No	No	2,334,771	109,826	1,041,784	87%	UK	UK	0.66	9	2.2	17	6
New Hampshire	No	Yes	No	No	No	No	1,235,786	9,282	650,000	10%	UK	UK	0.11	70	1.9	0	234
New Jersey	No	Yes	No	No	No	No	8,717,925	7,500	2,800,000	75%	UK	UK	8.80	373	3.1	0	566
New Mexico	No	Yes	No	No	Yes	Yes	1,900,000	121,356	1,800,000	75%	30%	45%	16.00	15	1.1	33	

Status of the States

State	Parcel Conversion Program	Responded to Survey	CAMA Centrally Manage	Geometry Centrally Managed	Publication Format	State Lands Centrally Managed	Population	Area in Square Miles	Number of Parcels	% Parcels Converted in 2005	% Parcels Conveted in 2003	Change % over time*	Growth Rate	Density (parcels per sq. mi.)	Persons per Parcel	County	Cities
New York	No	Yes	No	No	No	No	18,976,457	47,214	5,400,000	96%	50%	46%	0.06	114	3.5	61	
North Carolina	Yes	Yes	No	Yes	Yes	Yes	8,049,313	48,000	4,600,000	95%	95%	0%	0.21	96	1.7	100	
North Dakota	No	Yes	No	No	No	Yes	642,200	69,976	331,031	UK	UK	UK	0.01	5	1.9		
Ohio	No	Yes	No	No	No	Yes	11,459,011	41,276	5,807,500	70%	60%	10%	0.05	141	2.0	80	
Oklahoma	No	Yes	No	No	Yes	No	3,407,571	68,677	2,117,551	90%	95%	-5%	0.03	31	1.6	77	
Oregon	No	Yes	No	Yes	Yes	Yes	3,421,399	95,997	1,616,119	100%	55%	45%	0.20	17	2.1	36	
Pennsylvania	No	No	No	No	No	No	12,300,000	44,000	5,500,000	UK	UK	UK	0.03	125	2.2	67	
Rhode Island	No	Yes	Yes	No	No	Yes	1,076,189	1,045	390,000	90%	Uk	UK	0.00	373	2.8		37
South Carolina	No	No	No	No	No	No	4,012,012	32,007	2,800,000	10%	10%	0%	0.15	87	1.4	46	
South Dakota	No	Yes	No	No	No	No	754,844	75,885	329,346	20%	20%	0%	0.09	4	2.3	66	
Tennessee	Yes	Yes	Yes	Yes	No	No	5,700,000	41,219	3,600,000	75%	39%	36%	0.14	87	1.6	95	
Texas	No	Yes	No	No	No	Yes	20,851,820	261,797	16,000,000	UK	UK	UK	0.23	61	1.3	254	
Utah	No	Yes	No	No	No	Yes	2,233,169	84,904	980,000	30%	30%	0%	0.30	12	2.3	29	
Vermont	No	Yes	No	No	No	No	625,000	9,250	314,500	70%	UK	UK	0.08	34	2.0		255
Virginia	No	No	No	No	No	No	7,100,000	43,000	3,648,719	UK	UK	UK	0.14	85	1.9	134	
Washington	No	Yes	No	No	No	Yes	5,894,121	66,544	2,779,861	75%	75%	0%	21.10	42	2.1	39	
West Virginia	No	No	No	No	No	No	1,808,344	24,231	1,400,000	10%	10%	0%	0.01	58	1.3	55	
Wisconsin	Yes	Yes	No	No	No	No	5,400,000	54,310	3,500,000	83%	78%	5%	0.10	64	1.5	72	
Wyoming	No	Yes	Yes	No	Yes	No	493,782	97,100	1,559,580	100%	UK	UK	8.90	16	0.3	23	
Total	**11**	**45**	**12**	**8**	**11**	**23**	**283,579,630**	**3,555,165**	**144,263,935**							**2926**	**2284**
Average							**5,560,385**	**69,709**	**2,828,705**	**68%**	**58%**	**10%**	**1.37**	**80**	**2.0**	**61.0**	
Median							**4,012,012**	**53,927**	**2,170,891**	**72%**	**60%**	**12%**	**0.11**	**53**	**1.9**	**65.0**	
Max									**< .5**	**44**	**33**			**2,464**	**3.5**		
Max wo DC									**> .5**	**36**	**26**			**373**	**3.5**		
Min									**> .75**	**23**	10			**2**	**0.3**		
Min wo AK									**> .9**	**16**	7			**4.3**	**0.3**		

* Only states that responded in both inventories.

Appendix B

Standards and Orthoimagery

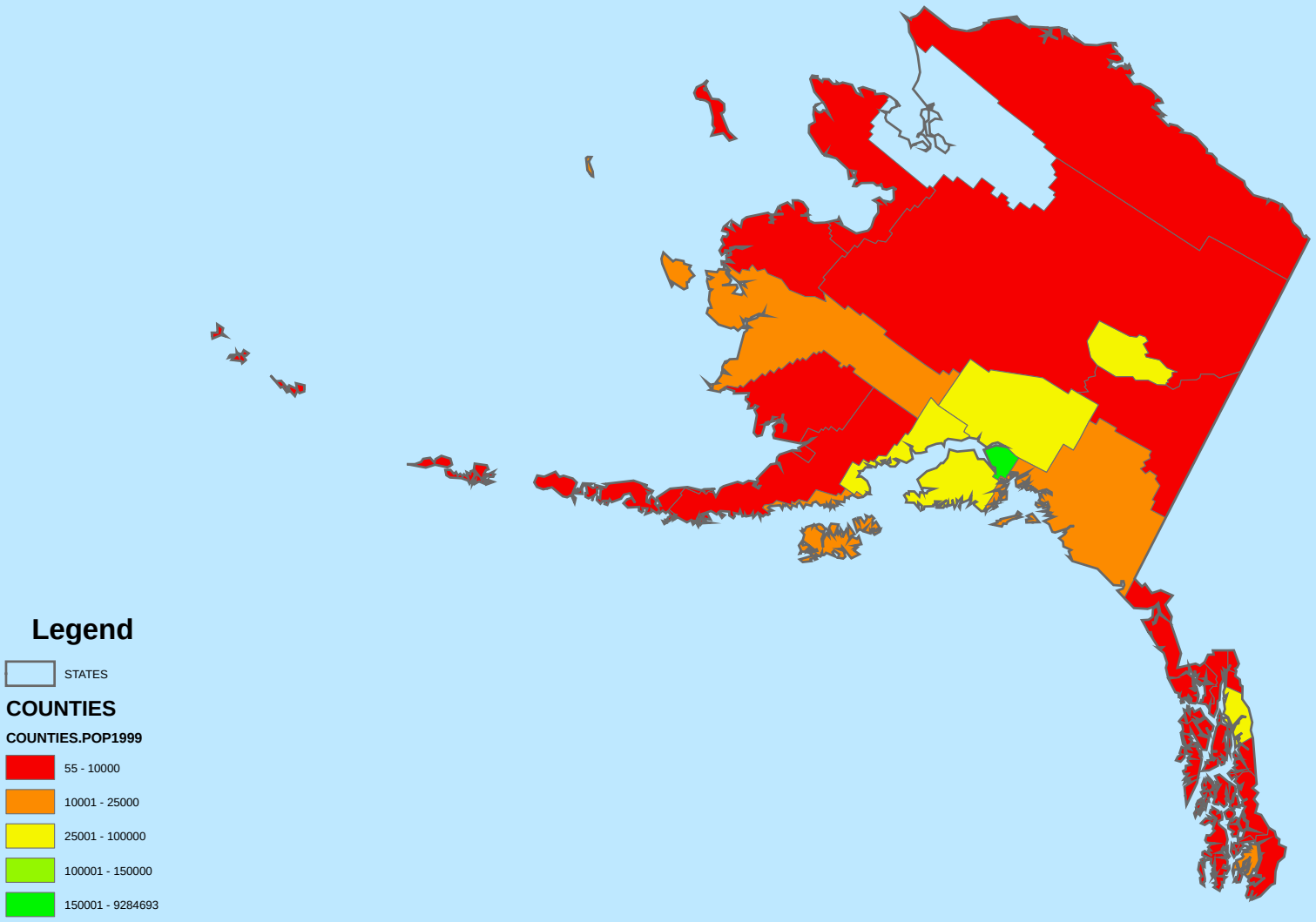
Standards and Orthoimagery

State	Responded to Survey	Publish Parcel Data	Parcel Boundary Std	Other Standard	Small-Scale Ortho 2003	Small-Scale Ortho 2006	Large-Scale Ortho 2003	Large-Scale Ortho 2006	Density (parcels per sq	Population
Alabama	Yes	No	No	No	No	No	Ad Hoc	Ad Hoc	51	4,500,000
Alaska	Yes	No	No	Yes	NA	Yes	Local	Local	1.7	634,892
Arizona	Yes	No	No	No	Yes	No	No	Yes	22	5,130,632
Arkansas	Yes	Yes	Yes	No	Ad Hoc	In	No	Local	42	2,673,400
California	Yes	No	No	No	Yes	No	No	No	77	33,871,648
Colorado	Yes	No	No	No	No	No	No	No	21	4,301,261
Connecticut	Yes	No	No	No	Ad Hoc	Ad Hoc	No	No	260	3,405,565
Delaware	Yes	Yes	No	No	Yes	No	Yes	Yes	201	843,524
District of	Yes	Yes	No	No	NA	Yes	Yes	Yes	2,464	572,059
Florida	Yes	No	Yes	Yes	Yes	No	Yes	Yes	168	15,982,378
Georgia	Yes	No	No	No	Yes	No	No	Yes	57	8,383,000
Hawaii	Yes	Yes	No	No	Yes	Yes	No	No	56	1,211,537
Idaho	Yes	No	Yes	Yes	Yes	Yes	Ad Hoc	Ad Hoc	12	1,293,953
Illinois	No	No	No	No	Yes	Yes	No	No	117	12,419,293
Indiana	Yes	No	Yes	No	Ad Hoc	Other	No	Yes	98	6,800,000
Iowa	Yes	No	No	No	Yes	Yes	No	No	39	2,926,324
Kansas	Yes	No	Yes	Yes	Yes	Yes	Local	Local	19	2,688,418
Kentucky	Yes	Yes	No	No	Yes	Yes	No	Yes	54	4,041,769
Louisiana	Yes	No	No	No	Yes	No	No	No	48	4,465,000
Maine	Yes	No	Yes	No	Yes	Yes	Yes	Yes	23	1,274,923
Maryland	Yes	Yes	No	No	Yes	Yes	In	Progress	205	5,296,486
Massachusetts	Yes	Yes	Yes	No	Yes	Yes	No	Yes	281	6,349,097
Michigan	Yes	No	No	No	Yes	Yes	Somew	t	88	9,938,444
Minnesota	Yes	No	No	Yes	No	Somew	Local	Local	28	5,100,958
Mississippi	No	No	No	No	No	No	No	No	38	2,844,658
Missouri	Yes	No	No	No	Yes	Yes	No	No	44	5,595,211
Montana	Yes	Yes	Yes	No	Yes	Yes	Local	Local	7	902,195
Nebraska	Yes	No	No	No	Yes	Yes	Ad Hoc	Ad Hoc	13	1,739,291
Nevada	Yes	No	No	No	Yes	Yes	Ad Hoc	No	9	2,334,771
New Hampshire	Yes	No	No	No	No	No	No	Yes	70	1,235,786
New Jersey	Yes	No	No	No	Yes	No	Yes	Yes	373	8,717,925
New Mexico	Yes	No	No	No	Yes	In	Local	t	15	1,900,000
New York	Yes	No	Yes	No	No	No	Yes	Yes	114	18,976,457
North Carolina	Yes	Yes	Yes	Yes	Yes	No	Local	t	96	8,049,313
North Dakota	Yes	No	No	No	In Progr	No	Local	No	5	642,200
Ohio	Yes	Yes	No	Yes	Yes	Yes	Local	Local	141	11,459,011
Oklahoma	Yes	No	Yes	No	Yes	No	No	No	31	3,407,571
Oregon	Yes	Yes	Yes	No	Yes	Yes	No	No	17	3,421,399
Pennsylvania	No	No	No	No	Yes	Yes	Ad Hoc	Ad Hoc	125	12,300,000
Rhode Island	Yes	No	Yes	Yes	Ad Hoc	Ad Hoc	Somew	t	373	1,076,189
South Carolina	No	No	No	No	No	No	No	No	87	4,012,012
South Dakota	Yes	No	No	No	Yes	No	No	No	4	754,844
Tennessee	Yes	No	Yes	No	No	No	Yes	Yes	87	5,700,000
Texas	Yes	No	No	No	Yes	Yes	Somew	Ad Hoc	61	20,851,820
Utah	Yes	No	Yes	No	Yes	Yes	No	Yes	12	2,233,169
Vermont	Yes	No	No	Yes	No	Yes	Yes	Yes	34	625,000
Virginia	No	No	No	No	Yes	Yes	Yes	Yes	85	7,100,000
Washington	Yes	No	Yes	No	Yes	Yes	No	No	42	5,894,121
West Virginia	No	No	No	No	Yes	Yes	No	No	58	1,808,344
Wisconsin	Yes	No	No	No	No	No	Local	Local	64	5,400,000
Wyoming	Yes	Yes	No	No	Yes	Yes	Ad Hoc	Yes	16	493,782
Total	**45**	**12**	**16**	**9**						
Yes					**34**	**26**	**9**	**17**		
No					**10**	**19**	**23**	**17**		
Other					**7**	**6**	**19**	**17**		

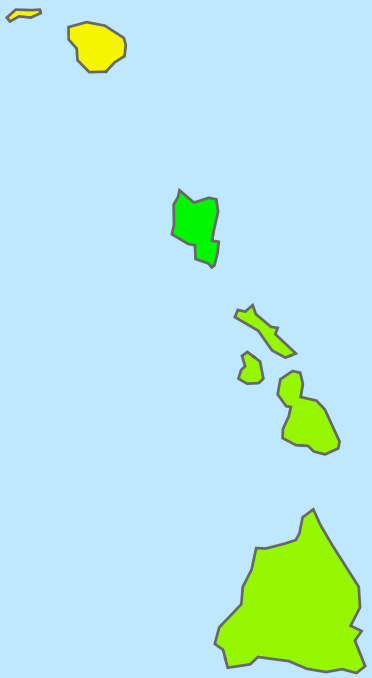
Appendix C

Population Distribution forAlaska's Boroughs and the Hawaiian Islands

Alaska Burroughs



Hawaiian Islands



Legend

STATES

COUNTIES

COUNTIES.POP1999

55 - 10000

10001 - 25000

25001 - 100000

100001 - 150000

150001 - 9284693