Appendix A. U.S. Geological Survey (USGS) Structured Interview Guide

The National Map Customer Requirements Questions

Interview/Focus Group Date:	Interviewer:	DE:
Respondent Name: F	Email:Pl	none:
Organization:	Position:	
Organizational Background		
1. Please describe your business/organization		
a. Responsibilities (land management, data creation, regulation, governance, etc)?		
b. Size (no. of employees), Budget for your area of responsibility, and geographic scope of your organization. (If nation-wide/ Agency-wide, which sub-agencies do you service?)		
c. Your role in the organization?		
d. Who are the major internal customers of GIS services within your agency?		
e. Who are your major external customers of GIS services outside your agency (e.g. state & local gov't, private sector entities)?		
f. Workforce sophistication – with technology/ GIS? (o	check one)	
 Highly advanced – GIS is actively used throughed 2. Sophisticated – GIS applications are developed to generally provided by a GIS support group. Intermediate – GIS is used in some parts of the GIS is being used in a limited part of the applications that use GIS Map user - We are not skilled in GIS but we use No opinion 	to support some business activities and organization and we are on a significant the organization. We do not create any of map products.	GIS analysis is growth trajectory. of our own software
 2. Which of the following most closely apply to your organization? Please check all that are significant functional areas that utilize GIS in your organization. Q a. Agricultural practices Q b. Climate change Q c. Defense and homeland security Q d. Economic development 	 e. Ecosystems, biodiversity conservation f. Energy and mineral reso g. Geography awareness (e h. Human health and the en i. Human services j. Infrastructure development maintenance k. Natural hazards assessment emergency response 	urces education) nvironment ent and

 O m. Recreation O n. Regulation of pollutants and other contaminants O n. Regulation of pollutants and other contaminants O n. Regulation of pollutants and other contaminants O n. Water quantity and quanty D n. Community development and growth management O n. Law enforcement 							
Business Requirements Focus							
3. Describe five business activities within your or information.a.	ganization the	at are highly	y dependant	on geospa	tial		
b.							
c.							
d.							
e.							
 4. Do any of these activities require that you accele boundaries (e.g. across State lines, across interdevelopment)? No Yes, please describe these activities and he you get the data you need? 	national lines	s for wate	rshed assess	ment, regi	onal		
5. Please describe your use of the following produ	cts and service	es from US	GS.	1			
5. Please describe your use of the following produ Geospatial Products or Services	cts and service Daily	weekly	GS. Monthly	Yearly	Don't		
				Yearly ②	Don't use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server	Daily S S	Weekly	Monthly		use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer	Daily S S S	Weekly 4 4 4	Monthly 3 3 3	② ② ② ②	use		
a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS)	Daily S S S S	Weekly 4 4 4 4 4	Monthly 3 3 3 3	② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store	Daily S S S S S	Weekly 4 4 4 4 4 4	Monthly 3 3 3 3 3 3	② ② ② ② ②	use ① ① ① ① ① ① ① ①		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map	Daily S S S S S S S	Weekly	Monthly	② ② ② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map g. 7.5 minute scanned topo map (DRG)	Daily S S S S S S S S S	Weekly 4 4 4 4 4 4 4 4 4 4 4	Monthly 3 3 3 3 3 3 3 3 3	② ② ② ② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map g. 7.5 minute scanned topo map (DRG) h. Orthoimagery	Daily	Weekly 4 4 4 4 4 4 4 4 4 4 4 4	Monthly 3 3 3 3 3 3 3 3 3 3	② ② ② ② ② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map g. 7.5 minute scanned topo map (DRG) h. Orthoimagery i. National Elevation Dataset (NED)	Daily	Weekly 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Monthly 3 3 3 3 3 3 3 3 3 3 3	② ② ② ② ② ② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map g. 7.5 minute scanned topo map (DRG) h. Orthoimagery i. National Elevation Dataset (NED) j. National LandCover Dataset (NLCD)	Daily	Weekly 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Monthly 3 3 3 3 3 3 3 3 3 3 3 3 3	② ② ② ② ② ② ② ② ② ② ②	use		
Geospatial Products or Services a. The National Map viewer b. The National Map seamless server c. The National Hydrographic Dataset (NHD) viewer d. Geographic Names Information System (GNIS) e. The USGS store f. 7.5 minute printed topographic map g. 7.5 minute scanned topo map (DRG) h. Orthoimagery i. National Elevation Dataset (NED)	Daily	Weekly	Monthly 3 3 3 3 3 3 3 3 3 3 3 3 3 3	② ② ② ② ② ② ② ② ② ② ② ②	use		

7. If you use scanned (digital) or printed USGS topographic maps how important are they to your work?
a. Very Important—mission critical. I couldn't do my work without this feature
b. Quite Important—mission relevant. I need it, but can make due without it
c. Somewhat Important—It's not always needed to complete the mission, but is helpful
d. Not Very Important—I use them from time to time, but they are not that important
e. I don't use them (nor does my agency)
8. Have you completed a formal assessment of your mission critical geospatial information needs? Is
there a report that you can share with us? (Make note of how to follow-up if can't get it live).
d. Not Very Important—I use them from time to time, but they are not that important e. I don't use them (nor does my agency) 8. Have you completed a formal assessment of your mission critical geospatial information needs? Is

to <u>your</u> these la Medium	Rate the borganizaryers as Hon (M). ase rank to Col. 9. E	11. What use consider to for the foll data layers mission cr	be lowing in continuation	mining backerder land	mally ise g to m ds?	y acc eosp eet y	ceptal atial your	ble	
9.	10.	Geospatial Data Layers	Daily or per	≤ 1	≤ 1	≤ 3	≤ 5	≤ 10	
DATA	TOPO		>10 transaction	mo	yr	vrs	yrs	yrs	
Rank	Rank		yrs	1110	yı.	yıs	y13	yıs	
		a. Orthoimagery	7	6	(5)	4	3	2	1
		b. Transportation – Public streets/roads	7	6	(5)	4	3	2	1
		c. Transportation – Airports	7	6	(5)	4	3	2	1
		d. Transportation – Railroads	7	6	(5)	4	3	2	1
		e. Transportation – Trails	7	6	(5)	4	3	2	1
	f. Transportation – Other routes such as forest roads generally closed to the public				(5)	4	3	2	①
	g. Vertical and horizontal control				(5)	4	3	2	1
		h. Pipelines and powerlines	7	6	(5)	4	3	2	1
		i. Structures – rural areas	7	6	(5)	4	3	2	1
		j. Structures – selected public buildings such as schools, hospitals, courthouse	7	6	(5)	4	3	2	①
		k. Structures – Urban area designation (tint)	7	6	(5)	4	3	2	1
		Land cover (i.e. vegetation, built, wetlands, grasslands)	7	6	(5)	4	3	2	①
		m. Vegetation – woodland tint (subset of landcover)	7	6	(5)	4	3	2	①
		n. Elevation	7	6	(5)	4	3	2	1
		o. Geographic names	7	6	(5)	4	3	2	1
		p. Boundaries - Public Land Survey System (1/4 section, section, township, range)	7	6	(5)	4	3	2	1
		q. Boundaries – Civil boundaries to include city, county, state, international	Ø	6	(5)	4	3	2	1
		r. Boundaries – Federal and Native American lands	7	6	(5)	4	3	2	①
		s. Hydrography – Surface water	7	6	(5)	4	3	2	1
		t. Springs and wells	7	6	(5)	4	3	2	①
		u. Physiographic feature names (mountain, valley, canyon, plain, etc.)	Ø	6	(5)	4	3	2	1

	v. Parcels	Ć.	7	6	(5)	4	3	2	1

12. For which layers do you need archival or historical data? (List all the letters from the table above for which such data is needed)

13. Rate each of the following on importance of the resolution/scale for which you need geospatial data whether or not you currently have the data.

	Very	Quite	Somewhat	Not Very	I don't
	Important—	Important—	Important—It isn't	Important—I	use them
	mission critical.	mission	always needed to	use them from	(nor does
C 4 - 1 14	I couldn't do my	relevant. I need	complete the	time to time, but	my
Geospatial Item	work without	it, but can make	mission, but it is	they are not that	agency)
	this feature	due without it	helpful	important	
a. Imagery: 6 inch	(5)	4	3	2	①
b. Imagery: 12 inch	(5)	4	3	2	1
c. Imagery: 1 meter	(5)	4	3	2	1
d. Imagery: 2.5 meter	(5)	4	3	2	1
e. Elevation: sub-meter	(5)	4	3	2	1
f. Elevation: 3 meter	(5)	4	3	2	1
g. Elevation: 10 meter	(5)	4	3	2	\odot
h. Elevation: 30 meter	(5)	4	3	2	①
i. Lines/Areas: 1:12,000+	(5)	4	3	2	①
j. Lines/Areas: 1:24,000	(5)	4	3	2	①
k. Lines/Areas: 1:63,360	(5)	4	3	2	1
1. Lines/Areas: 1:100,000	(5)	4	3	2	①

14. Please rate the importance of other geospatial data you use regularly.

11. I louse face the importance			- 0 1 -		
	Very	Quite	Somewhat	Not Very	I don't
	Important—	Important—	Important—It isn't	Important—I	use it
	mission critical.	mission	always needed to	use it from	(nor
Carmatial Data	I couldn't do my	relevant. I need	complete the	time to time,	does my
Geospatial Data	work without	it, but can make	mission, but it is	but it is not	agency)
	this data	due without it	helpful	that important	
a. Geology	(5)	4	3	2	①
b. Soils	(5)	4	3	2	1)
c. Utilities	(5)	4	3	2	1)
d. Zoning	(5)	4	3	2	1)
e. Bathymetry	(5)	4	3	2	①
f. Ecological Systems (e.g. oak woodland, swale	(5)	4	3	2	①
grassland, shrub steppe)					
g. Biodiversity (species and ecosystems at risk)	(5)	4	3	2	①
h. Ground water	(5)	4	3	2	①
i. Wetlands	(5)	4	3	2	①
j. Watershed boundaries	(5)	4	3	2	①
k. Land use	(5)	4	3	2	①
1. Flood zones	(5)	4	3	2	①

III. Other 1– prease list.	9	9	9	$\boldsymbol{\omega}$	U
n. Other 2– please list:	(5)	4	3	2	1
15. Please discuss the three m (letter from table) 15.1 Di	-	yers that you rate	ed in the table in qu	uestion 14.	
(letter from table) 15.2 D	iscussion:				
(letter from table) 15.3 D	iscussion:				
16. If you had three wishes for three to five years, what would a.		Map features, lag	yers, or other funct	ionality within	the next
b.					
c.					
17. The National Map as envi consistent base geographic benefits accrued by your of	data. If this vis	ion were fully ac	hieved, would ther		-
a. Budget or staff time saving					
b. New applications enabled:					
c. Time made available to fo	cus on analysis:				
d. Other:					
18. What geospatial data sets	do you acquire f	rom other provid	ers in order to com	nplete your mis	sion?
		a.2 Prov	rider		
		b.2 Prov	/1der		
c.1 Data set		c.2 Prov	rider		
10.11	a		0		

(4)

20. Question omitted from this version of interview guide

19. How do you modify USGS geospatial data that you receive?

m. Other 1– please list:

21.	When yo	u work	with data	from oth	er organi	zations	would y	ou prefer to:	
	a. downle	oad and	maintain	the data v	yourself (please o	discuss v	vhy	

1	•	.1 1	1 .	/ 1 1 1 1	•
h	00111 000000	through a xx	ah carriaga	(nlagga diganiga xx	hxi
1)	gain access	uniough a wi	SD SCLVICE	(please discuss w	IIV
	5			(presse sire sibb iii	 <i>y</i>

22. Question omitted from this version of interview guide

23. Rate each of the following in terms of mission importance.

	Very	Quite	Somewhat	Not Very	I don't
	Important—	Important—	Important—It	Important—I	use it (nor
Geospatial Products or	mission critical.	mission	isn't always	use it from	does my
_	I couldn't do my	relevant. I	needed to	time to time,	agency)
Services	work without	need it, but can	complete the	but it is not	
	this data	make due	mission, but it	that important	
		without it	is helpful		
a. Printed maps	(5)	4	3	2	1
b. Pre-formatted digital maps ready					
for download and printing	(5)	4	3	2	①
c. Online map viewing service	(5)	4	3	2	1
d. Online geospatial data access					
service such as web feature service	(5)	4	3	2	①
or web coverage service					
e. Geospatial data file	(5)	4	3	2	①
download/transfer service					

24. Are there geospatial web services that you currently use to meet business needs?

	Very	Quite	Somewhat	Not Very	I don't
	Important—	Important—	Important—It isn't	Important—I	use it (nor
Geospatial Products or	mission critical.	mission	always needed to	use it from time	does my
1 -	I couldn't do my	relevant. I need	complete the	to time, but it is	agency)
Services	work without	it, but can make	mission, but it is	not that	
	this data	due without it	helpful	important	
a. Geospatial One Stop	(5)	4	3	2	①
b. National Atlas	(5)	4	3	2	①
c. The National Map Viewer	(5)	4	3	2	①
d. USGS Seamless Server	(5)	4	3	2	①
E. Google maps/ Google	(5)	4	3	2	①
earth/ Microsoft Terraserver					
f. State map viewer/services	(5)	4	3	2	①
g. County/city map viewers	(5)	4	3	2	①
h. Geographic Names	(5)	4	3	2	①
Information System (GNIS)					
i. Other:	(5)	4	3	2	①
j. Other:	(5)	4	3	2	1

25. If other advanced products, services, geospatial data layers, or features existed as part of *The National Map*, please rate how important they would be to you.

Other advanced products, services,	Very	Quite	Somewhat	Not Very	Not
geospatial data layers, or features	Important	Important	Important	Important	Important
					at all
a. Nationwide transportation routes	(5)	4	3	2	①
b. Nationwide transportation mileposts	(5)	4	3	2	①
c. Nationwide addresses linked to streets	(5)	4	3	2	①
and/or structures					
d. 3D fly across the United States	(5)	4	3	2	1
e. Citizen volunteer contributions to <i>The</i>	(5)	4	3	2	①
National Map					
f. Permanent IDs on all features	(5)	4	3	2	1
g. Historical geospatial data retention	(5)	4	3	2	①
h. Application toolkit for value added use of					
The National Map data or services (i.e. a	(5)	4	3	2	①
software toolkit/viewer that can be customized					
to use with other's data, a plug and play front					
end)					
i. Advanced integrated data models (e.g.					
recognize linkages between transportation,	(5)	4	3	2	①
streams and bridge structures)					
j. Geospatial features with cartographic offsets	(5)	4	3	2	①
for improved published maps					
k. Mobile device application or mapping	(5)	4	3	2	①
services					

TOPOGRAPHIC AND DRG QUESTIONS (All should answer at least questions 27 and 39. Only skip others if digital and printed topos are NEVER used {Q5}—most people have an opinion about these questions anyway)

- 26. USGS may use commercial datasets for the production of topographic map products. Any use of these datasets for other purposes would be restricted. As a customer, what would the impact of these restrictions have on your mission accomplishment?
 - a. Minimal I have no plans to create derivative products or to redistribute any *The National Map* data
 - b. Not very important I may want to use *The National Map* data services in the future but have no concrete plans.
 - c. Somewhat important I would like to create value added products and services from these datasets but would find a way to use other sources for the licensed data.
 - d. Important I would routinely use *The National Map* data services and would find restrictions on reuse to have significant impacts on my organization.
 - e. Very important I have mission critical needs that would be addressed by *The National Map* data resources and I could not accept any use restrictions.

27. USGS acquires some data types from partners. Please rate how	Scale: ⑤ = Critically important		
important it is to you for USGS to implement a quality control	③ = Somewhat important		
program for each of the following layers?	① = Not very important		
a. Roads	5 4 3 2 1		
b. Hydrography (water features)	5 4 3 2 1		
c. Contours	5 4 3 2 1		
d. Boundaries	5 4 3 2 1		
e. Names of features	5 4 3 2 1		
C. I values of features			

28.	Do you have a requirement to create color separations from the digital topo map? For example, brown, blue, black, red and purple plates were created for the old topographic maps to support lithographic printing. a. No b. Yes. If yes, explain why:
29.	Would you accept lower quality maps in order to achieve a higher production rate for the new digital topo maps? Please pick the hypothetical production/quality tradeoff that best suits your needs. a. 55,000 quads in 10 years (highest quality) b. 55,000 quads in 3 years (lower quality) c. 10,000 high quality quads and 45,000 lower quality quads in 5 years
30.	. Would you prefer to immediately print a one year old map from the Internet that was "pre-made" or would you prefer to wait 20 minutes to have the map created and printed from the most current data available? Please rank in order of importance from 1= highest importance to 3 = lowest importance. a. Prefer to print immediately (created and staged as a digital file ready to print) b. Prefer to wait 20 minutes to get the most current data (map on the fly) c. Both
31.	 What online features do you need for designing and printing a topo map? Please <u>rank</u> in order of importance from 1= highest importance to 5 = lowest importance. a. Ability to control the print scale b. Ability to pick and choose layers to be printed c. Ability to select the area of interest to be the center of the map d. Ability to select multiple print formats such as letter, legal, or ledger with map frames designed for each page size e. Ability to tile a standard 7.5 minute quad for printing on a home printer
32.	Most existing USGS topographic maps are published on the NAD 27 datum, and do not have full UTM/USNG grid lines. How large of a problem is this to your organization? (pick one) _a. This is a significant problem, preventing mission-critical operations _b. This is a problem, but only in small ways or in unusual circumstances c. This is not a problem. Our work doesn't depend on printed grids and coordinates

a. \$0, b. \$10, c. \$15, d. \$20, e. \$25, f. \$30, g. \$35
34. Would you use a local vendor such as FedEx Kinkos and pay the current price of \$35 for a typical 24" x 36" map product? a. Yes, this is a good option for me b. No, my organization could print these in-house and usually we would c. No, we seldom or never use printed maps
35. Is it important that printed quads are available on different media types such as dimensionally stable paper and use water proof inks? a. Very importantb. Somewhat importantc. Not very importantd. Not important at all
36. Please rank the following quality control issues in their order of importance for <i>The National Map</i> databases and the digital topo quad and ortho-image products. Please rank in order of importance from 1= highest importance to 4 = lowest importance. a. Positional accuracy of features b. Attribute accuracy of features c. Completeness of features d. Currency (recent date) of features
37. USGS plans to make the new topo quad and image maps as enhanced digital (computer readable) maps. USGS may include such features as GeoPDF or TIFF file format options and print on demand from the Internet. The topo quad would be viewable by standard GIS software and geo-referenced so that it could be used as a backdrop to other GIS data. This new product would NOT be available as a lithographic hardcopy print. Instead, it would be plotted by the customer or through a value added service provider. Would you find a plotted map to be an acceptable alternative to the lithographic print that has been available in the past? a. Completely satisfied with this approach b. Generally satisfied with this approach c. Somewhat satisfied, I occasionally need lithographic prints d. Dissatisfied, I need lithographic prints regularly
38. One feature under consideration for the digital topo map is the ability to "mark" attribute features and to create updates with geographic coordinates. These markups could be imported into a GIS and maps could be plotted by the user showing these markups. Please rate the importance of this feature. a. Very important feature, I would use it regularlyb. Important featurec. Only somewhat important featured. Unimportant feature, I would seldom use it

39. How acceptable are the feature conflicts described and illustrated below to <u>your organization's</u> business requirements.

Scale:

③ = Fully Acceptable	Figure(s) or Illustration(s)	Feature Conflict
② = Can live with it		
① = Not acceptable		
3 2 1	a. Figure 1	Contours to Open Water
3 2 1	b. Figure 2	Contours to Natural Drains (Rivers – Streams)
3 2 1	c. Figure 3a and 3b	Contours to transportation (Roads, Railroads)
3 2 1	d. Figure 4a and 4b	Feature Overprints
3 2 1	e. Figure 5	Hydrography Stream to Orthophoto Image
3 2 1	f. Figure 6	Hydrography Lake to Orthophoto Image
3 2 1	g. Figure 7	County Boundary is incorrect

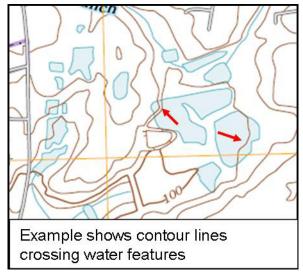


Figure 1

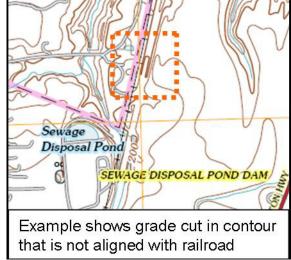


Figure3a

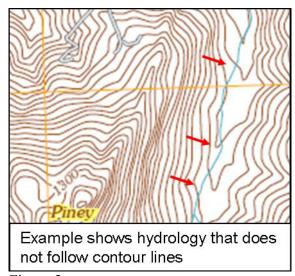


Figure 2

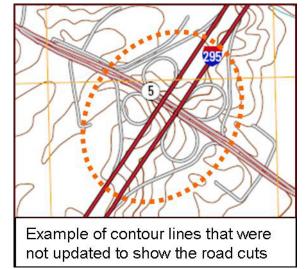


Figure 3b

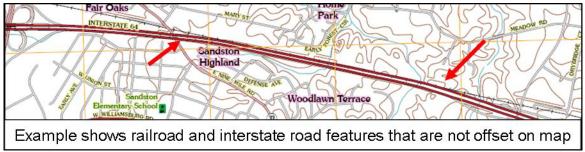


Figure 4a

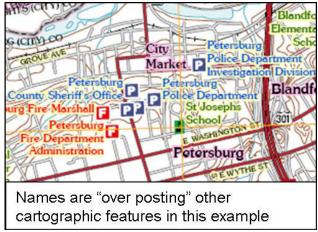
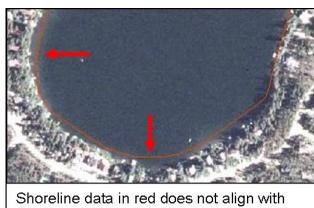


Figure 4b



Hydrography data shown in red does not match the newer ortho image.

Figure 5



the ortho image shoreline

Figure 6

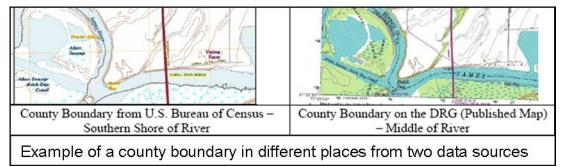


Figure 7

40. How acceptable is it to show features on a digital topo quad from smaller scale sources, such as
vegetation or urban area (impervious surface) tint from 1:100,000-scale Medium Resolution Land Cover
dataset? (see figure 8 below)
a. Very acceptable
h Accentable

40a. Why or why not? _____



Vegetation and urban "tint" image on left was created from the National Land Cover Data medium resolution data. The photo and topographic map images are for reference only.

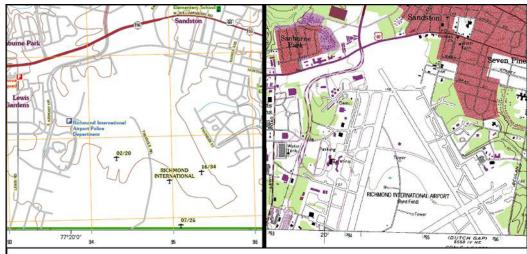
Figure 8.

- 41. Is it acceptable to publish some digital topo quads that are more feature rich than others? For example, sometimes data may be available in one area but features such as pipelines, power lines, airport runways, springs, and wells are missing in other areas. (Figure 9, New Map on left illustrates this missing data feature).
 - _a. Very acceptable
- b. Acceptable
- c. Not very acceptable

__c. Not very acceptable d. Not acceptable at all

d. Not acceptable at all

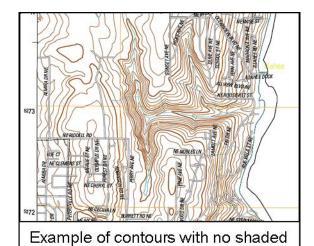
41a. Why or why not?



Example on left shows airports as point locations. Image on right shows airport detail.

Figure 9.

- 42. Which of the four options in Figure 10 below do you prefer to display topography and relief features on the digital topo quad? Identify your 1st and 2nd choices.
 - a. Contours on digital topo
 - b. Draping the imagery and line features over a 3-D relief model
 - c. Shaded relief with elevation color bands
 - d. Combination of shaded relief and contours
- e. Combination of drape with contours (no figure available-but like figure 10b with contours added)



relief (traditional topo map)

Figure 10a

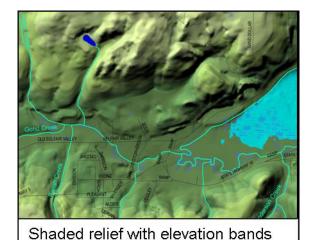
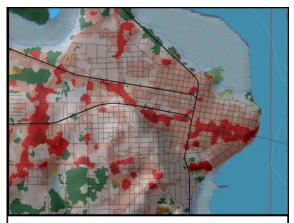


Figure 10c

(no contours)



Example of draped line features over 3-D relief model

Figure 10b



Combination of shaded relief with contours

Figure 10d

43. Would you find the level of metadata detail in figure 11 below to be sufficient for your purposes
of the printed map product (as shown below) if you also could get access to more metadata on
the <i>The National Map</i> website?
a. Too much detail. Why?

a. Too much detail. Why?	
b. Just right	
c. Not enough detail. Why?	

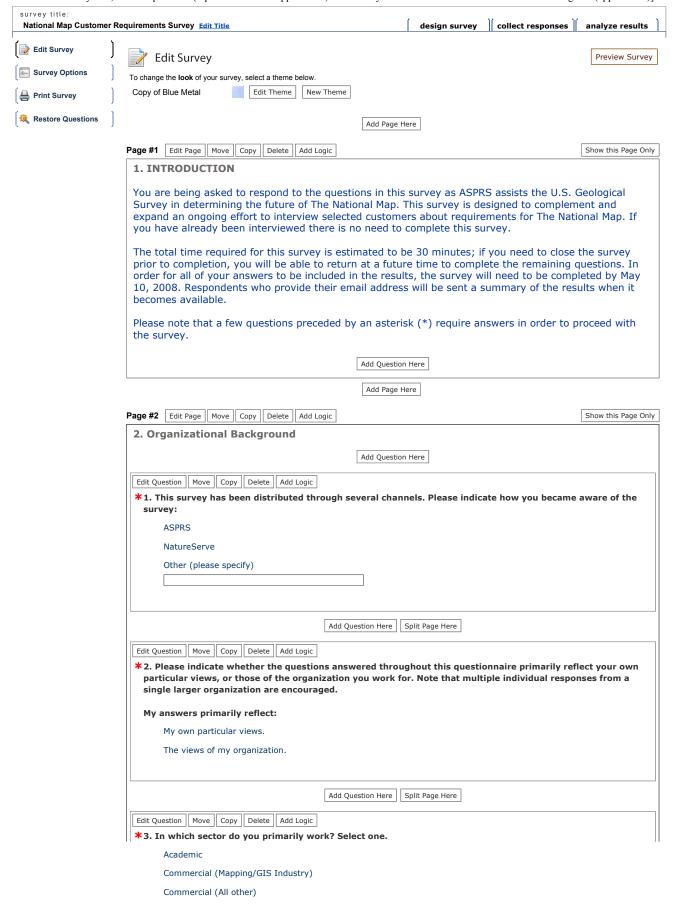
Produced by the Uni	ited States Geological Survey
This map was produced u March 05, 2008	ising map on demand technology
Datum NADS3 / WGS84	
1000-meter Universal Tra	ansverse Mercator grid, Zone 12
Imagery	USGS
Boundaries	U.S. Census Bureau National ParkService
	USDA Forest Service
	DLG-3/National Elevation Dataset
Hydrography	National Hydrography Dataset
Names Ged	ographic Names Information System
Structures	USGS Best Practices Dataset
Public Land Survey Syste	m Bureau of Land Management
	U.S. Census Bureau

Example of metadata representation to be displayed on digital topographic quad map.

Figure 11.

Appendix B. American Society for Photogrammetry and Remote Sensing (ASPRS) Survey Questions

[The ASPRS and the International Map Trade Association (IMTA) surveyed their memberships. These surveys were administered by the ASPRS by use of an online survey tool, and the questions (reproduced in this appendix B) were nearly identical to the USGS structured interview guide (appendix A)]



Other Not for Profit	
Other Not for Profit	
Local (County, Parish, Municipal) Government	
State, Provincial or Tribal Government	
Federal or National Government	
Other (please specify)	
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United States	
State- or Territory-wide	
Local Government	
Other (please specify)	
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ARIZONA	
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	NEW HAMPSHIRE	
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	NEW MEXICO	
	NEW YORK	
	NORTH CAROLINA	
	NORTH DAKOTA	
	NORTHERN MARIANA ISLANDS	
	OHIO	
	OKLAHOMA	
	OREGON	
	PALAU	
	PENNSYLVANIA	
	PUERTO RICO	
	RHODE ISLAND	
	SOUTH CAROLINA	
	SOUTH DAKOTA	
	TENNESSEE	
	TEXAS	
	UTAH	
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Agricultural practices	1st area	2nd area	3rd area	4th area	5th area
Climate change					
•					
Defense and homeland security					
Economic development					
Ecosystems, biodiversity and resource conservation					
Energy and mineral resources		1			
Geography awareness (education)					
Human health and the environment					
Human services					
Infrastructure development and maintenance					
Natural hazards assessment and emergency response					
Natural resource and land management					
Recreation					
Regulation of pollutants and other contaminants					
Water quantity and quality					
Community development and growth management					
Law enforcement					
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$f{\star}$ 3. How many employees are in the organization tha	t you work for	?			
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5-19					
20-49					
50-99					
99-199					
200-499					
>500					
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	provide GIS services to customers outside of your organization, please list the 3 – 5 major consume
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Highly	advanced – GIS is actively used throughout the organization for complex analysis.
Sophis	advanced – GIS is actively used throughout the organization for complex analysis. sticated – GIS applications are developed to support some business activities and GIS analysis is generally by a GIS support group.
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j. Structures – selected public buildings such as schools, hospitals, courthouse							
k. Structures – Urban area designation (tint)							
. Land cover (i.e. vegetation, built, wetlands,							
grasslands) m. Vegetation – woodland tint (subset of						1	1
andcover)							
n. Elevation							
o. Geographic names							
o. Boundaries - Public Land Survey System (section, township, range)							
q. Boundaries – Civil boundaries to include city, county, state, international							
r. Boundaries – Federal and Native American lands							
s. Hydrography – Surface water							
. Springs and wells							
u. Physiographic feature names (mountain, valley, canyon, plain, etc.) v. Parcels							
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12. Business Require	ements Focus c	ont.			
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1. Rate each of the foll	owing on importa	nce of the resolut	ion/scale for which	ch you need geosp	atial data?
	couldn't do my	Quite Important— mission relevant. I need it, but can make due without it	Somewhat Important—It isn't always needed to complete the mission, but it is helpful	Not Very Important—I use them from time to time, but they are not that important	I don't use them (nor does my agency)
a. Imagery: 6 inch					
b. Imagery: 12 inch					
c. Imagery: 1 meter					
d. Imagery: 2.5 meter					
e. Elevation: sub-meter					
f. Elevation: 3 meter					
g. Elevation: 10 meter					
h. Elevation: 30 meter					
i. Lines/Areas:					
1:12,000+ j. Lines/Areas:					
1:24,000 k. Lines/Areas:					
1:63,360					
I. Lines/Areas: 1:100,000					
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2. Please rate the impo		eospatial data you	ı use regularly?		
	Very Important—	Quite Important— mission relevant. I need it, but can	Somewhat Important—It isn't always needed to complete the mission, but it is helpful	Not Very Important—I use them from time to time, but they are not that important	I don't use them (nor does my agency)
a. Geology					
b. Soils					
c. Utilities					
d. Zoning					
e. Bathymetry					
f. Ecological Systems (e.g. oak woodland, swale grassland, shrub steppe) g. Biodiversity (threatened or at risk species and					
ecosystems)					
h. Ground water					
i. Wetlands					
j. Watershed boundaries					
k. Land use					

I. Flood zones

list below:					
n. Other #2 – please					
list below:					
Other (please specify)					
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3. Please discuss the		yers that you rate	ed in the table in q	uestion 2 above. F	Please include th
letter from table.	•	,	·		
Most important					
Second most important					
Third most important					
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4. If you had three w		onal Map features	s, layers, or other f	unctionality withi	n the next three
to five years, what we	ould you wish for?				7
Second					_ _
Third					_ _
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14. Business Requirements Focus co	ont.				
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1. If you currently modify USGS geospatia	al data to suppoi	rt your missio	n, which data	sets must be	e modified?
a Data set					
b Data set					
c Data set					
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2. Please describe the modifications requ	ired for each geo	ospatial data	set you listed	above (a, b	and c).
a Data set mods					
b Data set mods					
c Data set mods					
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15. Business Requirements Focus co	ont.				
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When you work with data from other or the control of the cont		uld you prefe	r to:		
download and maintain the data yourself					
gain access through a web service					
Please discuss why					
A	Add Question Here	Split Page Here			
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2. Please describe your use of the followi					
	Daily	Weekly	Monthly	Yearly	Don't use
a. The National Map viewer					
b. The National Map seamless server					
c. The National Hydrographic Dataset (NHD) viewer					
d. Geographic Names Information System (GNIS)					
e. The USGS store					
f. 7.5 minute printed topographic map					-
g. 7.5 minute scanned topo map (DRG)					
h. Orthoimagery					J [
i. National Elevation Dataset (NED)					
j. National LandCover Dataset (NLCD)		1			1

3. Please rate each of the	Very Important— mission critical. I couldn't do my	Quite Important— mission relevant. I	Somewhat Important—It isn't	Not Very Important—I use	
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	work without this feature	need it, but can make due without it	always needed to complete the mission, but it is helpful	them from time to time, but they are not that important	I don't use then (nor does my agency)
a. Printed maps					
b. Pre-formatted digital					
maps ready for					
download and printing					
c. Online map viewing					
service d. Online geospatial					
data access service					
such as web feature					
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coverage service e. Geospatial data file					
download/transfer					
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4. Are there geospatial	web services tha	nt you currently us	e to meet busines	s needs?	
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	Very Important— mission critical. I	Quite Important— mission relevant. I	Important—It isn't	Not Very Important—I use	I don't use then
	couldn't do my	need it, but can	always needed to complete the	them from time to	(nor does my
	work without this feature	make due without it	mission, but it is helpful	time, but they are not that important	agency)
a. Geospatial One Stop					
b. National Atlas					
c. The National Map					
Viewer					
d. USGS Seamless Server					
e. Google maps/ Google					
earth/ Microsoft f. State map services or					
viewers					
g. County or city map services or viewers					
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structures					
d. 3D fly across the United States					
e. Citizen volunteer contributions to The					
National Map					
f. Permanent IDs on all features					
g. Historical geospatial data retention					
 h. Application toolkit for value added resellers o The National Map data or services (e.g. a 	OΓ				
software toolkit that can be customized to use					
with other's data, a plug and play front end) i. Advanced integrated data models (e.g.					
recognize linkages between transportation,					
streams and bridge structures) j. Geospatial features with cartographic offsets					
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2. Would you use a local vendor such as Fed map product?	Ex Kinkos and pa	y the current pr	ice of \$35 for a ty	pical 24" x 30"
Yes, this is a good option for me				
No, my organization could print these in-ho	use and usually we	would		
No, we seldom or never use printed maps				
[Add	Question Here Split	Page Here		
	Question Here Spile	rage Here		
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3. Is it important that printed quads are ava and use water proof inks?	iliable on differen	t media types st	ich as dimension	ally stable paper
Very important				
Somewhat important				
Not very important				
Not important at all				
	Overskie z Hans Codis	Da a a Harra		
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4. Please rank the following quality control and the digital topo quad and ortho-image p		-		-
importance to 4 = lowest importance.				
	1-highest importance	2	3	4-lowest importance
Positional accuracy of features	·			·
Attribute accuracy of features			J [
Completeness of features				
Currency (recent date) of features				
Carrelley (recent date) of reactives				
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5. USGS plans to make the new topo quad a USGS may include such features as GeoPDF		_		
The topo quad would be viewable by standa	rd GIS software a	nd geo-referenc	ed so that it coul	ld be used as a
backdrop to other GIS data. This new produ Instead, it would be plotted by the custome			• .	
plotted map to be an acceptable alternative	-		•	-
Completely satisfied with this approach				
Generally satisfied with this approach				
Somewhat satisfied, I occasionally need lith	ographic prints			
Dissatisfied, I need lithographic prints regula	arly			
Add	Question Here Split	Page Here		

6. One feature under consideration for the digital topo map is the ability to "mark" attribute features and to create updates with geographic coordinates. These markups could be imported into a GIS and maps could be plotted by the user showing these markups. Please rate the importance of this feature.

Very important feature, I would use it regularly

Important feature

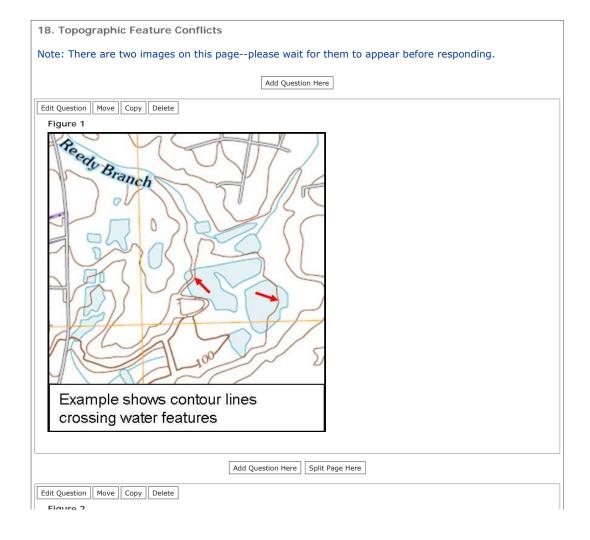
Only somewhat important feature

Unimportant feature, I would seldom use it

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Example shows hydrology that not follow contour lines	at does
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1. How acceptable are the feature conflicts illi business requirements.	lustrated above and described below to your organization's
	Fully Can live Not
	Acceptable with it acceptable No opinion
Figure 1: Contours to Open Water	
Figure 2: Contours to Natural Drains (Rivers –	
Streams)	
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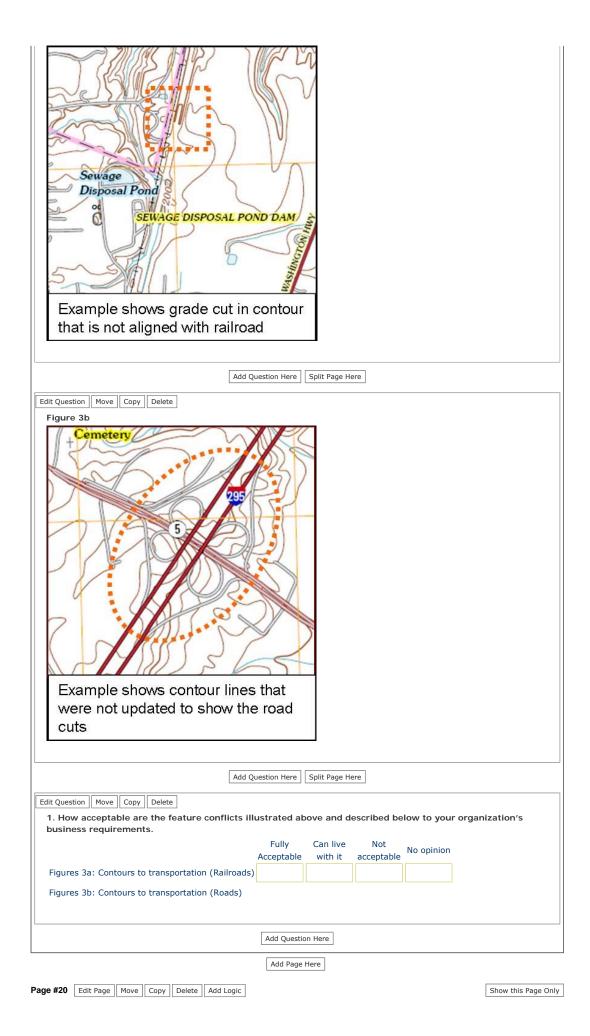
19. Topographic Feature Conflicts

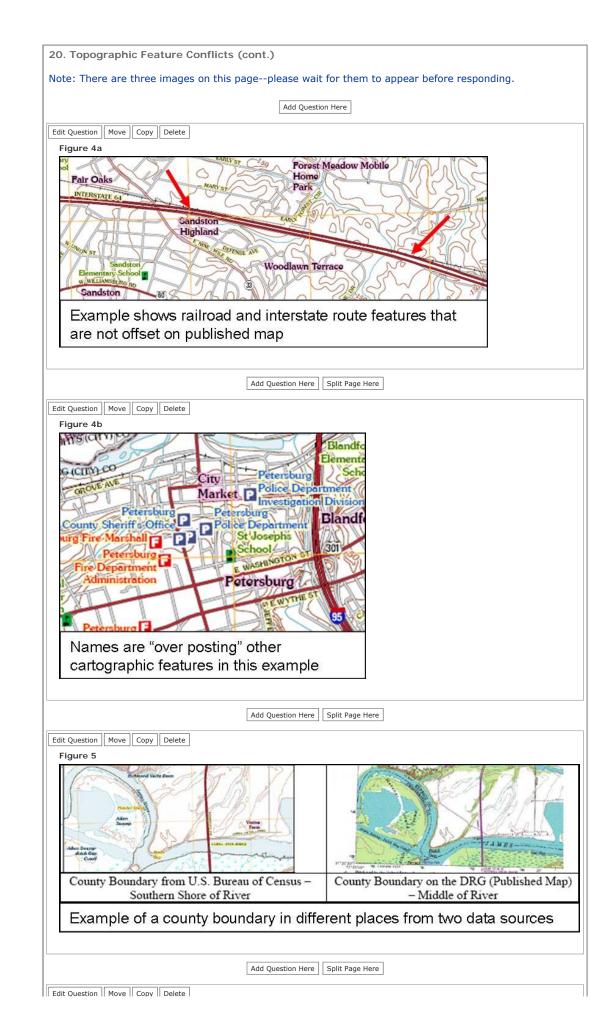
Note: There are two images on this page--please wait for them to appear before responding.

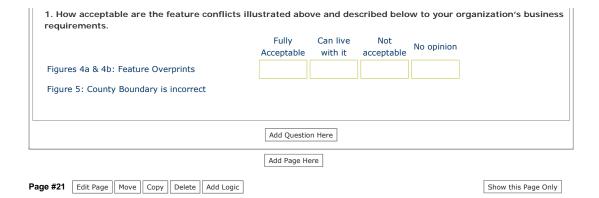
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Figure 33









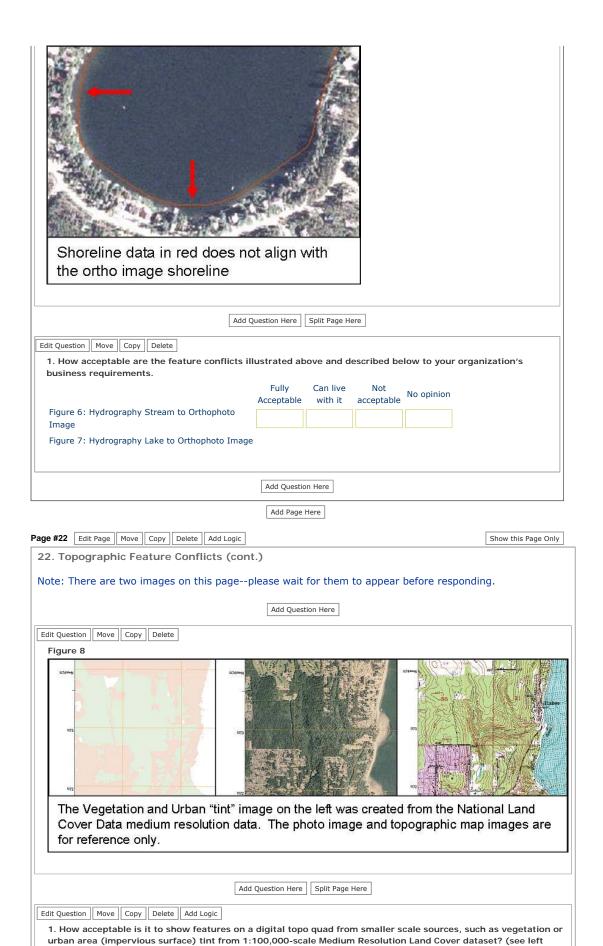


image in figure 8 above; middle and right images are provided for information only)

Very acceptable

Acceptable

Not very acceptable	
Not acceptable at all	
Why or why not?	
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Figure 9	
Sandation Server, Pirit Levis Jandens Discount Januarism (Ayers Paice Operation Op	
Example on left shows airports as point locations. Image on right shows airport detail.	
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2. Is it acceptable to publish some digital topo quads that are more feature rich than other sometimes data may be available in one area but features such as pipelines, power lines, a springs, and wells are missing in other areas. (The image on the left of Figure 9 illustrates feature). Very acceptable	irport runways,
Acceptable	
Not very acceptable	
Not acceptable at all	
Why or why not?	
any or any noce	
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23. Topographic Feature Conflicts (cont.)

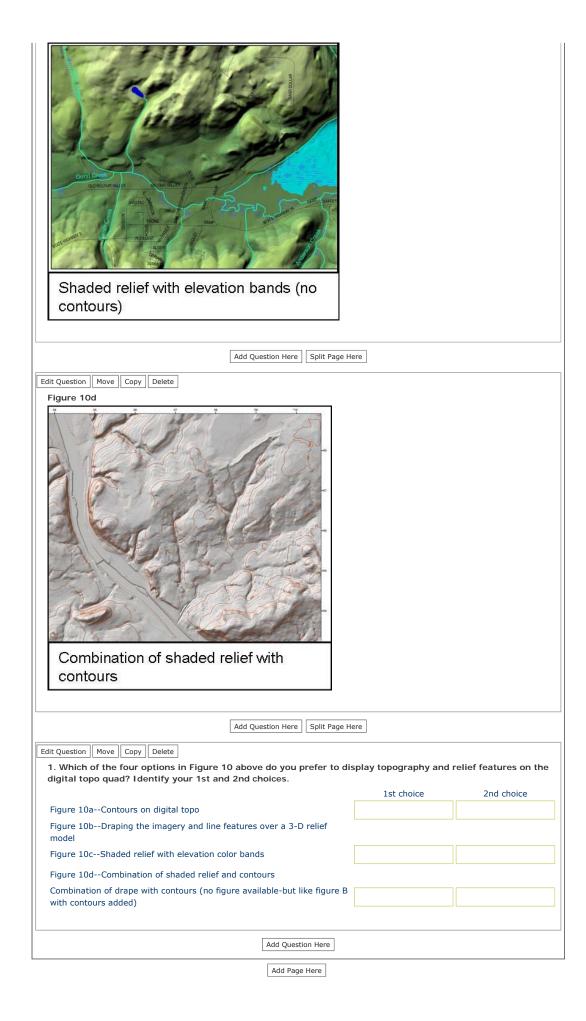
Note: There are four images on this page--please wait for them to appear before responding.

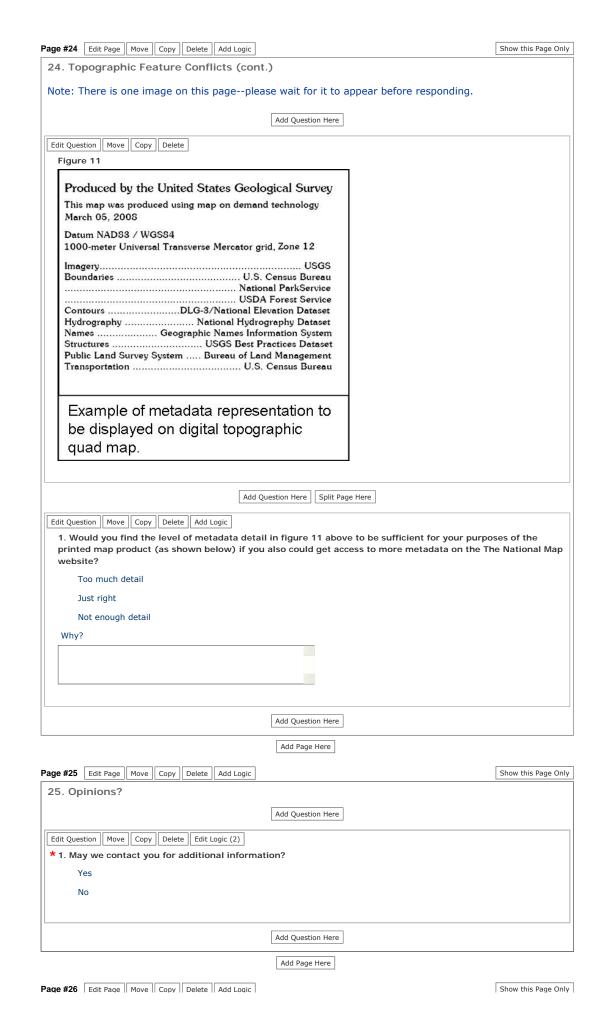
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Figure 10a







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27. THANK YOU			
	ers of The National Map who hused to access this site.	nave not completed this survey, p	olease feel fre
	discuss these issues in furthe	d you a summary of responses wer detail, or provide specific illust	
	e and interest.		
Thank you for your time			
Thank you for your time	Add Quest	ion Here	

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Appendix C. Environmental Systems Research Institute (ESRI) Survey Questions

[ESRI developed a short version of the USGS structured interview guide (appendix A) and released a 10-question survey (reproduced in this appendix C) to all ESRI customers residing in the United States and attending the 2008 ESRI International User Conference]

The National Map is currently undergoing a significant revision by the U.S. Geological Survey. Your response to the following questions will help the USGS evaluate the requirements for nationally consistent data which are needed to address your mission critical requirements.

1.	what best describes your organization?
\mathbf{O}	Local government
O	State government
O	Federal government
O	Private-sector land or resource management
O	Private-sector technology or GIS service provider
	Private-sector other
O	Not-for-profit organization
	Academic
O	Other
2.	What are the five most important areas in which your organization uses GIS? (Check up to five)
O	Agricultural practices
O	Climate change
O	Defense and homeland security
\mathbf{C}	Economic development
O	Ecosystems, biodiversity and resource conservation
O	Energy and mineral resources
\mathbf{O}	Geography awareness (education)
O	Human health and the environment
O	Human services
\mathbf{C}	Infrastructure development and maintenance
\mathbf{O}	Natural hazards assessment and emergency response
\mathbf{O}	Natural resource and land management
\mathbf{O}	Recreation
\mathbf{O}	Regulation of pollutants and other contaminants
\mathbf{O}	Water quantity and quality
O	Community development and growth management
\mathbf{O}	Law enforcement
O	Other (please specify)
3.	How often does your organization access geospatial data from outside of your jurisdiction (e.g.
	across state lines or international boundaries for watershed assessment, regional development)?
\mathbf{O}	Daily
\mathbf{O}	Weekly
O	Monthly
\mathbf{O}	Rarely
\mathbf{O}	Never

	The National Map provides access to a base of nationally consistent geospatial datasets. How would you rate the importance to your organization of these currently available datasets in the The National Map? Responses are: 5 - very important, 4 - important, 3 - somewhat important, 2 - less than important, 1 - not important. Boundaries - Civil boundaries to include city, county, state, international Boundaries - Federal and Native American lands Boundaries - Public Land Survey System (section, township, range) Ecological Systems (e.g. oak woodland, swale grassland, shrub steppe) Elevation Hydrography - Surface water Hydrography - Springs and wells Land cover (i.e. vegetation, built, wetlands, grasslands) Orthoimagery Parcels - privately owned Physiographic feature names (mountain, valley, canyon, plain, etc.) Structures - buildings in rural areas Structures - selected public buildings such as schools, hospitals, courthouse Transportation - public streets and roads Transportation - public streets and roads Transportation - airports Transportation - railroads Transportation - trails Utilities (local water, sewer, electrical, natural gas) Utilities (regional and interstate pipelines and powerlines)
	A limited set of additional data layers may be considered for inclusion in the next generation of <i>The National Map.</i> How would you rate the importance of including these potential new datasets? Responses are: 5 - very important, 4 - important, 3 - somewhat important, 2 - less than important, 1 - not important. Bathymetry Biodiversity (species and ecosystems at risk) Ecological Systems (e.g. oak woodland, swale grassland, shrub steppe) Flood zones Geology Ground water Land use Light Detection And Ranging (LiDAR data for detailed topography and other mapping activities) Parcels – privately owned Parcels – publicly owned Soils Transportation – other routes such as forest roads generally closed to the public Utilities (local water, sewer, electrical, natural gas) Vertical and horizontal control Zoning
6.	Complete the following: My organization would participate in a program to update <i>The National Map</i> if the U.S. Geological Survey (check one): _ provided an online "wiki" type application to edit geospatial content in <i>The National Map</i> . accepted digital files of new geospatial content.

ste	ovided the ability to digitally mark published topographic maps with edits to be sent to data ewards in states or the Federal government. on't know/Would not participate
Mc Th Th Th Na Ge Ge Ge	ow often do you use the following USGS services? Responses are: 1 - Daily, 2 - Weekly, 3 - Onthly, 4 - Rarely, 5 - Never. The National Map viewer The National Hydrography Dataset (NHD) viewer The USGS store That is a second of the control of
Ve	w important are digital or printed USGS topographic quadrangle maps to your work? ery Important - I couldn't do my work without topographic map products. uite Important - I need them, but can make do without it. omewhat Important - They are not needed but are helpful. ess than Important - I use them from time to time. ot Important - I don't use them (nor does my organization).
slig inte pro I I I	e USGS integrates data from many partner organizations. Most data is of high quality; some is ghtly lower quality. What best describes your attitude to a proposal to publish maps with a data egration rating from 1 to 3 as a means of dramatically increasing the U.S. topographic map oduction rate? can accept lower levels of data integration and feature richness as a reasonable tradeoff to accept lower levels of data integration and feature richness in most places but in some places require that published maps meet the highest standard of data integration. can not support anything less than the highest standard of data integration and I understand that his would have a significant impact on the production rate and availability of published maps.
	nat one feature, data layer, or function would you most like included in the next generation of <i>The tional Map</i> ? Why?