

Results of
A Citizen Survey on Land Use and Land Use Policies Affecting
Residential Development in
Watauga County, North Carolina

Prepared for
Southern Environmental Law Center

by
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I. Executive Summary

In December 2008 the Southern Environmental Law Center contracted with Smithson Mills, Director of the Center for Assessment & Research Alliances at Mars Hill College, to conduct research on attitudes towards land use and specific land use policies in Watauga County North Carolina. In February 2009, Mills commissioned a telephone survey of 402 randomly-selected registered voters in Watauga County on opinions and attitudes towards residential development and associated policies affecting land use in the County.

Results from 31 questions asked of 402 Watauga County residents measure strong and consistent support for policies that will protect and preserve open land in the County. Over 85% of respondents believe it is important to set aside land for conservation and open space. Levels of concern for preservation of open space, clean water, forestland, and farms are largely consistent across age groups, party identification, and geographic location within the County.

Questions about specific types of impacts from residential development show high levels of concern:

Are you concerned about...	Percent somewhat concerned or very concerned
Impact of residential development on access to hiking trails, fishing streams, or other recreational areas	69.4
Impact of residential development on the quantity and quality of open space in the rural areas of the county	70.7
Impact of residential development on water quality due to runoff into streams	82.6
Impact of residential development on the availability of groundwater for residents	79.3
Impact of residential development on the amount of forest land in Watauga County	76.4
Impact of residential development on the amount of agricultural land in Watauga County	64.2
Impact of residential development on the rural character of Watauga County	72.3
Impact of residential development on views from the Blue Ridge Parkway and other tourism destinations	77.8

A large majority believe there is a need to enact policies affecting residential development. Over 90% agree with policies that preserve areas adjacent to mountain streams. At least 80% support policies that protect wildlife corridors and wetlands, promote voluntary conservation easements, and preserve scenic views. Policies regarding access to trails and water have over 70% approval.

Respondents were asked about specific policies affecting large rural subdivisions. Over 80% support policies that protect natural areas for the recreation of their residents and that include stream banks in such recreation areas for fishing access and to protect water quality. Over 80% also agree that policies in such subdivisions should include any sensitive natural areas on the property and protect areas identified as priorities in a county greenway or open space plan.

When provided with information about landslide probabilities in Watauga County, residents seem willing to put in place many policies regarding landslide hazard mitigation. Almost everyone (95%) wants policies in place that ensure that home buyers are informed of the landslide hazards on their property. Meanwhile, another ninety percent agree with policies that would ensure that developments within mapped landslide hazard areas maintain or replant trees in order to stabilize the slopes.

Researchers made a concentrated effort to survey a sample of residents that reflects the demographic composition of the County as a whole. Respondents were from every voting precinct in the County. Respondents accurately reflected the makeup of the County in terms of County Commission voting district and party registration.

Survey results were analyzed for statistically meaningful variance by demographic characteristics of respondents. Party affiliation was the greatest determinant in variance of response rates, with registered Republicans slightly lagging in support for conservation efforts compared to Democrats and unaffiliated voters. However, it is important to note that majorities of Republicans, Democrats, and unaffiliated voters are concerned or very concerned about development issues and support policies that would mitigate negative aspects of development. Two issues where Republicans have more concern than Democrats are the impacts of residential development on the rural character of Watauga County and impacts on scenic views.

There are few statistically significant differences between respondents from different Commission Districts. Results show strong and consistent levels of concern about the impact of residential development regardless of respondents' Commission Districts.

II. Survey Results

Results from thirty one questions asked of 402 residents of Watauga County measure strong and consistent support for policies and conservation efforts that will protect and preserve open land in the County. Respondents were selected at random from a database of 34,727 registered Watauga County voters. The survey margin of error is 5% with a 95% confidence level. This means that for any single question, researchers are 95% certain that the results reflect opinions of all registered voters within a range of plus- or minus- 5% of the results measured from the survey sample.

Questions 1 to 10: Opinions on Development Patterns in Watauga County

Respondents were asked a series of questions regarding how they view the County’s preparedness for dealing with development issues. Results show that, while a plurality are unsure of how prepared Watauga County is for future development pressures, a substantial majority are concerned about conservation and the impacts of residential development.

1. On a scale of 1 to 5, how prepared is Watauga County for future residential development? 1 means being not at all prepared and 5 means being very well prepared.

		Frequency	Percent
Valid	Not at all prepared	46	11.4
	Not very prepared	87	21.6
	Neutral or Don't know	155	38.6
	Somewhat Prepared	79	19.7
	Very well prepared	35	8.7
	Total	402	100.0

2. On a scale of 1 to 5, how important is it for our community to set aside land for conservation and open space? 1 is not at all important and 5 is very important.

		Frequency	Percent
Valid	Not at all important	10	2.5
	Not very important	13	3.2
	Neutral / Don't know	36	9.0
	Somewhat important	72	17.9
	Very important	271	67.4
	Total	402	100.0

As shown in table two above, over 85% of respondents believe it is somewhat or very important to set aside land for conservation and open space. Subsequent questions about specific types of impacts show similar levels of concern:

Are you concerned about...	Percent somewhat concerned or very concerned
Impact of residential development on access to hiking trails, fishing streams, or other recreational areas	69.4
Impact of residential development on the quantity and quality of open space in the rural areas of the county	70.7
Impact of residential development on water quality due to runoff into streams	82.6
Impact of residential development on the availability of groundwater for residents	79.3
Impact of residential development on the amount of forest land in Watauga County	76.4
Impact of residential development on the amount of agricultural land in Watauga County	64.2
Impact of residential development on the rural character of Watauga County	72.3
Impact of residential development on views from the Blue Ridge Parkway and other tourism destinations	77.8

Full responses to questions in the table above are offered below:

3. On a scale of 1 to 5, how concerned are you about the impact of residential development on access to hiking trails, fishing streams, or other recreational areas?

		Frequency	Percent
Valid	Not concerned at all	23	5.7
	Not concerned very much	37	9.2
	Neutral / Don't know	63	15.7
	Somewhat concerned	106	26.4
	Very concerned	173	43.0
	Total	402	100.0

4. On a scale of 1 to 5, how concerned are you about the impact of residential development on the quantity and quality of open space in the rural areas of the county?

		Frequency	Percent
Valid	Not concerned at all	22	5.5
	Not concerned very much	30	7.5
	Neutral / Don't know	66	16.4
	Somewhat concerned	116	28.9
	Very concerned	168	41.8
	Total	402	100.0

5. On a scale of 1 to 5, how concerned are you about the impact of residential development on water quality due to runoff into streams?

		Frequency	Percent
Valid	Not concerned at all	18	4.5
	Not concerned very much	23	5.7
	Neutral / Don't know	29	7.2
	Somewhat concerned	76	18.9
	Very concerned	256	63.7
	Total	402	100.0

6. On a scale of 1 to 5, how concerned are you about the impact of residential development on the availability of groundwater for residents?

		Frequency	Percent
Valid	Not concerned at all	16	4.0
	Not concerned very much	19	4.7
	Neutral / Don't know	48	11.9
	Somewhat concerned	74	18.4
	Very concerned	245	60.9
	Total	402	100.0

7. On a scale of 1 to 5, how concerned are you about the impact of residential development on the amount of forest land in Watauga County?

		Frequency	Percent
Valid	Not concerned at all	16	4.0
	Not concerned very much	20	5.0
	Neutral / Don't know	59	14.7
	Somewhat concerned	123	30.6
	Very concerned	184	45.8
	Total	402	100.0

8. On a scale of 1 to 5, how concerned are you about the impact of residential development on the amount of agricultural land in Watauga County?

		Frequency	Percent
Valid	Not concerned at all	22	5.5
	Not concerned very much	30	7.5
	Neutral / Don't know	92	22.9
	Somewhat concerned	111	27.6
	Very concerned	147	36.6
	Total	402	100.0

9. On a scale of 1 to 5, how concerned are you about the impact of residential development on the rural character of Watauga County?

		Frequency	Percent
Valid	Not concerned at all	21	5.2
	Not concerned very much	25	6.2
	Neutral / Don't know	65	16.2
	Somewhat concerned	124	30.8
	Very concerned	167	41.5
	Total	402	100.0

10. On a scale of 1 to 5, how concerned are you about the impact of residential development on views from the Blue Ridge Parkway and other tourism destinations?

		Frequency	Percent
Valid	Not concerned at all	13	3.2
	Not concerned very much	28	7.0
	Neutral / Don't know	48	11.9
	Somewhat concerned	95	23.6
	Very concerned	218	54.2
	Total	402	100.0

Questions 11 through 16: Opinions on County Policies Affecting Residential Development

The majority of respondents agree that there is a need to enact policies affecting residential development. For example, ninety percent of respondents agree with policies which preserve areas adjacent to mountain streams. Most suggested policies, including those preserving wildlife habitats and corridors, promotion of voluntary conservation easements, and preservation of scenic views and vistas, receive at least eighty percent agreement. Policies regarding access to trails and water have seventy percent approval, while policies that create connections between existing parcels of open space have sixty percent approval.

Respondents were asked whether they agree, disagree, or don't know about the following policy options:

11. Policies developing or improving trail and water access

		Frequency	Percent
Valid	Agree	290	72.1
	Disagree	34	8.5
	No opinion / Don't know	78	19.4
	Total	402	100.0

12. Policies preserving important wildlife habitats and corridors for native plants and wetlands

		Frequency	Percent
Valid	Agree	353	87.8
	Disagree	26	6.5
	No opinion / Don't know	23	5.7
	Total	402	100.0

13. Policies preserving areas adjacent to mountain streams

		Frequency	Percent
Valid	Agree	367	91.3
	Disagree	13	3.2
	No opinion / Don't know	22	5.5
	Total	402	100.0

14. Policies creating connections between existing parcels of open space

		Frequency	Percent
Valid	Agree	248	61.7
	Disagree	54	13.4
	No opinion / Don't know	100	24.9
	Total	402	100.0

15. Policies promoting voluntary conservations easement that help land owners protect open space

		Frequency	Percent
Valid	Agree	333	82.8
	Disagree	19	4.7
	No opinion / Don't know	50	12.4
	Total	402	100.0

16. Policies preserving scenic views and scenic vistas

		Frequency	Percent
Valid	Agree	337	83.8
	Disagree	26	6.5
	No opinion / Don't know	39	9.7
	Total	402	100.0

Questions 17 through 21: Specific Policies Affecting Large Rural Subdivisions

Respondents were asked about potential policies affecting natural and open land on large residential developments in rural areas. A majority approves of policies which set aside natural areas; most of the policies have at least an eighty percent approval rate. The notable exception is a policy which would include the steepest slopes on the property in such recreation areas, with which a slimmer majority of only 55% of residents agree.

Respondents gave the following responses when asked if they agree, disagree, or don't know about specific policies affecting large rural subdivisions:

17. Set aside natural areas for the recreation of their residents

		Frequency	Percent
Valid	Agree	322	80.1
	Disagree	52	12.9
	No opinion / Don't know	28	7.0
	Total	402	100.0

18. Include stream banks in such recreation areas for fishing access and to protect water quality

		Frequency	Percent
Valid	Agree	353	87.8
	Disagree	30	7.5
	No opinion / Don't know	19	4.7
	Total	402	100.0

19. Include any sensitive natural areas on the property (like important habitat) in such recreation areas

		Frequency	Percent
Valid	Agree	328	81.6
	Disagree	43	10.7
	No opinion / Don't know	31	7.7
	Total	402	100.0

20. Include areas identified as priorities in a county greenway or open space plan in such recreation areas

		Frequency	Percent
Valid	Agree	328	81.6
	Disagree	40	10.0
	No opinion / Don't know	34	8.5
	Total	402	100.0

21. Include the steepest slopes on the property in such recreation areas

		Frequency	Percent
Valid	Agree	221	55.0
	Disagree	103	25.6
	No opinion / Don't know	78	19.4
	Total	402	100.0

Questions 22 through 26: Opinions on Development in Landslide Hazard Areas

When provided with information about landslide probabilities in Watauga County, residents seem willing to put in place many policies regarding landslide hazard mitigation. For example, almost everyone (95%) wants policies in place that ensure that home buyers are informed of the landslide hazards on their property. Meanwhile, another ninety percent agree with policies that would ensure that developments within mapped landslide hazard areas maintain or replant trees in order to stabilize the slopes.

22. Ensure that developments in mapped landslide hazard areas consult a qualified engineer

		Frequency	Percent
Valid	Agree	323	80.3
	Disagree	45	11.2
	No opinion / Don't know	34	8.5
	Total	402	100.0

23. Require special approvals for construction in landslide hazard areas

		Frequency	Percent
Valid	Agree	328	81.6
	Disagree	47	11.7
	No opinion / Don't know	27	6.7
	Total	402	100.0

24. Ensure that residential homesites are placed so as to minimize landslide hazards to safety and property

		Frequency	Percent
Valid	Agree	354	88.1
	Disagree	27	6.7
	No opinion / Don't know	21	5.2
	Total	402	100.0

25. Ensure that home buyers are informed of landslide hazards on their property

		Frequency	Percent
Valid	Agree	381	94.8
	Disagree	11	2.7
	No opinion / Don't know	10	2.5
	Total	402	100.0

26. Ensure that developments in mapped landslide hazard areas maintain or replant trees, which stabilize otherwise unstable slopes

		Frequency	Percent
Valid	Agree	370	92.0
	Disagree	19	4.7
	No opinion / Don't know	13	3.2
	Total	402	100.0

Demographic Data of Respondents

Researchers made a concentrated effort to survey a sample of Watauga County that reflects the demographic composition of the County as a whole. Half of respondents have lived in Watauga County for at least twenty years, while a quarter have only lived there for less than five years.

About a quarter each have their high school diploma, a bachelor's degree, or a graduate degree. Half of respondents estimate their home to be worth between \$200,000 and one million dollars,

and another 25% believe their homes to be worth between \$50,000 and \$100,000. Just over 64% of respondents have a household income of less than \$65,000 a year.

Responses to specific demographic questions are presented below:

27. How long have you lived in Watauga County?

		Frequency	Percent
Valid	1 to 5 years	88	21.9
	Over 5 years to 10 years	45	11.2
	Over 10 years to 20 years	60	14.9
	More than 20 years / entire life	204	50.7
	No Answer/Incomplete	5	1.2
	Total	402	100.0

28. In what employment sector do you work?

		Frequency	Percent
Valid	Health Services	18	4.5
	Local / State Government	15	3.7
	University	62	15.4
	County School District	21	5.2
	Retail	16	4.0
	Tourism	5	1.2
	Agriculture	9	2.2
	Real Estate	15	3.7
	Construction	35	8.7
	Retired	116	28.9
	Other	68	16.9
	No Answer/Incomplete	22	5.5
Total	402	100.0	

29. What is the highest level of education you have completed?

		Frequency	Percent
Valid	Middle school	7	1.7
	High school	111	27.6
	Associates degree	60	14.9
	Bachelors degree	88	21.9
	Graduate degree	100	24.9
	Professional certification	32	8.0
	No Answer/Incomplete	4	1.0
	Total	402	100.0

30. What do you estimate the value of your home to be?

		Frequency	Percent
Valid	50,000 or Under	7	1.7
	Between 50,001 and 100,000	111	27.6
	Between 100,001 and 200,000	60	14.9
	Between 200,001 and 500,001	88	21.9
	Between 500,001 and 1 million	100	24.9
	1 million or Above	32	8.0
	Do not own home	4	1.0
	Total	402	100.0

31. I'm going to read a list of income levels. Please stop me when you hear the level of income that represents your total household income.

		Frequency	Percent
Valid	\$20,000 and under	6	1.5
	\$35,000 and under	24	6.0
	\$50,000 and under	82	20.4
	\$65,000 and under	146	36.3
	\$80,000 and under	39	9.7
	\$95,000 and under	7	1.7
	\$150,000 and under	68	16.9
	\$250,000 and under	30	7.5
	Total	402	100.0

The research also strove to gather a sample that reflects the geographic and political diversity of the county's residents. Respondents were from every voting precinct in the county. When analyzed by county commission district, respondents accurately reflected the makeup of the county:

Respondents by County Commission District

District	Frequency	Percent of Survey Population	Percent of County Population (2008)
1	120	29.9	30
2	83	20.6	20
3	67	16.7	17
4	80	19.9	20
5	52	12.9	13
Total	402	100.0	100

Almost forty percent of respondents were registered as Republicans, 31.6% were registered as Democrats, with the remainder unaffiliated. This diversity mirrors the party affiliation of the county as a whole:

Political Party

Party ID	Frequency	Percent of Survey Population	Percent of County Population (2008)
Republican	160	39.8	39.5
Democrat	127	31.6	31.5
Unaffiliated	115	28.6	29
Total	402	100.0	100

III. Crosstab Analysis

Survey results were analyzed for statistically meaningful variance by demographic characteristics of respondents. In general, survey results were remarkably similar across age, party affiliation, area of residency in the County, and length of residency in the County.

The following section discusses those areas of divergence in response rates that are considered statistically meaningful or worthy of discussion as examples of consistency. It is important to note, however, that statistical validity for sub-groups of respondents is much lower than when analyzing the results for all 402 survey respondents.

Political Party

Party affiliation was the greatest determinant in variance of response rates. However, it is important to note that majorities of Republicans, Democrats, and unaffiliated voters are very concerned about development issues and support policies that would mitigate negative aspects of development.

As shown in the table below, the percentage of respondents who believe it is important or very important to set aside land for conservation and open space is 81.9% for Republicans, 86.6% for Democrats, and 88.7% for unaffiliated voters.

			36. Political Party			Total
			Rep	Dem	Unaffiliated	
2. On a scale of 1 to 5, how important is it for our community to set aside land for conservation and open space? 1 is not at all important and 5 is very important.	Not at all important	Count	9	1	0	10
		% within 36. Political Party	5.6%	.8%	.0%	2.5%
	Not very important	Count	7	3	3	13
		% within 36. Political Party	4.4%	2.4%	2.6%	3.2%
	Neutral / Don't know	Count	13	13	10	36
		% within 36. Political Party	8.1%	10.2%	8.7%	9.0%
	Somewhat important	Count	35	16	21	72
		% within 36. Political Party	21.9%	12.6%	18.3%	17.9%
	Very important	Count	96	94	81	271
		% within 36. Political Party	60.0%	74.0%	70.4%	67.4%
Total	Count	160	127	115	402	
	% within 36. Political Party	100.0%	100.0%	100.0%	100.0%	

Subsequent questions about specific types of impacts show similar levels of concern:

Are you concerned about...	Percent somewhat concerned or very concerned		
	Rep	Dem	Unaf
Impact of residential development on access to hiking trails, fishing streams, or other recreational areas	65.6	71.7	72.2
Impact of residential development on the quantity and quality of open space in the rural areas of the county	68.2	72.4	72.1
Impact of residential development on water quality due to runoff into streams	82.6	83.4	81.7
Impact of residential development on the availability of groundwater for residents	72.6	86.6	80.9
Impact of residential development on the amount of forest land in Watauga County	73.7	80.3	75.6
Impact of residential development on the amount of agricultural land in Watauga County	63.8	66.1	62.6
Impact of residential development on the rural character of Watauga County	74.4	67.7	74.8
Impact of residential development on views from the Blue Ridge Parkway and other tourism destinations	78.1	76.4	79.1

As shown in the table above, the two issues where Republicans have more concern than Democrats are the impact of residential development on the rural character of Watauga County and impacts on views from the Blue Ridge Parkway and other tourism destinations.

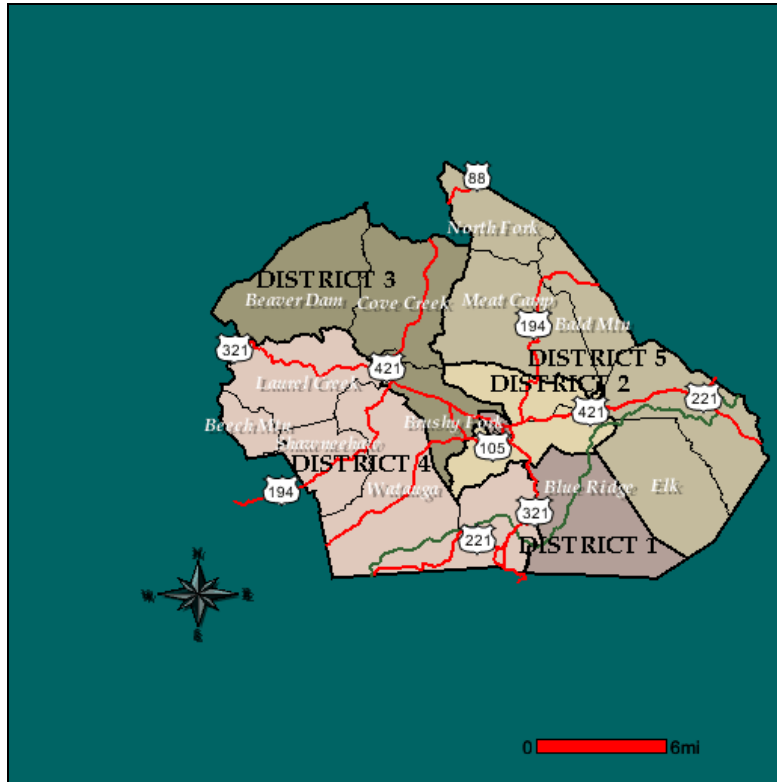
Similar degrees of variance by party affiliation are found throughout the survey. The table below shows levels of agreement with specific policy options on land use, by party identification:

Agreement with Specific Policy Options, by Party ID

Policy Type	Percent agreeing		
	Rep	Dem	Unaf
Policies developing or improving access to trails and fishing streams:	66.3	72.4	80
Policies preserving important wildlife habitats and corridors, native plants and wetlands:	83.1	89	93
Policies that protect water quality by preserving areas adjacent to mountain streams:	90.6	90.6	93
Policies creating connections between existing parcels of open space:	53.8	66.9	67
Policies promoting voluntary conservation easements that help land owners protect open space	81.9	82.7	84.3
Policies preserving scenic views and scenic vistas:	76.9	89.8	87
Policies for large rural subdivisions that set aside natural areas for the recreation of their residents	70	87.4	86.1
Policies for large rural subdivisions that include stream banks in such recreation areas for fishing access and to protect water quality	81.9	91.3	92.2
Policies for large rural subdivisions include any sensitive natural areas on the property (like important wildlife habitat) in such recreation areas	72.5	86.6	88.7
Policies for large rural subdivisions include areas identified as priorities in a county greenway or open space plan in such recreation areas	73.1	85	89.6
Policies for large rural subdivisions include the steepest slopes on the property in such recreation areas	49.4	57.5	60
Policies that ensure that developments in mapped landslide hazard areas consult a qualified engineer	75	81.1	87
Policies that ensure that residential homesites are placed in a way that minimizes landslide hazards to safety and property for themselves and others	80.6	92.9	93
Policies that ensure that home buyers are informed of landslide hazards on the property they are considering buying	93.8	94.5	96.5

Commission District

Watauga County is divided into five political districts for elections of County Commissioners. The County Commission districts are shown in the map below:



There are few statistically significant differences between respondents from different commission districts.

Levels of concern about residential development impacts by Commission District are shown below:

Are you concerned about...	Percent somewhat concerned or very concerned				
	Dist 1	Dist 2	Dist 3	Dist 4	Dist 5
Impact of residential development on access to hiking trails, fishing streams, or other recreational areas	68.3	63.8	64.2	77.5	75
Impact of residential development on the quantity and quality of open space in the rural areas of the county	65	72.3	73.1	72.6	75
Impact of residential development on water quality due to runoff into streams	75.9	82	83.6	86.3	92.3
Impact of residential development on the availability of groundwater for residents	78.3	77.1	85.1	85	80.8
Impact of residential development on the amount of forest land in Watauga County	72.5	74.7	80.6	76.3	82.7
Impact of residential development on the amount of agricultural land in Watauga County	60.9	62.6	71.7	62.5	67.3
Impact of residential development on the rural character of Watauga County	65.9	77.1	82.1	68.8	73.1
Impact of residential development on views from the Blue Ridge Parkway and other tourism destinations	80	79.5	71.7	78.8	76.9

The table below shows levels of agreement with specific policy options on land use, by County Commission District:

Agreement with Specific Policy Options, by County Commission District

Policy Type	Percent agreeing				
	Dist 1	Dist 2	Dist 3	Dist 4	Dist 5
Policies developing or improving access to trails and fishing streams:	73.3	69.9	59.7	78.8	78.8
Policies preserving important wildlife habitats and corridors, native plants and wetlands:	87.5	85.5	86.6	91.3	88.5
Policies that protect water quality by preserving areas adjacent to mountain streams:	87.5	94	91	93.8	92.3
Policies creating connections between existing parcels of open space:	66.7	63.9	56.7	56.3	61.5
Policies promoting voluntary conservation easements that help land owners protect open space	78.3	81.9	85.1	87.5	84.6
Policies preserving scenic views and scenic vistas:	90.8	84.3	76.1	82.5	78.8
Policies for large rural subdivisions that set aside natural areas for the recreation of their residents	87.5	79.5	77.6	77.5	71.2
Policies for large rural subdivisions that include stream banks in such recreation areas for fishing access and to protect water quality	91.7	91.6	89.6	86.3	73.1
Policies for large rural subdivisions include any sensitive natural areas on the property (like important wildlife habitat) in such recreation areas	84.2	85.5	82.1	78.8	73.1
Policies for large rural subdivisions include areas identified as priorities in a county greenway or open space plan in such recreation areas	85	84.3	85.1	76.3	73.1
Policies for large rural subdivisions include the steepest slopes on the property in such recreation areas	61.7	54.2	52.2	45	59.6
Policies that ensure that developments in mapped landslide hazard areas consult a qualified engineer	85.8	83.1	71.6	77.5	78.8
Policies that ensure that residential homesites are placed in a way that minimizes landslide hazards to safety and property for themselves and others	95.8	92.8	83.6	82.5	76.9
Policies that ensure that home buyers are informed of landslide hazards on the property they are considering buying	96.7	98.8	94	91.3	90.4

The results above show strong and consistent levels of concern about the impact of residential development regardless of respondents' Commission Districts.

Duration of residency in Watauga County

Compared to more recent arrivals, respondents that have resided in Watauga for more than twenty years are more decided in their opinion of whether the county is or is not prepared for future development. While a higher percentage of these respondents (34.8%) believe the County is not prepared for future residential development, a higher percentage (31.8%) believe the County is prepared. In other words, among people who have lived in the County the longest, there are fewer people with undecided opinions about this issue. Residents of more than twenty years are almost 50% more likely to be concerned about the impact of residential development on the amount of agricultural land in the County.

A sampling below of results cross-tabbed by length of residence demonstrates that most policies discussed enjoy slightly less support from respondents living in the County more than 20 years or their entire lives. Nevertheless, a majority of all categories of respondents agree with every proposed policy option:

Agreement with Specific Policy Options, by Length of Residence

Policy Type	Percent agreeing			
	1 to 5 years	>5 to 10 years	>10 to 20 years	>20 years or entire life
Policies developing or improving access to trails and fishing streams:	71.6	77.8	73.3	70.1
Policies creating connections between existing parcels of open space:	61.4	66.7	65	58.8
Policies for large rural subdivisions that set aside natural areas for the recreation of their residents	86.4	84.4	78.3	76.5
Policies for large rural subdivisions that include stream banks in such recreation areas for fishing access and to protect water quality	93.2	86.7	88.3	85.3
Policies for large rural subdivisions include any sensitive natural areas on the property (like important wildlife habitat) in such recreation areas	85.2	88.8	80	78.4
Policies that ensure that residential homesites are placed in a way that minimizes landslide hazards to safety and property for themselves and others	94.3	95.6	88.3	83.8

Analysis by Age

Age was not a major factor in measuring different response rates, and no consistency could be found in attitudes towards development from the very youngest age category (18 to 30) to the oldest category (Over 70). In a few instances the age of the respondent affected a variance in response rates. For example, not a single respondent under 40 years old had no concern about the impact of residential development on hiking trails, fishing streams and other recreational areas. However, almost ten percent of respondents in the 61 to 70 age group had no concern about this issue.

Discussion

Analysis of crosstabs shows that respondents, by a large margin, are concerned about residential development in Watauga County regardless of specific demographic characteristics. While some moderate consistency of variance is found by party affiliation, little consistency in response rates is detected by respondent Commission District, age, or length of residency in the County.

Appendix A: Survey Instrument

Hello, May I speak to Mr./Ms. {First Name, Last Name}? Hello, my name is _____ and I am assisting Mars Hill College in conducting a survey regarding open land and residential development in Watauga County. Would you be able to take approximately 8 minutes to answer some questions about this topic?

SECTION 1.

I would like to ask you some questions about development patterns in Watauga County. A recent study found that there were 2,700 residential lots already approved for future development in the County.

1. On a scale of 1 to 5, how prepared is Watauga County for future residential development? 1 means being not at all prepared and 5 means being very well prepared.

Not at all prepared	Not very prepared	Neutral or Don't Know	Somewhat prepared	Very well prepared
1	2	3	4	5

2. On a scale of 1 to 5, how important is it for our community to set aside land for conservation and open space? 1 is not at all important and 5 is very important.

Not at all important	Not very important	Neutral/ don't know	Somewhat important	Very important
1	2	3	4	5

On a scale of 1 to 5, how concerned are you about the following issues in regards to residential development in Watauga County? 1 means you are not concerned at all and 5 means you are very concerned.

How concerned are you about the impact of residential development on...

<u>Don't read answer choices unless respondent needs clarification</u>	Not concerned at all	Not concerned very much	Neutral/ don't know	Somewhat concerned	Very concerned
3. accessibility of hiking trails, fishing streams, or other recreational areas.	1	2	3	4	5
4. the quantity of open space in the rural areas of the county.	1	2	3	4	5
5. water quality due to runoff into streams.	1	2	3	4	5
6. the availability of groundwater for residents.	1	2	3	4	5
7. the amount of forest land in Watauga County.	1	2	3	4	5
8. the amount of agricultural land in Watauga County.	1	2	3	4	5
9. the rural character of Watauga County.	1	2	3	4	5
10. views from the Blue Ridge Parkway and other tourism destinations.	1	2	3	4	5

I will now ask your opinion about possible county policies affecting residential development in the county. Please tell me whether you agree, disagree, have no opinion, or don't know whether the following policies should be in place:

11. Policies developing or improving access to trails and fishing streams:	Agree	Disagree	No opinion Don't know
12. Policies preserving important wildlife habitats and corridors, native plants and wetlands:	Agree	Disagree	No opinion Don't know
13. Policies that protect water quality by preserving areas adjacent to mountain streams:	Agree	Disagree	No opinion Don't know
14. Policies creating connections between existing parcels of open space:	Agree	Disagree	No opinion Don't know
15. Policies promoting voluntary conservation easements that help land owners protect open space	Agree	Disagree	No opinion Don't know
16. Policies preserving scenic views and scenic vistas:	Agree	Disagree	No opinion Don't know

One policy option is to encourage or require developers in rural parts of the county to set aside some property to be left in natural areas for recreation and other values. Do you agree or disagree that the County should adopt policies for large rural subdivisions in the County that:

17. Set aside natural areas for the recreation of their residents	Agree	Disagree	No opinion Don't know
18. Include stream banks in such recreation areas for fishing access and to protect water quality	Agree	Disagree	No opinion Don't know
19. Include any sensitive natural areas on the property (like important wildlife habitat) in such recreation areas	Agree	Disagree	No opinion Don't know
20. Include areas identified as priorities in a county greenway or open space plan in such recreation areas	Agree	Disagree	No opinion Don't know
21. Include the steepest slopes on the property in such recreation areas	Agree	Disagree	No opinion Don't know

State officials have recently completed maps identifying areas within Watauga County that are at higher risk for landslides. According to the state, roughly 20% of the county is in the

highest risk category for triggering landslides. About 40% of the county is in the potential downhill path of landslides.

I will now ask your opinion about statements regarding development in these landslide hazard areas. You may answer “agree”, “disagree”, “no opinion”, or “don’t know” after each statement.

Do you agree or disagree with the county adopting policies that:

22. Ensure that developments in mapped landslide hazard areas consult a qualified engineer	Agree	Disagree	No opinion Don't know
23. Require special approvals for construction in landslide hazard areas	Agree	Disagree	No opinion Don't know
24. Ensure that residential homesites are placed in a way that minimizes landslide hazards to safety and property for themselves and others	Agree	Disagree	No opinion Don't know
25. Ensure that home buyers are informed of landslide hazards on the property they are considering buying	Agree	Disagree	No opinion Don't know
26. Ensure that developments in mapped landslide hazard areas maintain natural vegetation or replant trees, which stabilize otherwise unstable slopes	Agree	Disagree	No opinion Don't know

The last part of this survey asks for questions relating to you and your household.

27. How long have you lived in Watauga county?

- a. 1 to 5 years
- b. Over 5 years to 10 years
- c. Over 10 years to 20 years
- d. More than 20 years/entire life

28. In what employment sector do you work?

1. Health Services
2. Local/State Government
2. University
3. County School District
4. Retail
5. Tourism
6. Agriculture
7. Real Estate

8. Construction
9. Retired
10. Other

29. What is the highest level of education you have completed?

1. Middle school
2. High school
3. Associates degree
4. Bachelors degree
5. Graduate degree
6. Professional certification

30. Do you own a home? If so, what do you estimate the value of your home to be?

1. \$50,000 or Under
2. Between 50,001 and 100,000
3. Between 100,001 and 200,000
4. Between 200,001 and 500,000
5. Between 500,001 and 1 million
6. 1 million or Above
7. Do not own home.

31. I'm going to read a list of income levels. Please stop me when you hear the level of income that represents your total household income.

- [20] 20,000and under
- [35] \$35,000 and under
- [50] \$50,000 and under
- [65] \$65,000 and under
- [80] \$80,000 and under
- [95] \$95,000 and under
- [150] \$150,000 and under
- [250] \$250,000 and under
- [0] above \$250,000

Thank you for taking the time to complete our survey!

Editor's note: Results from the questions asked above were collated with demographic data already gathered about respondents, including party registration, precinct location, age, and County Commission voting district.

Appendix B: Basic Frequencies & Percentages

What is your gender?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	.2	.2	.2
Male	208	51.7	51.7	52.0
Female	193	48.0	48.0	100.0
Total	402	100.0	100.0	

1. On a scale of 1 to 5, how prepared is Watauga County for future residential development? 1 means being not at all prepared and 5 means being very well prepared.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not at all prepared	46	11.4	11.4	11.4
Not very prepared	87	21.6	21.6	33.1
Neutral or Don't know	155	38.6	38.6	71.6
Somewhat Prepared	79	19.7	19.7	91.3
Very well prepared	35	8.7	8.7	100.0
Total	402	100.0	100.0	

2. On a scale of 1 to 5, how important is it for our community to set aside land for conservation and open space? 1 is not at all important and 5 is very important.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all important	10	2.5	2.5	2.5
	Not very important	13	3.2	3.2	5.7
	Neutral / Don't know	36	9.0	9.0	14.7
	Somewhat important	72	17.9	17.9	32.6
	Very important	271	67.4	67.4	100.0
	Total	402	100.0	100.0	

3. On a scale of 1 to 5, how concerned are you about the impact of residential development on access to hiking trails, fishing streams, or other recreational areas?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not concerned at all	23	5.7	5.7	5.7
	Not concerned very much	37	9.2	9.2	14.9
	Neutral / Don't know	63	15.7	15.7	30.6
	Somewhat concerned	106	26.4	26.4	57.0
	Very concerned	173	43.0	43.0	100.0
	Total	402	100.0	100.0	

4. On a scale of 1 to 5, how concerned are you about the impact of residential development on the quantity and quality of open space in the rural areas of the county?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	22	5.5	5.5	5.5
Not concerned very much	30	7.5	7.5	12.9
Neutral / Don't know	66	16.4	16.4	29.4
Somewhat concerned	116	28.9	28.9	58.2
Very concerned	168	41.8	41.8	100.0
Total	402	100.0	100.0	

5. On a scale of 1 to 5, how concerned are you about the impact of residential development on water quality due to runoff into streams?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	18	4.5	4.5	4.5
Not concerned very much	23	5.7	5.7	10.2
Neutral / Don't know	29	7.2	7.2	17.4
Somewhat concerned	76	18.9	18.9	36.3
Very concerned	256	63.7	63.7	100.0
Total	402	100.0	100.0	

6. On a scale of 1 to 5, how concerned are you about the impact of residential development on the availability of groundwater for residents?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	16	4.0	4.0	4.0
Not concerned very much	19	4.7	4.7	8.7
Neutral / Don't know	48	11.9	11.9	20.6
Somewhat concerned	74	18.4	18.4	39.1
Very concerned	245	60.9	60.9	100.0
Total	402	100.0	100.0	

7. On a scale of 1 to 5, how concerned are you about the impact of residential development on the amount of forest land in Watauga County?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	16	4.0	4.0	4.0
Not concerned very much	20	5.0	5.0	9.0
Neutral / Don't know	59	14.7	14.7	23.6
Somewhat concerned	123	30.6	30.6	54.2
Very concerned	184	45.8	45.8	100.0
Total	402	100.0	100.0	

8. On a scale of 1 to 5, how concerned are you about the impact of residential development on

the amount of agricultural land in Watauga County?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	22	5.5	5.5	5.5
Not concerned very much	30	7.5	7.5	12.9
Neutral / Don't know	92	22.9	22.9	35.8
Somewhat concerned	111	27.6	27.6	63.4
Very concerned	147	36.6	36.6	100.0
Total	402	100.0	100.0	

9. On a scale of 1 to 5, how concerned are you about the impact of residential development on the rural character of Watauga County?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	21	5.2	5.2	5.2
Not concerned very much	25	6.2	6.2	11.4
Neutral / Don't know	65	16.2	16.2	27.6
Somewhat concerned	124	30.8	30.8	58.5
Very concerned	167	41.5	41.5	100.0
Total	402	100.0	100.0	

10. On a scale of 1 to 5, how concerned are you about the impact of residential development on views from the Blue Ridge Parkway and other tourism destinations?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not concerned at all	13	3.2	3.2	3.2
Not concerned very much	28	7.0	7.0	10.2
Neutral / Don't know	48	11.9	11.9	22.1
Somewhat concerned	95	23.6	23.6	45.8
Very concerned	218	54.2	54.2	100.0
Total	402	100.0	100.0	

11. Policies developing or improving trail and water access

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	290	72.1	72.1	72.1
Disagree	34	8.5	8.5	80.6
No opinion / Don't know	78	19.4	19.4	100.0
Total	402	100.0	100.0	

12. Policies preserving important wildlife habitats and corridors, native plants and wetlands

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	353	87.8	87.8	87.8
Disagree	26	6.5	6.5	94.3
No opinion / Don't know	23	5.7	5.7	100.0
Total	402	100.0	100.0	

13. Policies preserving areas adjacent to mountain streams

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	367	91.3	91.3	91.3
Disagree	13	3.2	3.2	94.5
No opinion / Don't know	22	5.5	5.5	100.0
Total	402	100.0	100.0	

14. Policies creating connections between existing parcels of open space

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	248	61.7	61.7	61.7
Disagree	54	13.4	13.4	75.1
No opinion / Don't know	100	24.9	24.9	100.0
Total	402	100.0	100.0	

15. Policies promoting voluntary conservations easement that help land owners protect open space

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	333	82.8	82.8	82.8
Disagree	19	4.7	4.7	87.6
No opinion / Don't know	50	12.4	12.4	100.0
Total	402	100.0	100.0	

16. Policies preserving scenic views and scenic vistas

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	337	83.8	83.8	83.8
Disagree	26	6.5	6.5	90.3
No opinion / Don't know	39	9.7	9.7	100.0
Total	402	100.0	100.0	

Questions 17 to 21 concern policies for large rural subdivisions in the County:

17. Set aside natural areas for the recreation of their residents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	322	80.1	80.1	80.1
Disagree	52	12.9	12.9	93.0
No opinion / Don't know	28	7.0	7.0	100.0
Total	402	100.0	100.0	

18. Include stream banks in such recreation areas for fishing access and to protect water quality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	353	87.8	87.8	87.8
Disagree	30	7.5	7.5	95.3
No opinion / Don't know	19	4.7	4.7	100.0
Total	402	100.0	100.0	

19. Include any sensitive natural areas on the property (like important habitat) in such recreation areas

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	328	81.6	81.6	81.6
Disagree	43	10.7	10.7	92.3
No opinion / Don't know	31	7.7	7.7	100.0
Total	402	100.0	100.0	

20. Include areas identified as priorities in a county greenway or open space plan in such recreation areas

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	328	81.6	81.6	81.6
Disagree	40	10.0	10.0	91.5
No opinion / Don't know	34	8.5	8.5	100.0
Total	402	100.0	100.0	

21. Include the steepest slopes on the property in such recreation areas

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	221	55.0	55.0	55.0
Disagree	103	25.6	25.6	80.6
No opinion / Don't know	78	19.4	19.4	100.0
Total	402	100.0	100.0	

Questions 22 to 26 pertain to policies on development in steep-slope areas.

22. Ensure that developments in mapped landslide hazard areas consult a qualified engineer

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	323	80.3	80.3	80.3
Disagree	45	11.2	11.2	91.5
No opinion / Don't know	34	8.5	8.5	100.0
Total	402	100.0	100.0	

23. Require special approvals for construction in landslide hazard areas

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	328	81.6	81.6	81.6
Disagree	47	11.7	11.7	93.3
No opinion / Don't know	27	6.7	6.7	100.0
Total	402	100.0	100.0	

24. Ensure that residential homesites are placed so as to minimize landslide hazards to safety and property

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	354	88.1	88.1	88.1
Disagree	27	6.7	6.7	94.8
No opinion / Don't know	21	5.2	5.2	100.0
Total	402	100.0	100.0	

25. Ensure that home buyers are informed of landslide hazards on their property

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	381	94.8	94.8	94.8
Disagree	11	2.7	2.7	97.5
No opinion / Don't know	10	2.5	2.5	100.0
Total	402	100.0	100.0	

26. Ensure that developments in mapped landslide hazard areas maintain or replant trees, which stabilize otherwise unstable slopes

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Agree	370	92.0	92.0	92.0
Disagree	19	4.7	4.7	96.8
No opinion / Don't know	13	3.2	3.2	100.0
Total	402	100.0	100.0	

27. How long have you lived in Watauga County?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 to 5 years	88	21.9	21.9	21.9
Over 5 years to 10 years	45	11.2	11.2	33.1
Over 10 years to 20 years	60	14.9	14.9	48.0
More than 20 years / entire life	204	50.7	50.7	98.8
N/A	5	1.2	1.2	100.0
Total	402	100.0	100.0	

28. In what employment sector do you work?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Health Services	18	4.5	4.5	4.5
Local / State Government	15	3.7	3.7	8.2
University	62	15.4	15.4	23.6
County School District	21	5.2	5.2	28.9
Retail	16	4.0	4.0	32.8
Tourism	5	1.2	1.2	34.1
Agriculture	9	2.2	2.2	36.3
Real Estate	15	3.7	3.7	40.0
Construction	35	8.7	8.7	48.8
Retired	116	28.9	28.9	77.6
Other	68	16.9	16.9	94.5
N/A	22	5.5	5.5	100.0
Total	402	100.0	100.0	

29. What is the highest level of education you have completed?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Middle school	7	1.7	1.7	1.7
High school	111	27.6	27.6	29.4
Associates degree	60	14.9	14.9	44.3
Bachelors degree	88	21.9	21.9	66.2
Graduate degree	100	24.9	24.9	91.0
Professional certification	32	8.0	8.0	99.0
N/A	4	1.0	1.0	100.0
Total	402	100.0	100.0	

30. What do you estimate the value of your home to be?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 50,000 or Under	7	1.7	1.7	1.7
Between 50,001 and 100,000	111	27.6	27.6	29.4
Between 100,001 and 200,000	60	14.9	14.9	44.3
Between 200,001 and 500,001	88	21.9	21.9	66.2
Between 500,001 and 1 million	100	24.9	24.9	91.0
1 million or Above	32	8.0	8.0	99.0
Do not own home	4	1.0	1.0	100.0
Total	402	100.0	100.0	

31. I'm going to read a list of income levels. Please stop me when you hear the level of income that represents your total household income.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	\$20,000 and under	6	1.5	1.5	1.5
	\$35,000 and under	24	6.0	6.0	7.5
	\$50,000 and under	82	20.4	20.4	27.9
	\$65,000 and under	146	36.3	36.3	64.2
	\$80,000 and under	39	9.7	9.7	73.9
	\$95,000 and under	7	1.7	1.7	75.6
	\$150,000 and under	68	16.9	16.9	92.5
	\$250,000 and under	30	7.5	7.5	100.0
	Total	402	100.0	100.0	

36. Political Party

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Republican	160	39.8	39.8	39.8
	Democrat	127	31.6	31.6	71.4
	Unaffiliated	115	28.6	28.6	100.0
	Total	402	100.0	100.0	

37. Age Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30	69	17.2	17.2	17.2
	31-40	32	8.0	8.0	25.1
	41-50	73	18.2	18.2	43.3
	51-60	84	20.9	20.9	64.2
	61-70	76	18.9	18.9	83.1
	Over 70	68	16.9	16.9	100.0
	Total	402	100.0	100.0	

38. Voting Precinct

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bald Mountain	9	2.2	2.2	2.2
	Beaver Dam	17	4.2	4.2	6.5
	Beech Mountain	2	.5	.5	7.0
	Blowing Rock	31	7.7	7.7	14.7
	Blue Ridge	60	14.9	14.9	29.6
	Boone 1	15	3.7	3.7	33.3
	Boone 2	17	4.2	4.2	37.6
	Boone 3	28	7.0	7.0	44.5
	Brushy Fork	29	7.2	7.2	51.7
	Cove Creek	21	5.2	5.2	57.0
	Elk	7	1.7	1.7	58.7

Laurel Creek	10	2.5	2.5	61.2
Meat Camp	18	4.5	4.5	65.7
New River I	14	3.5	3.5	69.2
New River II	28	7.0	7.0	76.1
New River III	41	10.2	10.2	86.3
Shawneehaw	9	2.2	2.2	88.6
Stony Fork	18	4.5	4.5	93.0
Watauga	28	7.0	7.0	100.0
Total	402	100.0	100.0	

39. Commission Area

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	120	29.9	29.9	29.9
	2	83	20.6	20.6	50.5
	3	67	16.7	16.7	67.2
	4	80	19.9	19.9	87.1
	5	52	12.9	12.9	100.0
	Total	402	100.0	100.0	