

State of Utah
Statewide Digital Parcel/Address
Phase-II Pre-Pilot Cost-Benefit Analysis

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Executive Summary

State of Utah Statewide Digital Parcel/Address Phase-II Pre-Pilot Cost-Benefit Analysis

Parcel/land records provide a common foundation of land information that is critical for a broad range of uses by both the public and private sectors. The Automated Geographic Reference Center and the State Chief Information Officer (CIO) Office have been working together to assess the potential for integrated management of digital parcel/address data for Utah, and have partnered with the Global Knowledge Management Center (GKMC) at the University of Utah on this endeavor starting in 2003. In spring 2004, a preliminary analysis from Phase I of the project identified potential user benefits and support via 14 user interviews. In Phase II, a pre-pilot analysis is intended to provide greater evidence of costs and benefits of implementing a statewide parcel/address database in Utah via expanded data collection and analysis.

Phase II Data Analysis

We collected data regarding parcel/address availability and usage from both data producers and users using interviews and surveys. The following are highlights of the main findings so far.

- 54% of data producers and 75% of data users strongly or somewhat support the statewide parcel/address database
- 50% of data users said they regularly use data from multiple counties. Most indicated problems with integrating and using data from multiple counties.
- Data users indicated needs for accurate, current and easy-to-use parcel/address data for multiple counties.
- Agencies and counties could realize efficiencies through time savings by regular use of the statewide data.
- Several data users and data producers expressed concerns about the feasibility of a statewide parcel/address database with regard to needed features and implementation.

Phase II Recommendations

Based on the findings, we submit the following recommendations for system implementation.

- The implementation of a state-wide parcel/address database would benefit Utah. The reported benefits are broad and still growing.
- A governance committee should be established to plan initial implementation, monitor implementation, usage, quality of service and actual costs incurred and benefits confirmed, and to assess future expansion on an ongoing basis. The governance committee and the technical implementation team should pay close attention to the following needs:
 - Helping managers to share data or mandating data sharing
 - Addressing user concerns about the database by keeping it current and accurate
 - Providing additional resources to smaller counties for digitizing parcel data
 - Assessing parcel/address information needs
- Future endeavors should be more focused on in-depth analyses of a smaller set of system users who are committed to collaborating on ongoing monitoring and analyses.

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Introduction

Parcel/land records provide a common foundation of land information that is critical for a broad range of uses by both the public and private sectors. The Automated Geographic Reference Center and the State Chief Information Officer (CIO) Office have been working together to assess the potential for integrated management of digital parcel/address data for Utah, and have partnered with the Global Knowledge Management Center (GKMC) at the University of Utah on this endeavor starting in 2003. The GKMC research team proposed that the project to investigate the costs and benefits of a statewide parcel/address database have four phases: preliminary analysis, pre-pilot analysis, pilot system development, and post-pilot analysis.

Phase I: Preliminary Analysis

In spring 2004, the first phase was completed and findings and recommendations were reported. In the preliminary analysis, we identified the citizens, government agencies, and private businesses that would be impacted by this project, and identified the potential benefits which were primarily qualitative in nature. A small sampling of data producer and users of parcel/address data were interviewed in this phase.

Phase II: Pre-pilot Analysis

When completed, the report on GKMC's phase II study intends to provide interested legislators and users more evidence of costs and benefits of implementing a state-wide parcel/address database in Utah as well as provide recommendations regarding future implementation and governance. The study has approached a broader set of stakeholders of the database to produce evidence in the form of statistical summaries of the state of parcel/address data implementation and access, current problems, perceived benefits and level of support as well as an analysis of options for the base system implementation and its growth.

In this summary, the GKMC research team presents the activities and findings to date and proposes some initial recommendations.

Conclusion and Initial Recommendations

This summary presents the activities and findings of Phase II of the study of statewide digital parcel/address cost-benefit analysis. We collected data regarding parcel/address availability and usage from both data producers and users using interviews and surveys. The data collected indicate that data users need a statewide database that can provide accurate, current and easy-to-use parcel/address data for their businesses and activities that involve geographic data for multiple counties. The collected data also indicate that most data producers at the county level support the effort of creating a statewide parcel/address system, although they expected some difficulties involved in the process.

Our analysis indicates that the implementation of a state-wide parcel/address database would benefit Utah. The reported benefits are broad and still growing. Agencies and counties could realize efficiencies through time savings by regular use of the data. However, to address concerns raised by potential users, it is imperative that a governance committee be established to plan initial implementation, monitor implementation, usage, quality of service and actual costs incurred and benefits confirmed, and to assess future expansion on an ongoing basis. We recommend that the governance committee and the technical implementation team pay close attention to the following needs:

- Helping managers to share data or mandating data sharing
- Addressing user concerns about the database by keeping it current and accurate
- Providing additional resources to smaller counties to put their data in a digital format
- Assessing parcel/address information needs

A preliminary analysis has shown that it is beneficial for Utah to start with a base parcel/address system that provides integrated management and access of five counties' parcel/address data to users in the public and private sectors, followed by an expansion option to complete the system for the remainder of the 29 counties in Utah. Continuing to collect the cost and benefit data and analysis of that information will be essential to validate the decision on a base system implementation and to decide future system expansion options.

While the study so far has focused on covering a large number and variety of data producers and users in our data collection, future endeavors should be more focused on in-depth analyses of a smaller set of system users who are committed to collaborating on ongoing monitoring and analyses. This focus will be appropriate in future phases not only to reveal effects but also to discover reasons and rationale behind them.

In the remainder of this document, we briefly describe the approaches and analyses from the study so far.

Data Analysis

Data User Survey Analysis

In order to gain a complete picture of how parcel and address data is used throughout the state, we surveyed both data producers (Recorders, Assessors and Surveyors) and data users. Data users are defined as any person or organization that uses parcel or address data in their work including federal agencies, state agencies, county agencies, city agencies and private businesses.

A major purpose of the user survey was to determine if users need parcel and address data from multiple counties, what problems they encounter integrating data from multiple counties, what benefits they see of a statewide parcel/address database, and how supportive they are of the statewide database.

Methodology and Response

Two surveys were distributed to data users: a short, 1-page survey and a longer survey.

1-page survey

A short, 1-page survey for data users was given out and collected at a GIS conference at St. George, Utah, Sept. 2004. Attendees at the conference were people from around the State of Utah that use GIS data in their job functions. A raffle prize was drawn from those who completed the survey to encourage results. This survey had 31 respondents. A breakdown of the respondents is in Table 1 below.

Table 1: 1-page survey respondents	
Category of Data User	Number of Respondents
Local Government	16
State Agency	6
Federal Agency	1
Commercial Data User	1
Non-profit Data User	5
Others	2
Total Responses	31

Emailed survey

A separate, longer survey was distributed via email to various data users. The list of data users was compiled by AGRC employees and contained nearly 300 email addresses of data users. Many contacts and email addresses were out of date, leading to a significant number of failed messages. After parsing the list for failed email addresses, the data user email list was reduced to about 170. The survey was emailed weekly to recipients that had not responded from November 2004 to January 2005. There were 26 responses for this survey. Table 2 shows a breakdown of the respondents.

Table 2: Emailed survey respondents	
Category of Data Users	The number of organizations responded
Federal Agencies	4
State Agencies	9
County Agencies	4
City Agencies	9
Non-Profit Organizations	2
Commercial Organizations	0
Individual Citizens	0
Total Number of Responses	28

Results

1-page survey

The 1-page survey had 31 respondents at the GIS conference out of over 200 attendees. There were 10 questions in all in the survey. Many of them were dual-part questions to ask about parcel data and address data. Many respondents only filled out the last question regarding how supportive they were of the statewide database. Also, people may use only parcel data or only address data in their job functions and so there are slight differences between responses for parcel data and address data. We will summarize the responses below. Please see the appendix for a complete listing of responses to the survey.

14 respondents indicated that they use parcel or address data daily versus 8 that use it less often. Nearly all obtained their parcel and address data digitally or both digitally and on paper. 12 respondents indicated that they use parcel or address data from multiple counties versus 10 that did not. Nearly all of the respondents that get data from different counties have to transform the data to make it useable.

Table 3 indicates how supportive the 1-page respondents were of the statewide database.

Table 3: Supportiveness of statewide database (1-page survey respondents)	
Very supportive	52%
Somewhat supportive	26%
Neutral	19%
Somewhat not supportive	3%
Not supportive	0%

Emailed survey

The long survey had 28 responses from the data user email list of nearly 170, for a response rate of 15%. The survey had 12 main questions, many of which were dual-part questions for parcel data and address data. We will summarize the responses below. Please see the appendix for a complete listing of responses to the survey.

Table 4 indicates which attributes of parcel data are most requested by users. The most requested attributes are parcel outline (polygon), parcel street address, parcel ID and owner name. All attributes are requested by some users, indicating that all parcel information is important to have in a statewide database.

Table 4: Requested parcel attributes	
Attributes	Percentage
File Header	29%
Parcel Outline (Polygon)	86%
Parcel Centroid	29%
Parcel ID	75%
Source Reference	36%
Source Reference Date	29%
Owner Type	57%
Improved	50%
Owner Name	71%
Assessment	36%
Tax bill Mailing Address	39%
Parcel Street Address	79%
Subdivision Name	54%
Parcel Area	64%
Parcel Zoning	57%
Public Parcel Name	54%

As shown in Table 5, most respondents use parcel and address data daily. Only 5 respondents said that they use this data less than weekly. Most get this data digitally, but many also get the data in paper form. There is a long list of uses for parcel and address data including mapping, identifying owners, and emergency aid for departments including wildlife management, utilities, census, etc.

Table 5: Use of parcel and address data		
Usage	Parcel percentage	Address percentage
Daily	70%	56%
Weekly	13%	17%
Semi-annually	13%	13%
Annually	4%	4%

Many users need information from multiple counties to perform their job functions (See Table 6). In our sample, 12 respondents said that they used data from multiple counties. These respondents obtained the data from multiple counties in several ways. They travel to the county Recorder’s office to get the data, they download the data from a website, they purchase the data, or they contact the Recorder to have the data sent via email or other means. Several respondents said they did not encounter problems in merging data from multiple counties, but many respondents indicated they do have problems with data accuracy, merging the disparate information, data currency, and lacking in-house expertise on GIS. This indicates that different users have different levels of sophistication in using GIS information. Some users have more

resources to merge and correct the data. Differences in the way the data is obtained and the sources of the data would also lead various problems with merging the information.

Table 6: Use of Multiple County Data		
Response	Parcel Data	Address Data
Yes, use data from multiple counties	50%	50%
No, don't use data from multiple counties	50%	50%

As shown in Table 7, users were asked to rate various benefits of a statewide parcel/address database. Users thought that the statewide database would result in increased consistency, increased data accuracy, increased cost-effectiveness and improved decision-making. Users were neutral to somewhat positive regarding increased data currency, reduction in time delays, increased scalability, and increased speed and ability to respond to ad hoc or changing needs. The negative responses to these benefits were very low. The most negative responses were for increased data currency with 5 responses of somewhat disagree or strongly disagree.

Table 7: Benefits of statewide database					
Response	Strongly Disagree	Somewhat Disagree	Do not know	Somewhat Agree	Strongly Agree
Increased consistency	8%	0%	16%	32%	44%
Increased data accuracy	8%	8%	15%	23%	46%
Increased data currency	8%	11%	31%	31%	19%
Reduction in time delays	0%	8%	37%	26%	29%
Increased cost-effectiveness	0%	8%	23%	42%	27%
Increased scalability	4%	4%	38%	38%	16%
Increased speed and ability to respond to ad hoc or changing needs	4%	8%	38%	19%	31%
Increased consistency	8%	0%	16%	32%	44%

Users were asked to provide specific examples of ways that a statewide parcel/address database would help their organization. One state agency estimates that it can save \$40,000-50,000 a year in labor savings from not having to travel to various counties to get parcel and address information. A federal agency estimates it can save about \$30,000 a year by reducing the amount of time they spend researching new addresses and resolving un-geocoded addresses. Another state agency also indicated that they spend about \$20,000 a year to purchase the entire parcel and address data from GDT since they lack the in-house expertise for merging all of the various parcel and address data. However, the GDT information is often out-of-date and has many inaccuracies. They are responsible for maintaining the underground infrastructure in Utah, and are very concerned about the implications of having inaccurate parcel and address data.

Table 8 shows how supportive respondents are of the statewide database. Overall, users are positive about the statewide database. When asked how supportive they are of the database, 7 responded with strongly support, 11 somewhat support, 4 responded neutral, and 2 responded somewhat do not support. None answered “strongly do not support”.

Table 8: Supportiveness of statewide database (Emailed survey respondents)	
Very supportive	29%
Somewhat supportive	46%
Neutral	17%
Somewhat not supportive	8%
Not supportive	0%

Several respondents expressed concerns about the state being able to organize all of the information in a timely and accurate manner. These concerns should be addressed as the implementation goes forward. Users were able to see the benefits of the statewide database, but many implied that though they would benefit from it, they did not necessarily want to pay for it.

The responses from both surveys indicate that there is a need among users for the statewide database. Many respondents gave examples of ways that this could help their organization. Based on the responses given, just the 9 agencies that estimated their cost savings could save up to \$130,000 a year! Several other respondents made comments like “If you can create this database so that it is accurate, current and easy to use, then we can save a lot in labor and money.” There are many issues to address in creating this database, such as letting all users have the resources and capabilities to use it, keeping it up-to-date and accurate, and not creating additional work for users that use the database.

Please see the appendix for detailed answers to the emailed survey.

Data Producer Survey Analysis

We received responses from 25 individuals or groups of respondents covering 24 counties. Based on the data received, most (21 out of 23) responded counties have parcel covering the whole county, about 39% of the responded counties have address covering the whole county. The majority (15 out of 23) of the responded counties have their data stored in digital format. However, the systems that these counties use vary a lot, ranging from tabular system, homegrown GIS system, to more advanced Arc Info GIS system. See Table 9 for a breakdown of the various systems used by the respondents.

Table 9: County systems	
System Type	Percentage of County Respondents
Arc/Info	30%
Homegrown GIS	20%
Homegrown tabular system	10%
Other GIS systems	10%
Other Tabular systems	30%

Meanwhile, the frequency that each county updates the data is also significantly different: some update almost in real time, others update daily, still others update roughly monthly, and still others update annually. Table 10 shows how often the respondents update their parcel and address data. In terms of the methods that the users request data from county recorder or

assessor’s office, in-person visit and telephone is mostly used, followed by Internet portal, mail, and dial-up system.

Table 10: Data update frequency			
Daily Basis	Whenever New Information Comes In	Annually	Other
39%	48%	4%	9%

Table 11 shows how data producers perceive the benefits of the statewide database. We see that the data producers generally see the benefits of the statewide database, though they are more skeptical than the data users.

Table 11: Benefits of the statewide database					
	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
More convenient data access by users	14%	21%	14%	29%	21%
Reduced delay in data access by users	21%	14%	7%	29%	29%
Time savings of users in accessing and processing data	21%	7%	21%	21%	29%
Time savings of county offices in handling data requests from users	21%	29%	14%	21%	14%
Improved data accuracy, consistency and currency	29%	14%	21%	14%	21%
Improved data security	29%	14%	14%	29%	14%
Improved decision making by data users	14%	14%	21%	21%	29%
Improved service quality to users/citizens	14%	7%	14%	36%	36%
Cost savings of users in accessing and processing data	13%	13%	20%	27%	27%
Cost savings of county offices in handling data requests from users	29%	14%	14%	29%	14%
Improved speed and ability to respond to changing or increasing needs in parcel/address data sharing	15%	15%	15%	23%	31%
Cost effectiveness in sharing parcel/address related systems and resources	14%	7%	21%	29%	29%

Table 12 shows how supportive data producers are of the statewide database. While nearly all of the respondents recognized the potential risks, problems, or obstacles in creating and using a statewide parcel/address system, more than half of the respondents are supportive of creating and using the statewide system.

Table 12: Supportiveness of statewide database (Data producer respondents)	
Very supportive	22%
Somewhat supportive	32%
Neutral	14%
Somewhat not supportive	18%
Not supportive	14%

Please see the appendix for detailed answers to the survey.

Costs and Benefits of State-wide Parcel/Address Data Management: A Real Option Analysis Framework

While quantification of system implementation costs and benefits is difficult, limited and error-prone, assessments of quantitative costs and benefits have the potential to provide insights into the quantified conditions (e.g., regarding the estimated costs and benefits of system options) under which initial or future implementations of state-wide parcel/address database can or cannot be justified given some underlying assumptions. The revelation of these conditions could help policy or decision makers adjust or create viable system implementation and governance options.

In this study, we will customize a real option analysis framework for analyzing the costs and benefits of a state-wide parcel/address database across the entire or only part of the state, and report the analyses derived using quantitative cost and benefit information collected with some generalization assumptions.

Option analysis has been applied to analyze financial (e.g., stock and other equity) investment decisions. Real option analysis refers to analysis of investments (e.g., manufacturing or technology) other than investments in financial markets and has become increasingly popular in evaluating a variety of investment opportunities including information systems projects.

A project embeds a real option when managers are able to take future actions such as abandoning, deferring, and scaling up and down the project in response to new events, new business environments, and new information learned from the initial investment. Take for instance Utah's decisions regarding implementing a state-wide parcel/address database need not and will not likely be made all at once. Typical of most information system implementation, the actual use of an information system helps users develop better understanding of the system to decide on immediate and future needs and plans for the system. It is important to decide on the initial and incremental implementation options for this database by considering initial and updated assessments of system costs and benefits over time. Hence, real option analysis is a better alternative to evaluate IT investments by taking account of future investment or disinvestments that might be undertaken and recognizes managerial flexibility.

In the context of the Utah statewide parcel/address database implementation, the initial investment could be to build a *base system* that for example may provide flexible multi-county parcel/address data entries/uploads and lookups/downloads and basic data transformation, integration and reporting via the Web.

Future expansions may consider *functional system growth options* that outline incremental additions of such system functions or services as seamless integration of state-wide parcel/address database and data users' GIS or other application systems, and new possibilities of viewing and using parcel/address data. In other words, these options increase varieties, convenience and effectiveness of using state-wide parcel/address data for Utah's land, tax, safety management and planning, and/or other purposes. It is expected that any of these options will increase the benefit level at some system expansion costs.

The adoption of Utah’s state-wide parcel/address database by individual counties may vary from partial to full adoption in the state over time. In addition, the governance policies regarding system governance and cost sharing options made available to individual counties and user agencies may evolve with the relevant policies and the associated benefits, costs and risks perceived as well as experienced by users. Consideration of these *adoption and governance growth options* should consider how to allocate and supplement system governance costs and the added benefits when the adoption level increases.

The objective of a real option analysis is to calculate:

$$NPV^A = NPV^P + V$$

where NPV^A is the active NPV, NPV^P is the passive NPV used in traditional cost-benefit analysis for the initial investment, and V is the value of options that embed in the base system. If the active NPV is positive, the initial investment is justified. Let’s use a simplest example to illustrate how it works. Consider a two-stage digital government project, the first stage payoff (i.e. the passive NPV) is $-\$2M$, the second stage payoff follows a binomial branch process as shown in Figure 1.

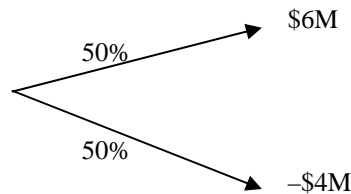


Figure 1. Second stage payoff

A traditional NPV for the second stage is

$$\$6M \times 50\% + (-\$4M) \times 50\% = \$1M$$

Plus the first stage NPV of $-\$2M$, the overall NPV is $-\$1M$, which obviously cannot justify the investment.

Under real option analysis framework, the second stage could be view as an option, meaning investors have the flexibility to decide whether or not to proceed depending on the payoff, just like stock option holders can decide whether or not to exercise an option depending the difference between stock price and strike price. The underlying assumption is that although we only know the distribution of the outcomes now, we will know what the outcome will be in the future before we exercise the option. Therefore the value of the second stage as an option is

$$\$6M \times 50\% + (-\$4M) \times 0\% = \$3M$$

that results in an active NPV of $\$1M > 0$, and the first stage investment is justified!

The example above well explains how real option analysis works thanks to its simplicity, but in reality, we can hardly find any real option as simple as that. A more realistic model is the groundbreaking Black-Scholes model originally developed to value stock options. It assumes

that the strike price (investment cost) is a constant, and the stock price (benefit) follows a geometric Brownian motion, which is a stochastic process that consists of a constant upward or downward drift and a random walk fluctuation. With a few more assumptions and some mathematics, a closed form analytical solution called Black-Scholes formula can be obtained. Black-Scholes model is the most influential option pricing model in and out of finance area, and we will use this model to calculate the option value in this study.

Although there are abundant growth opportunities with the base system, due to the data availability, we will only consider one option in this study, which is the option to expand the base system to cover the entire state of Utah that has 29 counties.

Under some assumptions we estimate the cost and benefit for the base system as well as for the expansion as shown in Table 13. A substantial amount of the cost is devoted to user training and compensating for users' time in using and governing the system.

Table 13. Cost and benefit for the base and expansion system in US\$

	Base System	Expansion
Cost	1,176,918	4,553,419
Benefit	927,416	4,451,596
NPV	- 249,502	

For the base system, the passive NPV is - \$220,144. Obviously the base system cannot be justified without taking account of the expansion option. However, according to the sensitivity analysis of the option value against different expiration time T and volatility σ using risk-free rate of interest at 6% as depicted in Table 14, the lowest option value is \$692,169, which gives an active NPV of \$472,025.

Table 14. Expansion option value based on different expiration time and volatility

σ	T (year)	V (US\$)	σ	T (year)	V (US\$)
35%	1	692,169	10%	3	718,546
	2	1,051,984	20%		948,568
	3	1,339,133	30%		1,207,771
	4	1,584,321	35%		1,339,133
	5	1,800,020	50%		1,728,136

Moreover, the expansion cost in Table 13 is estimated based on the assumption that the for rollout, training, change management, maintenance, operation, and use, the cost for expansion will be four times of the base system on the state side, roughly proportional to the numbers of counties. The ratio could be lower considering the saved duplicated effort. If the ratio drops to 2.5, the expansion cost decreases to \$3,973,254, which further drives up the option value as shown in Table 15 as well as the active NPV.

Table 15. Expansion option value based on different expiration time and volatility

σ	T (year)	V (US\$)	σ	T (year)	V (US\$)
35%	1	991,739	10%	3	1,145,129
	2	1,326,394	20%		1,278,549
	3	1,594,224	30%		1,482,921
	4	1,822,625	35%		1,594,224
	5	2,023,171	50%		1,936,926

As a result, we assert that the active NPV will be significantly positive, and the initial investment should be justified despite the fact that a passive NPV without taking account of option value suggests otherwise.

Appendix A: Data user emailed survey detailed responses

The Frequency of the Attributes of Parcel Data Required by Data users		
Attributes	Yes	Percentage
File Header	8	29%
Parcel Outline (Polygon)	24	86%
Parcel Centroid	8	29%
Parcel ID	21	75%
Source Reference	10	36%
Source Reference Date	8	29%
Owner Type	16	57%
Improved	14	50%
Owner Name	20	71%
Assessment	10	36%
Tax bill Mailing Address	11	39%
Parcel Street Address	22	79%
Subdivision Name	15	54%
Parcel Area	18	64%
Parcel Zoning	16	57%
Public Parcel Name	15	54%

For Question 1: We are not currently using parcel/address data, but we sure ought to be. The most relevant attributes for our needs would simply be location but I think all of these would be useful at some point (one state agency)

Question	Parcel Data	Address Data
2. What do you use the parcel/address data for?	<ul style="list-style-type: none"> --To identify land owners for wildlife mgt and information purposes --Maps showing Church boundaries --Identifying the ownership. ID is used to begin abstract research --We are not using parcels right now, but would like to in the future so we can be more precise finding the dig site location --Misc. City purposes --Temporary water distribution contracts. --Unique identifier -- We maintain the address data for Salt Lake City and use the county parcel map as a tool and also as general information for our clients and the public. --Small scale mapping. --Notifications, Building Permits, Emergency Services and for reference within a number of ArcReader projects 	<ul style="list-style-type: none"> --Church member locations/moves --Calculation of new address's. Location of parcel on maps. --We geocode addresses and intersections to find lat/long locations where excavators will be digging. Once the dig site has been located, we can determine which utility companies have underground lines in the dig site area. We then notify them so they can mark the locations of their underground facilities so the excavator will not damage them when he digs --Conducting surveys and censuses --Misc City purposes --Temporary water distribution contracts. --To tie customer accounts to GIS

	<p>distributed for specific departments.</p> <ul style="list-style-type: none"> --Mapping /centerline/assessment/etc --Mapping, correcting other GIS layers -- Set-back verification, land use records, general analysis, track development, etc. --Update Storm water Utility --Identify parcels susceptible to geologic hazards. --Precisely locating project areas -- Redevelopment and Economic Development -- Calibrating a regional land use model -- We obtain the parcel data to obtain total parcel area which helps us estimate how much of the parcel is irrigated -- Literally hundreds of different projects for Planning, Public Works (streets, snow, garbage, etc), Public Utilities (water, storm-water), Building inspections, Police, Fire, Legal, Finance, Administration, Economic Development, Emergency Planning, Court cases, City Council research, etc. -- Verify against Federal Land Records information -- To create maps for end users. --GIS layer --Right of Way -- To verify the property boundary, address and ownership history. --Gaining access. --Potential Responsible Party searching. --Calculating area for sample density. 	<p>data</p> <ul style="list-style-type: none"> --We maintain the address data for Salt Lake City and use the county parcel map as an aid. --Assigning address, 911 -- Inform other depts. On address locations, serve info to public --Automate mailings, demographic research --Identifying unauthorized activities, and sending correspondence. -would be extremely helpful for indexing Historic Properties. - Redevelopment and Economic Development -- Geocoding building permit and employment data -- The address helps us link the parcel to water billing data. -- Literally hundreds of different projects for Planning, Public Works (streets, snow, garbage, etc), Public Utilities (water, storm-water), Building inspections, Police, Fire, Legal, Finance, Administration, Economic Development, Emergency Planning, Court cases, City Council research, etc -- To create maps for end users. -- To locate the property owner and his/her address for permission to access their property. -- Community mailing lists
<p>3. How often do you use parcel/address data?</p>	<p>Almost daily (2) Daily (13); 70% Several times per month (2) Through out the Spring and Summer (1) Couple of times a year (1) Continuous (1) Annually (1) Project driven, dozen times a year (1) Weekly (1)</p>	<p>Daily (11) Occasionally, mainly to augment building addresses (1) Three times a week (1) Weekly (1) Several times per month (2) Through out the Spring and Summer (1) Semi-annually (2) All day every day - over 1,000 times per day Should use it daily but don't Continuous Annually (1)</p>

<p>4. Do you get the data on digital media or paper or both?</p>	<p>Paper (9) Digital Media (18) We maintain our own City Parcels and update owner info. from a digital download from Cache County. We also, rely upon the County's plat maps, occasionally. Both (3)</p>	<p>Paper (7) Digital media (15) Almost entirely digital, but we do use some paper maps if no digital data is available, such as in rural areas. We may also use paper maps if our software formats are not compatible and I cannot import the digital data from a source provider. (ArcView vs. Autocad conflicts, etc.) The data is on paper then entered into a simple Access database by staff Both (1)</p>
<p>5. Do you get data from other sources rather than county recorders? If so, please specify the data source(s).</p>	<p>Yes, other legal documents (1) Geographic Data Technology (GDT) (1) Yes - Our own creations, as well as sharing of data with other cities (1) Project surveyors and counties (1) Railroads other city agencies (1) Private Surveyors (1) Yes. We update our parcels in house when plat maps are approved for display purposes (1 city) No (12) When a new subdivision is approved, we request digital drawings from the project proponent, which we then add to our parcel data GIS staff (linked to Co. Recorder) and Newreach Not any more- used to get it from 3rd party providers such as First American. Federal Land Records</p>	<p>GDT (3) Yes, the AGRC in the form of road centerlines with address ranges (1) Yes - Our own creations, as well as sharing of data with other cities (1) Same No (6) Building addresses are derived from site visits and are used as well as parcel addresses (1) Currently I get very little data from county recorders directly. Most of our digital data is currently purchased from Geographic Data Technology (GDT). We do also use some digital and paper street maps obtained from the AGRC, cities, subdivision developers and utility companies nowhere right now, but ours is a statewide database so consistency across county lines would be very important GIS staff (linked to Co. Recorder) and Newreach Address data (separate from Parcel Data) is not available from County Recorders. See comments.</p>

<p>6. Do you use parcel/address data from multiple counties? If Yes, how often?</p>	<p>Yes (2) Yes Daily (2) Yes, weekly (1) Yes every other month (1) Yes. Through out the Spring and Summer (1) Yes, regularly for neighboring counties (1) –Couple of times a year (2) Once a year (1) No (11) I do expect that we may one day need parcel data for all of Cache County for emergency services purposes Yes, always</p>	<p>Yes Daily (2) Yes weekly (1) Yes. Through out the Spring and Summer (1) Yes, semi-annually (2) No (7) Not Yet (1) Yes, always Yes (1)</p>
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	Parcel Data	Address Data
<p>7. How do you obtain that data from multiple counties? Please circle all possible options</p>	<p>_Travel to each county recorder’s office (7) _Download files from each county’s website (9) _Purchase data (5) _Other ways data is obtained (a) Contact the Recorders office – have them send the data (1) (b) Have it mailed (1) (c) Contact recorder to have them email the data (d) SITLA (e) Hire contractor to get it</p>	<p>_Travel to each county recorder’s office (5) _Download files from each county’s website (9) _Purchase data (5) _Other ways data is obtained: (a) AGRC website (1) (b) Contact the Recorders office – have them send the data (1) (c) As mentioned, I purchase street and address data from GDT for all 29 counties. I also get other data to fill in the holes where GDT data is incomplete or incorrect. I usually get this data from the AGRC or by calling and asking for it digitally or by mail (d) Contact recorder to have them email the data (e) Hire contractor to get it</p>
<p>8. What barriers/problems do you encounter when data come to you in different formats? For example need to convert and merge data</p>	<p>Geographic coordinate system conversion has become almost a standard practice when dealing with county parcel data and within house data None, purchase from same vendor. The problem is getting current information. I don’t generally get bulk data. Mostly</p>	<p>None, purchase from same vendor. The problem is getting current information. I don’t generally get bulk data. Mostly just locating a single or few parcels at a time. It creates a variety of data processing problems and results in loss of accuracy in address matching</p>

	<p>just locating a single or few parcels at a time.</p> <p>Usually no problems with the GIS software available now it's easy to convert and merge data. Also our data source uses the same software as us.</p> <p>Need to convert and merge and verify accuracy</p> <p>Conversions, field name / data type inconsistencies, managers reluctant to share data</p> <p>Differing coordinate systems and units of measure. Usually easily dealt with.</p> <p>I don't have the ability to convert WGS84 into our Datum/projection (Lat/long, NAD83)</p> <p>Incompatible projection systems, data quality, Non-standard land use codes and address systems</p> <p>Each recorder has their own standard projection. Sometimes the data is spatially accurate in some areas and not others. Some recorders use tax codes and others do not. Zoning is available from some recorders and not from others. The web server for Utah county did not allow the whole county to be downloaded at once and so the data must eventually be merged.</p> <p>Even with just one provider, the main problems occur when providers CHANGE their data format. Once we start getting data from someone, procedures are made to automate importing it for the future. If they go and change format or add or remove fields, this causes extra work.</p> <p>None, I have ArcInfo and can convert it</p>	<p>We do not have a GIS staff or the technical expertise in this area to manipulate data very much. If I did, I would likely convert and merge quite a bit of data. Because I don't, I end up using paper maps or keeping sources separate and then visually looking at it to figure out where it fits in.</p> <p>Need to convert and merge and verify accuracy</p> <p>Conversions, field name / data type inconsistencies, managers reluctant to share data</p> <p>converting and merging data is always a problem, but the biggest problem I can imagine would be just have different accuracies and levels of confidence between datasets if they are coming from multiple sources.</p> <p>Each recorder has their own standard projection. Sometimes the data is spatially accurate in some areas and not others. Some recorders use tax codes and others do not. Zoning is available from some recorders and not from others. The web server for Utah county did not allow the whole county to be downloaded at once and so the data must eventually be merged.</p>
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	<p>all.</p> <p>Most data must (currently) be obtained by traveling to the County Recorder and search their databases and/or hard copies. Paying for copies and then travel back. At this time, “Convert and merge” in general has not been an issue.</p> <p>So far, its always been hard copies only.</p> <p>Data difficult to understand, data incomplete, hours to be hand entered into spreadsheet or database before it is useable, data inaccurate.</p>	
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9. Rate the following proposed benefits as you think they would apply to the state-wide parcel/address system. Please check the appropriate box.					
	Strongly Disagree	Somewhat Disagree	Do not know	Somewhat Agree	Strongly Agree
Increased consistency	2		4	8	11
Increased data accuracy	2	2	4	6	12
Increased data currency	2	3	8	8	5
Reduction in time delays		2	10	7	8
Increased cost-effectiveness		2	6	11	7
Increased scalability	1	1	10	10	4
Increased speed and ability to respond to ad hoc or changing needs	1	2	10	5	8
Improved decision-making	1	1	5	9	10

10. Specific Examples 1 Federal Agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Identify owners of lands considered essential for wildlife habitat that the State might want to own or lease because of high wildlife value
(2) Efficiency: how could a statewide parcel/address system save your time	Increased efficiency, not needing to travel to county offices for ownership information
(3) Estimate how many man hours this would save you per year or project	8 man hours per week.
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	\$40,000 - \$50,000 per year

10. Specific Examples 2: County Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	The data is mostly used to identify the parcel to begin document research associated with the parcel.
(2) Efficiency: how could a statewide parcel/address system save your time	It would give a starting place, however, the research would still have to be done at the source which the parcel/address information is currently obtained from. Therefore, I'm not sure that there would be any real time savings unless other research data were made available in connection with the parcel/address information.
(3) Estimate how many man hours this would save you per year or project	See 10. (2)
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	See 10. (2)

10. Specific Example 3: Federal Agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Utah has many high-growth communities. Keeping up with new subdivisions is a major challenge for us, since much digging is done in these areas. If we get a call for a street or address that we don't have on the map, we must rely on the excavator to tell us its location. This can be extremely risky. We also spend a great deal of time contacting cities, subdivision developers and local utility companies to learn the locations of new developments. I estimate that we spend around 2 man hours per day tracking down new road and developments, etc.
(2) Efficiency: how could a statewide parcel/address system save your time	GDT is woefully behind in updating their data for many high-growth areas – including areas in Summit, Wasatch, Utah, Salt Lake, Tooele and Washington Counties. I anticipate local data would be updated much more frequently and therefore would be more current.
(3) Estimate how many man hours this would save you per year or project	Estimated – 520 hours per year
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	Estimated - \$7,000 per year

10. Specific Example 4: Federal Agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	We use local addresses to design samples and conducts censuses. Accurate address lists are crucial to well-designed survey and samples.
(2) Efficiency: how could a statewide parcel/address system save your time	By reducing the amount of time we spend researching new addresses and resolving un-geocoded addresses
(3) Estimate how many man hours this would save you per year or project	If completely implemented, it could save 1 FTE or 2080 person-hours
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	If completely implemented, it could save \$35,000 annually

10. Specific Example 5: State Agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
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(1) Brief project description	Temporary water contracts
(2) Efficiency: how could a statewide parcel/address system save your time	Updating and Collecting parcels from one source instead of 4 different counties, some of which do not have digital information.
(3) Estimate how many man hours this would save you per year or project	160
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	\$2500

10. Specific Example 6: state agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Having the data available in the first place. Right now, it's too cumbersome for me to contact different counties to acquire data. All counties are not always receptive to giving or selling their data.
(2) Efficiency: how could a statewide parcel/address system save your time	One stop shopping – if you guys can pull it off!
(3) Estimate how many man hours this would save you per year or project	Many – again, if you guys can pull it off!
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	A bunch – again, if you guys can pull it off!

10. Specific Example 7: state agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Building a statewide geologic hazards database where user could search by parcel ID and see what hazards they need to consider.
(2) Efficiency: how could a statewide parcel/address system save your time	If this data is stored on an SDE I could link to it rather than store it locally. This would give me the most current info.
(3) Estimate how many man hours this would save you per year or project	100
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	2000

10. Specific Example 8: federal agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	We use GIS to map areas where project/permit areas are located. Accuracy is important because we use GIS to help analyze impacts to the environment and identify the correct parcels for unauthorized activities.
(2) Efficiency: how could a statewide parcel/address system save your time	We would have access to all counties. Currently, we only have access to three counties, because we are not allowed to purchase the data. Most counties (rural) don't even have this data available, or are not willing to share.
(3) Estimate how many man hours this would save you per year or project	30 or 40 hours per year.
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	Approx \$200.00 per county per year

10. Specific Example 9: state agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Historic Buildings inventory is currently maintained by address but no GIS. Address alone is no way to maintain files. Statewide address data would allow that data to be converted to GIS with much greater ease.
(2) Efficiency: how could a statewide parcel/address system save your time	Would help migrate to a GIS which would save consultants and private citizens time in researching particular Historic Buildings.
(3) Estimate how many man hours this would save you per year or project	No idea.
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	No idea. Improvements in customer service would be a better measure of how our organization would benefit.

10. Specific Example **10: city** (notes: the same respondent indicates that this city does not use multi-county parcel/address data)

Provide examples of how better access to state-wide parcel/address data would improve your business operations

(1) Brief project description - Research of names of property owners, addresses, phone, the location, size and shape of parcels, existing and proposed uses, property valuation (land and buildings) along with locations of utilities and any hazardous materials or environmental problems is necessary to facilitate economic and redevelopment activities.

(2) Efficiency: how could a statewide parcel/address system save your time - It will save time only if it provides a customer friendly quick and ready access to information available with minimal effort by an unskilled occasional user.

(3) Estimate how many man hours this would save you per year or project - Maybe up to 200 hours

(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system? Up to \$,000-\$6,000.

10. Specific Examples 11: state agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	Water use projections within a city. Culinary water deliveries are measured while secondary irrigation water needs to be estimated through lot size for each system.
(2) Efficiency: how could a statewide parcel/address system save your time	There would be no long lag time between identifying a need for the data and obtaining the data.
(3) Estimate how many man hours this would save you per year or project	5 to 10 hours of actual time spent. However, it may enable projects to be completed months earlier.
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	\$500 for every update of one county data and \$50 for every update of another county's data, ~\$100 in time saved obtaining data, plus the value of earlier project completion.

10. Specific Example 12: State agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	It would improve land ownership verification and the development of a verified GIS ownership layer
(2) Efficiency: how could a statewide parcel/address system save your time	
(3) Estimate how many man hours this would save you per year or project	
(4) Estimate the total amount of money your organization could save from this project if there were a statewide	

parcel/address system?	
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10. Specific Example 13: County Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	I am the one building the digital data.
(2) Efficiency: how could a statewide parcel/address system save your time	See above
(3) Estimate how many man hours this would save you per year or project	See above
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	See above

10. Specific Examples 14: State Agency Provide examples of how better access to state-wide parcel/address data would improve your business operations	
(1) Brief project description	<ol style="list-style-type: none"> 1. Identifying and cleaning up hazardous waste sites. First, the property owner of the site must be identified and located. 2. One user responded: Primarily a time (\$) saver. Ultimately, if an effective system were available, real time data would be very effective. 3. One user responded: Superfund cleanup.
(2) Efficiency: how could a statewide parcel/address system save your time	<ol style="list-style-type: none"> 1. Instead of physically going to the County office where the property is located, I could find the information from my desktop computer. 2. One user responded: Easier access, Potential Responsible Party searches and increased community outreach.
(3) Estimate how many man hours this would save you per year or project	<ol style="list-style-type: none"> 1. 8 hours or more per project. 2. One user responded: 20 hours per year. 3. One user responded: 120 to 200 hours.
(4) Estimate the total amount of money your organization could save from this project if there were a statewide parcel/address system?	<ol style="list-style-type: none"> 1. \$20,000 to \$30,000 per year. 2. One user responded: Ask a finance person. Travel to other counties is costly.

11. Benefits for your organization	
<p>(1). Can you estimate the total amount of money or time you organization could save if there were a statewide parcel/address system?</p>	<p>--No, because I can't conceive all the ways that such a system could be used</p> <p>Depending on data structure and availability, we could save \$30,000 to \$60,000 a year in staffing costs</p> <p>160 hrs/ \$2,500</p> <p>4000 – we only have a couple current project that require parcel/address data</p> <p>Unknown, are you going to track Federal property too?</p> <p>\$3,000-\$5,000</p> <p>~\$300 annually assuming we update data every three years plus the value of earlier project completion.</p> <p>It would probably cost us more money since we would have to submit our parcel data to the state.</p> <p>We only care about our county data, not a statewide database.</p> <p>We have several people in our office doing property searches and they all require physically visiting County offices. Time saved 200 hours per year.</p>
<p>(2). Please specify other benefits of a statewide system to your organizations.</p>	<p>--Verification of our land ownership and adjacent landowners we need to work with. Be able to identify specific education targets</p> <p>A potentially more accurate decennial census</p> <p>The time and money saved not only saves this organization but saves the tax payers.</p> <p>--Accuracy. Local data that is provided by individual cities and counties has proven to be much more accurate and reliable than the data we currently purchase from GDT</p> <p>I need to know more about how successful you guys can be at this. My guess is that you will not be as successful as you think you can be and thus, the data will not be of much use to us. We need high resolution parcel data, not USGS-accurate that is suitable for analysis at the 1:24,000 scale</p> <p>It could allow us to look outside of our City boundaries if a</p>

project required us to notify people outside of our immediate boundaries.

Wouldn't we have to track where the parcel came from

Since we are a state agency we respond to concerns from people throughout. Having this data would generally help us respond to everyone equally.

Usually I just call the recorder. Maybe save an hour per project.

Unknown. I don't have a great need for this data.

One place to see an overall picture of ownership data

Just better service to our customers by being able to deliver information about Historic Buildings via GIS rather than the archaic flat address filing system being used now.

It could allow data comparisons between localities.

Contact personnel in each county change constantly. Each contact often requires that new relationships be established.

This would help in the Federal vs. State vs. Private land ownership verification effort. Discrepancies have been identified between Federal/State/County records this could help in correcting the conflict.

Fewer vehicles needed. Safety in regards to less driving. Quicker access in case something was overlooked or new needs arise. Others in the office to provide help.

12. Indicate how supportive you are of building a statewide parcel/address system. Please check the appropriate box.				
Do not support	Somewhat do not support	Do not know	Somewhat support	Strongly support
	2	4	11	8

Additional Comments: My experience has been that the organization I work for is very excited about such efforts, but when it comes to laying money on the table to finance something like this we quickly back away.

If the system was to be the beginning of linking recorded documents to the parcels, such as deeds, title abstracts, plats, maps, surveys, or other documents that affect parcel ownership, then I would Strongly support the system

In the name of public safety, please make this happen! We rely heavily on street and address data to protect Utah's underground utility infrastructure. Because we do not have a GIS staff nor the expertise to compile, manipulate and merge data from many sources, we have been unable to obtain very much local data. We also do not have the political clout to get cities & counties to cooperate and share their data in a timely fashion. As a result, we have resorted to purchasing the best commercial data available, which is from GDT. We pay over \$20,000 per year for this data – and it has many errors and inaccuracies and is not very current.

This database is very much needed. Please contact me if I can be of assistance in any way. I am happy to give a more detailed presentation outlining our need and the benefit it would have in protecting the utility infrastructure in Utah.

My data is localized, my service area is small, so the benefits to my organization would be minimal, however I can see how data consistency and accuracy would ultimately benefit everyone in the state.

We support this effort but it will not make things easier for us: we only work with one county data.

This is a grand scale plan you are proposing. I don't think you guys can achieve the resolution or accuracy required for the most important uses of parcels and addresses, such as emergency-911 and financial (tax) analysis. We could only use the data if the resolution and accuracy are high. How much more work will county recorder and assessor offices have to do to support this effort? I think your time would be better spent by simply being a clearing house for the individual county parcel data sets. Simply have a contact name for each county for those who want to acquire parcel data.

I don't exactly understand the process of how a state parcel/ address system works. I don't like downloading data from other sites for my city because it takes more time and we maintain a lot of other information along with the attributes listed. It is not explained how this system would work and I'm unable to understand benefits etc.

It's easy for me to support since I don't have to update the thing. I only stand to benefit from it. I would support a statewide system even if it were limited and did not contain personal/sensitive data. Give me at the least a tax-id and parcel shape and I'd be pretty happy.

Good idea but complicated to implement. Who is going to input the parcels from the smaller, more rural counties? What funding sources will this project utilize?

Data should be free or available for a nominal fee. Owner/address data should be updated weekly if not daily

As you can probably tell from my responses, I am not familiar with what parcel data is available right now. I just manage archaeological sites to which parcel data does not apply. Others in my Division maintain information on Historic Buildings and I have no idea how they maintain their files without a GIS. I know I can't find anything when I go over there! As I understand it, to convert to a GIS, they would have to go through an address matching process which would require getting parcel data from all of the counties. I imagine different file types, attributes, data accuracy, currency of data, and so on would all be major issues if and when they ever get around to moving to a GIS. I'm sure any statewide use would benefit immensely from a statewide parcel/address dataset

Would this system be available to private real estate firms? Will the data be current and timely? Who will be responsible for updates should a parcel be sold or an address change through development? I don't use GIS data much because I get great support from our in-house GIS Department

Great idea.

Question 1)

From the way this is asked, it appears that the designers of the survey don't have a clue about how parcel data works. I've gotten parcel data from 2- 3rd party providers and also directly from our County, and no one EVER gives you an option about "What attributes do you request". The way it works is: when you ask for (or purchase) parcel data, you get what they package, no choices allowed.

Also, the list of attributes in the survey is extremely primitive (16 items). When we get GIS parcel data from Salt Lake County, it has around 55 different attributes embedded in the shapefile. In the past, we also got database files with another 150 or so attributes that we would link to the parcels as needed. Most of these 200 or so attributes have been used in one way or another for different needs.

In our case, Zoning isn't part of the parcel attributes. We keep ours as a separate GIS layer, since the Zoning boundaries do not necessarily follow parcels. Legally, Zones go to the center of the street in order to control how developers install street improvements, sidewalks, etc. that are not part of the parcel but are part of the development. Some larger undeveloped parcels are actually split by Zone boundaries. If the Zoning info is considered to be part of the parcels, it's an over-simplification.

Questions 2-8)

Exactly what do you mean by "Address data" as opposed to "Parcel data"? There are several ways of storing Addresses that are quite different.

A) Addresses as an attribute of the parcels. This is really too coarse (consider shopping centers with many addresses on one parcel).

B) Addresses as ranges stored as part of street centerline files. These are good for verifying

approximate locations, but do not validate if a particular address is correct or not.

- C) A point file of actual address locations. This is very labor-intensive to construct, but would have the true location of all actual addresses, allowing both verification and location.

We have A) from the County, B) has been constructed as a joint effort of Sandy and neighboring cities in association with VECC, and C) is something we are working on.

So some of the parts to questions 2-8 have more than one answer.

Question 9)

Since our data all falls within one County, I can't think of any advantages to us in having the data combined from all Counties at the State level. The only advantage might be that we could get it more consistently, as SL County still hasn't completely settled policies about how to distribute data.

How could this POSSIBLY result in "Improved Accuracy"? Each County has full-time surveyors and office people working on this daily with a never-ending stream of parcel changes. The State would have to compile this data in one of 3 ways.

- 1) Simply assemble what the Counties have and periodically update it (no change in accuracy),
- 2) Assemble what the Counties have and attempt to have people in SLC second-guess the Surveyors and Recorders all over the State, making edits as they see fit. (Questionable public policy, not likely to lead to better accuracy since they aren't in the field. Would need lots of new employees.)

Attempt to completely replace the County Surveyors and Recorders. Hmm. A staff of dozens of new State employees? Can't see better accuracy here, either.

I would be extremely concerned about currency. We'd like to get parcel data monthly in order to show new developments or other parcel changes, and also keep ownership attributes current. Would the State really be able to provide that fast a turn-around? I get the feeling that the State-level data would be maybe an annual update at best.

The BLM as the official repository for Federal land ownership records has a mission to maintain the public land records. The BLM is in the process of updating our manual records keeping system into an automated system. Records verification and maintenance are key to this effort. We are currently working with both state agencies AGRC and SITLA to develop a verified GIS land ownership layer.

This has been strongly needed for years now. Some of the Wasatch Front counties may already have accessible electronic data, but none of the rural counties do.

Question Number 1 above needs to include the tracking of the following:

- A. Previous Owners
- B. Developer
- C. Images – aerial photography.

Appendix B: Data Producer Detailed Survey Responses

Part One: Availability and Current Status of Parcel/address Data in Your County

	<i>Yes</i>	<i>No</i>
1. Does the county have parcel records for all county land?	21	3
Respondent detailed comments: a. County private land		

	<i>Yes</i>	<i>No</i>
2. Does the county have an address database covering the entire county?	9	15
Respondent detailed comments: a. They have addresses for all parcels with houses, but not those without houses		

	<i>Yes</i>	<i>No</i>
3. Does each parcel have a location address?		9

	<i>Parcel ID</i>	<i>Parcel Address</i>	<i>Other (specify)</i>
4. How are parcels identified in your county? Please check the appropriate box.	All		

5. Who (or which offices) are responsible for collecting parcel data?	Recorder's office for all counties
6. How do you determine addressing in urban areas of your county? How do you determine addressing in rural areas of your county?	<ul style="list-style-type: none"> a. We only use legal addresses unless owner provides a situs address. 911 initiatives have helped in producing usable addresses and are found in phone books. (We are very rural) b. Urban – Cities assign addresses to parcels as they are created; Rural – addresses assigned when parcel has residential use. c. Urban – Cities. Rural – county emergency services.
7. Who assigns address data in urban areas of your county? Who assigns address data in rural areas of your county?	<ul style="list-style-type: none"> a. We've never been involved from the county level. b. Cities in urban areas and GIS department for rural areas c. Addressing Coordinator (County)

	<i>Yes</i>	<i>No</i>
8. Are parcel and address data in your county stored in digital format?	15	9
9. If data are stored in digital format, beginning in which year is the digital data available?	The earliest is 1986, and the majority are mid and late 90's.	
Respondent detailed comments: a. On the process of switching from paper to ARC/INFO		

10. Type of the system	
<i>System Type</i>	<i>Number of Counties</i>
Arc/Info	6
Homegrown GIS	4
Homegrown tabular system	2
Other GIS systems	2
Other Tabular systems	6

11. When new parcel information comes in, how long does it take to update the information in your system/records? Please check the appropriate box.				
	<i>Daily Basis</i>	<i>Whenever New Information Comes In</i>	<i>Annually</i>	<i>Other</i>
	9	11	1	2
Respondent detailed comments: Some update the data on daily basis or whenever new information comes in, but it takes longer to get done.				

12. For such problems as parcel boundary overlaps, how does your county deal with them in your GIS or paper system?	<ul style="list-style-type: none"> a. Show the overlap. b. We show overlaps as computed. We show gaps similarly. c. We try to resolve them. The survey crew is called in to help at times.
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13. Are the following attributes of parcel data usually requested?
All the following attributes are usually requested: File Header, Parcel Outline (Polygon), Parcel Centroid, Parcel ID, Source Reference, Source Reference Date, Owner Type, Owner Name, Assessment, Tax Bill Mailing Address, Parcel Street Address, Subdivision Name, Parcel Area, Parcel Zoning, and Public Parcel Name.

14. Please indicate the major users of parcel/address data in your county			
<i>Major User?</i>			
	<i>Yes</i>	<i>No</i>	<i>Examples of users</i>
State Agencies	5		AGRC, Elections, USU Extension Service, USTC
Local Government	10		County, School District, Towns
Private Businesses (inc. utilities and title companies)	22		Title and Mortgage Companies, PacifiCorp, So Central Telephone, Countywide Realty, local appraisers.
Federal Government	2		BLM, Forest Service
Citizens	19		
Respondent details comments: a. The information is mainly used for county tax use.			

15. Please check how each customer retrieves parcel and address information from your office.					
Request Type	Through your County's Internet Portal	Through your County's automated dial-up system	By telephone	In-person request at your County's Recorder's or Assessor's Office	Request by Mail
# of Counties	5	4	18	19	5

16. What information do you provide through your Internet portal?	Parcel ID, address, value, owner
17. What information do you charge users for?	a. Maps, Parcel, Data Sheets b. Shape file c. Disks or hard copies of parcel information
18. What are your information charges or subscription costs? How much revenue does this bring in?	Revenue annually: 100, 400-500, a few thousand \$250 for parcel layer

19. If information is accessed through your county's dial-up system, by telephone, or travel to your office:	
a. Estimate the time spent satisfying each request	5 min, 20 Minutes, 1-2 hrs
b. How many people are needed to respond to these requests per week (full-time equivalent)?	One, one half, 7

Part Two: Assessment of Proposed Statewide Parcel/Address System

1. Please give one or two examples of multi-county projects(s) that involve data sharing of parcel and address data among counties.	<ul style="list-style-type: none"> a. RS 2477 roads – sharing technical info to keep data consistent county to county. b. Railroad conversion to bike trail. c. County boundary adjustment d. Tax assessment e. Mosquito and weed control f. Shared property between county boundaries.
2. Do you think a statewide parcel/address system could help the projects discussed in the questions above? Why?	<ul style="list-style-type: none"> a. Yes, I believe that parcel data would be better and more consistent if developed for sharing with public and with other agencies simply because of the scrutiny that would be inherent in that process. b. No. Service would be non-existent, data would be outdated, costs to county prohibitive, revenue loss to counties intolerable. c. Yes, the research could be done at the county on affected parcels. d. Not really. Things are best done when done closest to home or the project at hand.

3. Please rate the following proposed benefits as you think they would apply to the statewide parcel/address system.					
	<i>Strongly Disagree</i>	<i>Somewhat Disagree</i>	<i>Neutral</i>	<i>Somewhat Agree</i>	<i>Strongly Agree</i>
More convenient data access by users	2	3	2	4	3
Reduced delay in data access by users	3	2	1	4	4
Time savings of users in accessing and processing data	3	1	3	3	4
Time savings of county offices in handling data requests from users	3	4	2	3	2
Improved data accuracy, consistency and currency	4	2	3	2	3
Improved data security	4	2	2	4	2
Improved decision making by data users	2	2	3	3	4
Improved service quality to users/citizens	2	1	2	5	4
Cost savings of users in accessing and processing data	2	2	3	4	4
Cost savings of county offices in handling data requests from users	4	2	2	4	2
Improved speed and ability to respond to changing or increasing needs in parcel/address data sharing	2	2	2	3	4
Cost effectiveness in sharing parcel/address related systems and resources	2	1	3	4	4

4. Do you think there are some major risks/problems/obstacles in *creating* and *using* a statewide parcel/address system? (political, financial, security, social, etc.)

	<i>Agree</i>	<i>Disagree</i>	
	20	2	

Respondent detailed comments:

- e. Liability, accuracy, local public acceptance
- f. There are risks but they are not new risks
- g. The political aspect is one of too much “Big Brother”, and loss of privacy to the individual citizen. The cost to standardize data input would break the bank. The security of data provided at county level will not be matched at a state agency level. Data sales to third parties would be uncontrolled, and not protected by state. Post sale usage would be uncontrolled. County loses control immediately. Loss of revenue excessive. No accountability to the taxpayers for data use. All liability assigned to originator of data (us).
- h. Privacy – people don’t want their information all over the Internet, now they have to come in to the office to get the information. We want to service the title companies in their area. If it is easy for out-of-county title companies to get our county information, it may drive their local title companies out of business.
- i. Privacy. No motivation for Recorders to use the same systems. People only use data from local areas. Doesn’t know if the state system will be up-to-date, can’t sign off on the data. Revenue loss from statewide database.
- j. Financial burden on the county taxpayers if the state doesn’t cover the cost. Counties have already invested in the system. A statewide system will cause a loss in revenue for the county. Privacy issues - security issues if the public has access to all records.
- k. Support, but worries about the security, and doesn’t know for sure about the purposes of the system.
- l. Political, getting everyone to agree on what it should be.
- m. Liability, accuracy, local public acceptance.
- n. A statewide project can help county build their own parcel data systems.
- o. Your data wont be accurate or up-to-date

5. Please indicate how supportive you are of building a statewide parcel/address system, given the benefits, risks, and problems discussed above.

	<i>No Support at All</i>	<i>Somewhat No Support</i>	<i>Neutral</i>	<i>Somewhat Support</i>	<i>Strongly Support</i>
	3	4	3	7	5

Respondent detailed comments:

- a. They get revenue from their subscription online service and from people coming into the office and paying for copies and other things. The statewide database would threaten this revenue stream. They want to service their local area, and don't want to make it really easy for outsiders to get their information – they don't want local title companies driven out of business and don't want to violate their citizen's privacy.
- b. Privacy – the population doesn't want a mega-database, and generally they only use data from the county they're in. Most people that want the huge databases are commercial entities that reformat and sell the data. The county Recorder only knows that his own data is accurate and correct. Can't say what the information will be like in the state database. County has lots of parcels and adds thousands more a year. They have several thousands of new documents daily. How will that stay accurate in the state database? Their parcel and address information is copyright property of the county. They make the data for their own purposes, not for outsiders. They can't do IS for users that don't have their own IS staff to format data from different counties. They get a lot of revenue from the Internet subscription, the statewide database may threaten that. They can't stay revenue neutral without that revenue.
- c. Support if the expense is not an issue.