

June 7, 2005 Workshop Results (6/20/05 draft – Abi Convery & Lee R. Skabelund)

SUSTAINABLE DEVELOPMENT in FORESTLANDS:

Subdivision Planning/Design to Protect Forest Ecosystems and Water Quality in the Mountains of Virginia

Issue Identification (Themes or Categories)

Categories of issues and obstacles to clustering identified by stakeholders include:

Profit & Sales/Economics; Education & Marketing; Site Management/Green Infrastructure; Gray Infrastructure (utilities and roads); Access & Ownership; and Planning/Design (resource protection, design and regulations, and ordinances).

Categories of barriers & solutions to clustering identified by stakeholders include:

Regulation; Feasibility; and Education.

Categories of long-term management issues identified by stakeholders include:

Management; Enforcement; Sustainability/Economics/Land-Use.

Summary of Most Important Issues Identified by Stakeholders

Education/cooperation of landowners/homeowners/neighbors/property managers

- agree on goals
- overcome traditional views
- create consumer understanding and demand for cluster development, etc.

Planning and policy

- green infrastructure/low impact development
- need for zoning ordinance changes
- streamlining (time for review and approval)
- tax incentives
- education for politicians

Future use of land/forest

- lot size and timber quality (feasibility)
- inexperienced developers and designers
- professional management/common ownership and management
- accountability and monitoring

End of Workshop Discussion Notes:

Was there anything that surprised you about the issues identified?

We didn't talk much about conserving wildlife habitat or creating opportunities for recreation.

Because conserving productive forestland was the focus of the workshop, education regarding the need for and purpose of forest conservation is seen as very important. Local governments (those who review and approve proposed developments), developers, neighbors of proposed developments, and the larger public need to better understand why conserving productive forestland is so important, and how it can be integrally linked with other community goals. Policy-makers, local planning staff, and planners/designers and developers need good information to guide and support their work.

Ordinances/regulations and the planning process need to be improved to explicitly support resource conservation, working landscapes, and more compact, people-and-wildlife friendly developments. For example, conserving ag-forest resources and creating livable communities should be the default option (what developments are expected to do), not the exception to conventional practices.

Have we reflected the thoughts and sentiments of the larger public and potential homeowners?

We really cannot fully know what drives consumers (homebuyers) without asking them. We do know that different people will want to live in different types of settings and that they will want to manage their properties in the manner they see fit. We have a partial picture of what people like and where they like to live based upon the thoughts of those who typically support cluster-type developments, and from information gleaned from the literature, those we interact with, and where people buy homes. We know that many people like to be in the country – to see the beautiful views and be close to woodlands. We also know that many people (perhaps most) want privacy. A number of home buyers may not be interested in “compact development” because of the perception that it is too dense. Nevertheless, many people like the community-feel and aesthetic associated with compact traditional neighborhoods and small town settings, particularly neighborhoods with mature trees, well-landscaped yards and grounds, and well-kept homes (large or small). Additionally, many people want to take care of a very small yard and have easy access to open space for recreation, and would likely favor compact development with ready visual and physical access to conserved forestland, woods, and/or pastoral landscapes. With a high demand for homes in less-populated rural settings it is clear that many people have an interest in living “in the country” or “close to nature”. The question is: would they be amenable to occasional timber cutting near to their “home in the forest”?

What is the overall goal of cluster development?

Our goals include: Protecting resources which sustain life (retaining clean water and air and maintaining other ecological services); Providing for aesthetics, renewal, and ready access to places for recreation; Conserving farms and forests as working landscapes (large enough to remain viable in perpetuity). We are seeking to encourage a regional discussion about what lands should be protected and conserved to sustain various functions, and a site-specific assessment of what a site is best suited for. We want people to consider the potential for forestlands to be harvested in a sustainable (low-impact, sensitive, and regenerative manner). We want landowners, developers, planners and designers to really look at the functions of each site they work with – and the way it relates to its larger surroundings. We are seeking to maintain landscapes that can continue to provide food, fiber, clean water, and healthy places to live and enjoy. We want to support traditional livelihoods, especially where farmers and landowners desire to continue farming and forest management to provide income – to help pay their taxes and meet other financial needs – and to supply locally-grown products for building, furniture, food, and aesthetics. Because farming and forestry have worth beyond their bottom-line monetary values, maintaining these activities is very much a cultural (or personal and family related) decision.

What is sellable?

Large-lot developments in forested settings will remain attractive as they are primarily what people know and want (or think they want). Most people want privacy and the freedom to modify their living environments. Cluster development, better described in lay terms as small-town or traditional neighborhood development, is appreciated by many people – as shown by those wanting to live on and care for small lots in pedestrian-friendly neighborhoods.

What advice do you have for the project team? What are the important next steps?

Both top-down and bottom-up education efforts are needed. Support for and education of those who establish policies and those who review and approve developments is needed, while political support from local residents is likewise essential. Planners/designers need to approach policy-makers and say: “We really want to do sustainable forestland developments, let’s work together to make this happen”. Developers and landowners need reasons (requirements and incentives) to create high-quality, conservation-oriented developments. Because a minimum amount of inventory/analysis/ planning and creative design work is done, local governments must require “the essentials” for creating better residential developments and conserving productive farms and forestland. The Comprehensive Planning process presents an ideal venue for more in-depth discussions about specific ways to conserve working farms, woodlands, and forest landscapes.

The team is seeking to understand what is really needed – what we have learned so far is that what seems to be needed is: process changes, ordinance changes, specific education/outreach activities, technical support to assess existing policies and regulations and how these might be changed, planning support as landowners and developers and other professionals seek to create sustainable developments, and explicitness about what is meant by the terms being used, proposed conservation objectives, and methods to achieve the goals we set.

What do we do if the larger population doesn't really want agriculture and timber management?

We need to highlight what will be lost and what affect such a loss will have – for our collective quality of life (including values related to spiritual, recreation, and aesthetic needs and interests), economically (including the costs associated with flooding, poor water quality, and restoration requirements), socially (including opportunities for neighborly associations and exchanges at farmers markets and local wood, forest, and farm businesses), and ecologically (especially for specific forest-and-stream-dependent wildlife and the tempering of adverse climatic conditions).

What educational venues would you recommend?

*Board of Supervisors and Planning Commission work-sessions
Presentations at Homebuilders Association meetings
Virginia Association of Counties meeting
Displays & discussion sessions at local libraries
Booths at County Fairs
Greenways Conference*

Workshop Participants:

Virginia Tech

Lee R. Skabelund (Senior Researcher & Project Manager, Landscape Architecture Dept.)
Professor Jesse Richardson (Legal Expert, Urban Affairs & Planning Dept.)
Professor Diane Zahm (Planning Expert, Urban Affairs & Planning Dept.)
Pam Daniel (Graduate Research Assistant, Landscape Architecture Dept.)
Abigail Convery (Website Developer - compiled workshop data and prepared case study maps)

Partners

Joe Powers (Director, Montgomery County Planning & Zoning)
Meghan Dorsett (Comprehensive Planner, Montgomery County Planning & Zoning)
Craig Whittaker (Director, Giles County Planning & Zoning)
David Rundgren (Director, New River Valley Planning District Commission)
Britt Boucher (Professional Forester & President of Foresters Incorporated)
Gary Boring (USDA-NRCS, New River-Highlands Resource Conservation & Development)

Homebuilders Association - Real-Estate Agents, Developers & Builders/Contractors

Joyce Graham (Developer, Village at Tom's Creek; President, New River Land Trust)
Barbara Shaver (SAS Construction)
Ed Tuckler (Shelter Alternatives)
Sam Linkenhoker (McCraw Real-Estate, Blacksburg)

Surveyors, Engineers, Planners & Designers

Meredith Tremel (Civil Engineer, Village at Tom's Creek)
Dave Yolton (Surveyor, Newport, VA)
Michael Gay (Engineer, GKI)
Kevin Conner (Landscape Designers, GKI)
Jessica Emmitt (Engineering Intern, Anderson & Associates)
Steve Semones (Landscape Planner/Designer, Balzer Assoc.)
Mark Boenke (Engineer, Pillar Engineering & Surveying, P.C.)
Erin Craft (Engineering Intern, Pillar Engineering & Surveying, P.C.)
Margaret Bryant (Assistant Professor of Landscape Architecture)
Garrett Baker (Partner/Designer, Haile Landscape Design)

Foresters, Farmers & Virginia Extension Agents

Harry Groot (Next Generation Woods / BRFL-Cooperative)
Chuck Shorter (Farm Manager, former Montgomery County Supervisor)
Jim Clark (VDOF/Forester, Christiansburg)
David Richert (VDOF/Forester, Cedar Bluff)
Bob Boeren (VDOF/Forester, Salem) -
Luke Tushak (VDOF Intern, Salem) -
Barry Robinson (Extension/Farm Business Management Agent)

Stakeholder Discussion and Voting Methods

Stakeholders attending the meeting on June 7, 2005 were asked to respond to three questions concerning the promotion of sustainable development in the New River Valley. These questions were:

Q1: What are the key issues, obstacles, and challenges related to clustering residential development to retain intact forestland?

Q2: How do we change development patterns; what is it going to take to make clustering happen? How do we overcome the barriers during the planning/design/development process?

Q3: What are the critical longer-term management issues that will need to be addressed to retain intact forestland for its timber, non-timber, and ecological values? What must be done to successfully conserve productive and healthy forests over the very long term?

Participants were broken up into groups of approximately four people. Each group identified issues and concerns and then recorded (using 3-7 words) their ideas onto large note cards. Those cards were collected and placed at the front of the room where cards were clustered and categorized among major topics based upon where the audience felt the topics belonged. At this time, if the topics identified were unclear, authors were asked to clarify the points being made. Participants were next asked to vote as to which topics they felt were most “critical” to the process of promoting sustainable forestland development and to also cast votes for the topics they considered “important” to the process. Each voter was given 4 dots to place on the note cards associated with each question – one red (or yellow) dot which signified that the voter felt that the topic was “critical” to promoting sustainable development and 3 green (or blue) dots that signified that it was an “important” topic to the process. Voters could either place dots on major categories or within subcategory topics. Once voting had taken place, note cards were removed from the board and the discussion progressed to next question.

In this analysis, critical votes are weighted more heavily than important votes. Therefore, not only is data presented in its raw format, but also a weighting system was developed to determine the overall importance of topics. Green votes were given a weight of one; red votes were given a weight of two. Results for each category were then summed. The following pages provide the results.

Results for Question 1: What are the key issues, obstacles, and challenges related to clustering residential development to retain intact forestland?

Question One: Overall Categories

Stakeholders felt that “Education and Marketing” was the most critical category for cluster development in this area with 8 critical votes and 2 important votes. This was followed by “Profit and Sales” with 4 critical votes and 9 important votes (Table 1 and Figure 1). In order to interpret the importance of the category based upon the combination of votes (critical and important), each critical vote was weighted (wt.) with a value of 2 and each important vote was given a value of 1.

The results are shown in Table 1 and Figure 2. The “Education and Marketing” category ranks as the top category (18 wt.) followed closely by Profit and Sales (17 wt.). There appeared to be high concern for the categories of Resource Management (12 wt.), Ordinances (10 wt.) with areas such as Gray Infrastructure (3 wt.), Access to Common Areas/Ownership issues (2 wt.), and Other Planning and Development issues (2 wt.) ranking towards the bottom of the scale.

Question One: Subcategories

Taking a closer look within the overall categories results are as follows:

Education and Marketing

“Education and Marketing” had three categories that received important votes. There were no critical votes for “Education and Marketing”, although, as a category overall it received the highest number of critical votes (Table 1). Subcategories selected as important were: “Consumer Demand and Marketing” (3 votes), “Demand for Large Lots/ Privacy Issues” (2 Votes), and “Neighborhood Acceptance” (1 Vote) (Table 2).

Economics: Profit/Sales

There were two categories within the Economic subcategory that received votes. “Maximum Profit for Cluster Development” received 1 critical vote, while “Impact on Tax Base and Tax Incentives” received 2 important votes (Table 2).

Planning and Design: Resource Protection

“Low Impact Development” had 4 important votes, followed by “Viewshed Protection” with 2 votes. “Topography/Geology”, “Management Objectives” and “Fire Safety” received 1 vote each. There were no critical votes cast for the Resource Protection subcategories, although, as an overall category it received 6 important and 3 critical votes (Table 2).

Site Management and Green Infrastructure

For the “Green Infrastructure” category, “Community Forest Management” received a total of 3 important votes. “Minimum Lot Size that Timber Can Be Managed” received the only critical vote (1 vote) and 1 important vote. The subcategory “What is a Forest?” received 2 important votes, while “Common Space in Subdivisions” received 1 important vote (Table 2).

Planning and Design: Ordinances and Regulation

The subcategory “Accountability and Monitoring” had the only critical vote as well as 2 important votes. As far as elaboration on the definition of this subcategory there is no further information. “Low Impact Development” (e.g. protect watersheds) had a total of 4 important votes, followed by “Revise Ordinances/ Reduce Hassle to Do Better Developments” received 2 important votes. “Road Design Requirements” and “Existing Topography” both had 1 important vote each. The remaining 2 subcategories received no votes (Table 2).

Gray Infrastructure

The subcategories did not receive any votes, although overall, the category received 3 important votes (Table 2).

Planning and Design: Other

“Inappropriate Design and Development of Land” received 3 important votes as well as “What is a Forest?” (I.e. management parameters) received 2 important votes. The remaining 3 categories received no votes (Table 2).

Access and Ownership

Subcategories “Harvesting and Management Access” and “Public Access/ Green Space Network” each received 1 important vote. “Fire Fighting Access” received no votes (Table 2).

Question One: Combined Categories (Rank of Categories/Highest # of Votes)

In order to look at overall importance of the major categories, all votes within each overall category, including votes received for each subcategory were combined (Table 3 and Figure 3). The weighted method used the formula:

Total votes for each category = (overall category weighted red votes) + (overall category weighted green votes) + (weighted red votes for subcategory within that overall category) + (weighted green votes for subcategory within that overall category).

The results paint a slightly different picture. Although, “Education and Marketing” was still the most important category, “Economics” was replaced in the number two spot by “Site Management/ Green Infrastructure”, in particular there was more interest about how the community forest would be managed, then the subcategories for “Economics”. The rest of the categories only switched places in the ranking by one place, except for “Gray Infrastructure” which dropped by two due to the fact that none of its subcategories received a vote.

When votes are sorted by “the number of critical votes for the overall category (including subcategories) the results are the same (Table 3).

Question Two Results:

How do we change development patterns; what is it going to take to make clustering happen? How do we overcome the barriers during the planning/design/development process?

Question Two: Overall Categories

Three overall categories of concern were defined for this question: “Feasibility”, “Regulation” and “Education”. “Feasibility” had close to twice more critical votes (7) and important votes (6) allotted to it than the other two categories, “Regulation” (4 critical and 2 important) and “Education” (4 critical and 1 important) (Table 1; Figures 4 and 5).

Question Two: Subcategories

Taking a closer look within the overall categories results are as follows:

Feasibility

Questions over lot sizes, in particular how big can one go for resident use and what size area is necessary to maintain a sustainable forest ranked at the top with 1 important vote and two critical votes. The remaining subcategories did not receive any critical votes, although concern over “Poor Timber Quality” and “Tax Incentives” were thought to be important based upon the 4 important votes they each received. “Harvesting Conditions” and “Length of the Review Process” also ranked important with 2 and 3 important votes respectively. The remaining categories received one important vote or less. Please see Table 4. Combined weights mimicked these results.

Regulation

“Planning Policy” Received the most votes in this category with a total of 4 important and the only 4 critical votes. This was followed by “Zoning/ Ordinance” (in particular “minimum setback, side and back yards, lot size, etc.”) with 6 important votes. Again, how “green infrastructure” is incorporated into development plans is ranked 3rd with 5 important votes and “Common Ownership and Management” ranking 4th with 4 important votes. The remaining categories received 1 important vote or less and can be reviewed in Table 4. Combined weights mimicked these results.

Education

“Education of Potential Homeowners and Landowners” ranked number one using combined important and critical weights with 8 important votes, although having “experienced builders and designers” received 2 critical votes and 2 important votes, but it was not enough to place it over the 8-votes/ wt. for the top ranking category. “Agreeing on a Goal” and “Changing Traditional Attitudes” both had the same overall weight of 5, although “Changing Traditional Attitudes” had 1 critical vote and 3 important votes, whereas “Agreeing on a Goal” had no critical votes but 5 important. “Political Education” had 4 important votes and “NIMBYS” had none.

Question Two: Combined Categories

The results of combining subcategory votes with overall category votes yield the same ranking as earlier, “Feasibility” (42 wt.), “Regulation” (40 wt.) and “Education” (37 wt.) (Table 3 and Figure 6).

Question Three Results:

What are the critical longer-term management issues that will need to be addressed to retain intact forestland for its timber, non-timber, and ecological values? What must be done to successfully conserve productive and healthy forests over the very long term?

Question Three: Overall Categories

Stakeholders felt that “Management” was the most critical category for cluster development in this area with 12 critical votes and 1 important vote. “Economic Sustainability / Land Use” (3 critical, 4 important) and “Continuing Education” (2 critical, 4 important) both came in a distant second and third respectively. The final category, Enforcement fell last in rank with 3 important votes (Table 1; Figures 7 and 8).

Question Three: Subcategories

When taking a closer look within the overall categories to get a better idea at what exactly stakeholders are concerned with, results are as follows:

Management

Three subcategories were tied based upon their overall weight (7). The first subcategory, “Who is the Manager? Professional Forester? HOA?” ranked number one based upon its 2 critical votes and 3 important votes. The second ranked subcategory focuses on the economics and long-term management of a cluster development, in particular maintenance of private infrastructure over time and where the money comes from. This topic received 5 important votes and 1 critical vote. “Forest Management/ Stewardship Plan” ranked as third (overall weight = 7) with no critical votes, but 7 important votes. “Turnover of Ownership” received an overall weight of 3, but had the final 1 critical vote and 1 important vote, although it did have a critical vote it still ranked lower than the “Forest Management/ Stewardship Plan” because of overall weight calculated. The remaining subcategories had overall scores of 2 or less (Table 5).

Economic Sustainability/Land Use

None of these subcategories received critical votes. “Incentives and Conservation Easements” ranked as the highest subcategory with 4 important votes, followed by “No Future Subdividing/Conservation Easements” (3), “Public vs. Private” (2) and “Generate Income to Help Pay Taxes” (1) (Table 5).

Continuing Education

“Educating Homeowners/Property Managers” ranked the highest in this category with 12 important votes. None of the subcategories received critical votes. “Cooperation / Consideration

of Neighboring Landowners” ranked a distant second with 5 votes and the final category, “Critical Issue Identification” received no votes (Table 5).

Enforcement

None of the subcategories received critical votes in this category. “Accountability / Monitoring” received 4 important votes and ranked the highest among subcategories. “Enforcement Issues” (2 votes) and “Zoning Re: Sprawl” (1 vote) completed the Enforcement category (Table 5).

Question Three: Combined Categories

When votes were weighted and results from subcategories within each overall category combined (Formula 1) for question 3, the overall categories exhibited a similar pattern although “Continuing Education” ranks higher (now in the number 2 ranked position) than “Economic Sustainability/Land Use” (Ranked 3rd) when the subcategory results are combined with overall results (Table 3 and Figure 9).

Discussion

It is important to note that individuals mentioned in the closing discussion that the issues summarized on note cards were those that initially stood out to conference attendees as each question was discussed. Because many of the participants were not familiar with the entire process involved with cluster development for the conservation of productive forestland, there may in fact be issues that would be seen to have more weight or importance once the process of actually trying to create a cluster development is undergone. Essentially, “The devil is in the details”. From the results, it appears that initial concerns lay in the following two questions 1) Is there a market out there for cluster development in this area?; and, 2) Can cluster development associated with harvestable forestland be sold to the public? It appears that most participants feel that much work still needs to be done to raise the public’s awareness of this type of development. Education and Marketing rank as number one for Question 1 and education is highly rated in questions 2 and 3 as well. It also appears that overall it must be profitable for the stakeholders involved. In other words, issues which substantially affect “Profit and Sales” will be viewed as either essential or very important.

Tables

Table 1: Tally of votes for overall categories only (no subcategories included).

Question	Category	# Important Votes	# Critical Votes	Weighted Important Votes	Weighted Critical Votes	Combined Weighted Importance and Critical Votes
1	Education/Marketing	2	8	2	16	18
1	Economics: Profit / Sales	9	4	9	8	17
1	Planning/Design: Resource Protection	6	3	6	6	12
1	Site Management / Green Infrastructure	6	2	6	4	10
1	Planning/Design: Ordinance/Regulations.	5	1	5	2	7
1	Gray Infrastructure	3	0	3	0	3
1	Planning/Design: Other	2	0	2	0	2
1	Access/Ownership	2	0	2	0	2
2	Feasibility	6	7	6	14	20
2	Regulation	2	4	2	8	10
2	Education	1	4	1	8	9
3	Management	1	12	1	24	25
3	Economic Sustainability/ Land Use	4	3	4	6	10
3	Continuing Education	4	2	4	4	8
3	Enforcement	3	0	3	0	3

Table 2: Question 1 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
1	Education & Marketing	Consumer Demand/ Market	3	0	0	3	0	3
		Demand For Large Lots / Privacy	2	0	2	2	0	2
		Public Acceptance Of Cluster Density	0	1	0	0	2	2
		Neighbors Acceptance	1	0	0	1	0	1
		Education/What Is A Forest?/ Educating On LID	0	0	3	0	0	0
		Getting Homeowners To Buy In - Dealing With Multiple Owners	0	0	0	0	0	0
		Neighborhood Objection To Harvesting	0	0	0	0	0	0
1	Economics: Profit / Sales	Impact On Tax Base / Tax Incentives	2	0	2	2	0	2
		Max Profit For Development	0	1	2	0	2	2
		Location, Location.	0	0	0	0	0	0
		Marketability Of Cluster Development (including affordability)	0	0	2	0	0	0
		Profitability Of Forest Management	0	0	0	0	0	0

Table 2 Continued: Question 1 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
1	Planning & Design: Resource Protection	Low Impact Development (LID) (e.g. protect watersheds)	4	0	0	4	0	4
		Protecting Viewshed Into & From	2	0	0	2	0	2
		Establishing Management Objectives	1	0	0	1	0	1
		Implement Fire Safety Development	1	0	0	1	0	1
		Topography/Geology (steep slopes, Karst, watersheds, etc.)	1	0	0	1	0	1
		Does Cluster Development In Low Permeability Do Something To Runoff?	0	0	0	0	0	0
		Rainwater Runoff	0	0	0	0	0	0
1	Site Management / Green Infrastructure	Future Use Of Forest	0	2	0	0	4	4
		Community Forest Management	3	0	0	3	0	3
		Minimize Lot Size On Which Timber Can Still Be Managed.	1	1	0	1	2	3
		What Is A Forest?	2	0	0	2	0	2
		Common Space In Subdivisions	1	0	0	1	0	1
		Invasive Plants And Animals	0	0	0	0	0	0
	Property Rights-Paradigm Shift	0	0	0	0	0	0	

Table 2 Continued: Question 1 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
1	Planning & Design: Ordinance/ Regulation	Accountability/ Monitoring	2	1	0	2	2	4
		Revise Ordinances / Reduce Hassle To Do Better Development	2	0	0	2	0	2
		Existing Topography	1	0	0	1	0	1
		Road/Design Requirements	1	0	0	1	0	1
		Criteria For Footprint Development	0	0	0	0	0	0
		Have And Stick To Good Ordinances	0	0	0	0	0	0
1	Gray Infrastructure	Availability Of Utilities	0	0	0	0	0	0
		Development Costs for Infrastructure	0	0	2	0	0	0
		Lack Of Policy For New Sewer Options	0	0	1	0	0	0
		Septic / Sewer (initial cost, maintenance, failures)	0	0	3	0	0	0
1	Planning & Design: Other	Inappropriate Land Development.	3	0	0	3	0	3
		What Is A Forest? (mngt. parameters)	2	0	0	2	0	2
		Architecture (style)	0	0	0	0	0	0
		Private Streets	0	0	0	0	0	0
		Protecting Slopes To Gain Access	0	0	0	0	0	0
1	Access & Ownership	Public Access/ Green Space Network	1	0	2	1	0	1
		Harvesting and Management Access	1	0	0	1	0	1
		Fire Fighting Accessibility	0	0	0	0	0	0

Table 3: Weighted results for general categories. These results are votes given to overall category and the subcategories within that overall category.

Question	Category	Weight of Important Votes for Subcategory	Weight of Critical Votes for Subcategory	Weight of Important Votes for Overall Category	Weight of Critical Votes for Overall Category	Number of Important Votes for Overall Category	Number of Critical Votes (Combined Overall Category)	Weighted Importance and Critical Votes (Combined Overall Category)
1	Education/Marketing	6	2	2	16	8	9	26
1	Site Management / Green Infrastructure	7	6	6	4	13	5	23
1	Economics: Profit/Sales	2	2	9	8	11	5	21
1	Planning & Design: Resource Protection	9	0	6	6	15	3	21
1	Planning/Design: Ordinance/Regulations	6	2	5	2	11	2	15
1	Planning/Design: Other	5	0	2	0	7	0	7
1	Access/Ownership	2	0	2	0	4	0	4
1	Gray Infrastructure	0	0	3	0	3	0	3
2	Feasibility	18	4	6	14	24	9	42
2	Regulation	22	8	2	8	24	8	40
2	Education	22	6	1	8	23	7	37
3	Management	21	8	1	24	22	16	54
3	Continuing Education	15	2	4	4	19	3	25
3	Economic Sustainability/ Land Use	10	0	4	6	14	3	20
3	Enforcement	7	0	3	0	10	0	10

Table 4: Question 2 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
2	Feasibility	Lot Sizes? Maximum Requirement For Resident Use-Minimum Necessary To Have Sustainable Forest	1	2	2	1	4	5
		Poor Timber Quality	4	0	0	4	0	4
		Tax Incentives	4	0	0	4	0	4
		Something "New" Takes Longer to be Reviewed	3	0	0	3	0	3
		Inoperable Harvesting Conditions	2	0	0	2	0	2
		Funds / Investor	1	0	0	1	0	1
		Public Utilities	1	0	0	1	0	1
		Soil/ Topography Unacceptable	1	0	0	1	0	1
		VDOT Regulations	1	0	0	1	0	1
		Cost of Zoning Variances (planning/design costs)	0	0	0	0	0	0
		Design Fees- Niche Market	0	0	0	0	0	0
		Logging Noise	0	0	0	0	0	0
		Market Value Appraisals	0	0	0	0	0	0
		Septic Systems	0	0	0	0	0	0

Table 4 Continued: Question 2 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
2	Regulation	Planning Policy	4	4	2	4	8	12
		Zoning Ordinance (including minimum setback, side and back yards, lot size, etc.)	6	0	3	6	0	6
		Green Infrastructure Approach to Development Plans	5	0	0	5	0	5
		Common Ownership and Management	4	0	0	4	0	4
		County Planning Orientation	1	0	0	1	0	1
		Public Review	1	0	0	1	0	1
		Regional Planning Orientation	1	0	0	1	0	1
		Regulation Changes (subdivision & zoning)	0	0	0	0	0	0
2	Education	Education of Potential Homeowners and Neighboring Landowners	8	0	2	8	0	8
		Lack of Experienced Builders / Designers	2	2	2	2	4	6
		Reluctance to Change / Traditional-Cultural Disinclination / Change Consumer	3	1	4	3	2	5
		Agreeing on the goal	5	0	0	5	0	5
		Education of Reviewers and Approvers / Political Education	4	0	2	4	0	4
		NIMBYS (definition?)	0	0	0	0	0	0

Table 5: Question 3 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
3	Management	Management-Cash Flow/Maintenance of Private Infrastructure (roads, septic, etc.) / Long Term Management / Stability / Strong HOA w/ Fees to Manage	5	1	5	5	2	7
		Common Areas Managed by Professional Forest Management Firm/HOA / Who is Manager?	3	2	3	3	4	7
		Forest Management / Stewardship Plan	7	0	2	7	0	7
		Turnover of Ownership	1	1	0	1	2	3
		Increase Forest Product Quality	2	0	0	2	0	2
		Catastrophic Event (fire / disease of forest)	1	0	0	1	0	1
		Management Objectives	1	0	0	1	0	1
		Money from Harvest (who gets it?)	1	0	0	1	0	1
		Public verses Private	0	0	0	0	0	0
		Uncertainty of Timber Markets	0	0	0	0	0	0

Table 5 Continued: Question 3 subcategory results. The number of important votes (green dots), number of critical votes (red dots) and number of index cards that had the same subcategory written on them for each subcategory. Important and critical votes were weighted 1 and 2 respectively for each vote cast for that subcategory. Weighted votes were then summed across subcategories to determine overall importance of subcategory.

Question	Category	Subject	# Important Votes	# Critical Votes	# Index Cards	Weighted Important Votes	Weighted Critical Votes	Total Weighted Important & Critical Votes
3	Economic Sustainability/Land Use	Incentives / Conservation Easements	4	0	2	4	0	4
		No Future Subdividing / Conservation Easements	3	0	2	3	0	3
		Public verses Private	2	0	0	2	0	2
		Generate Income to Help Lot Owner Pay Taxes	1	0	0	1	0	1
3	Continuing Education	Education of Homeowner and Property Managers / Continuing Homeowner Education	12	0	2	12	0	12
		Cooperation and Consideration of/with Neighboring Farmers/Landowners	3	1	0	3	2	5
		Critical Issue Identification	0	0	0	0	0	0
3	Enforcement	Accountability / Monitoring	4	0	2	4	0	4
		Enforcement Issues	2	0	0	2	0	2
		Zoning Re: Sprawl (Do houses attract sprawl)	1	0	0	1	0	1

Figures

Figure 1: Number of important (green) and critical (red) votes for each overall category in question 1.

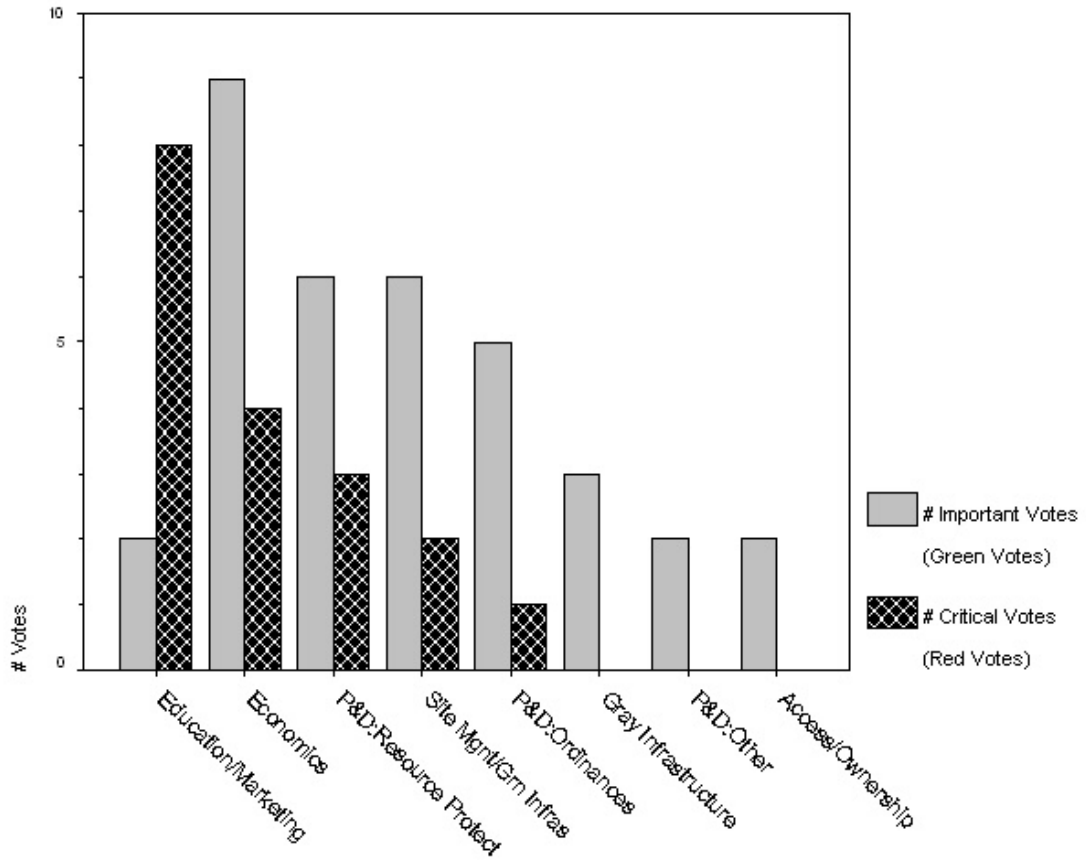


Figure 2: Number of votes for each overall category in question 1 using weights. One green vote equals one, one red vote equals two.

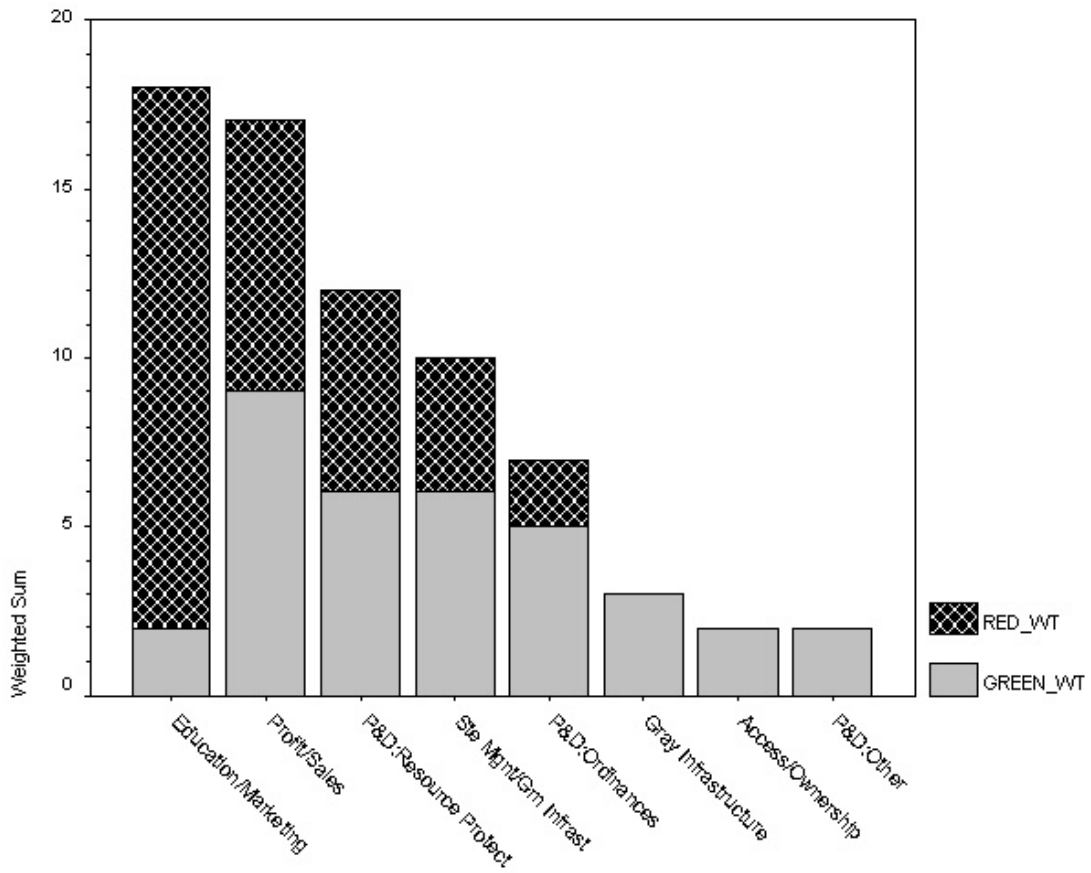


Figure 3: All weighted votes summed together for subcategories and overall categories in Question 1. Critical votes (red) were weighted by 2. Important votes (green) were weighted by 1.

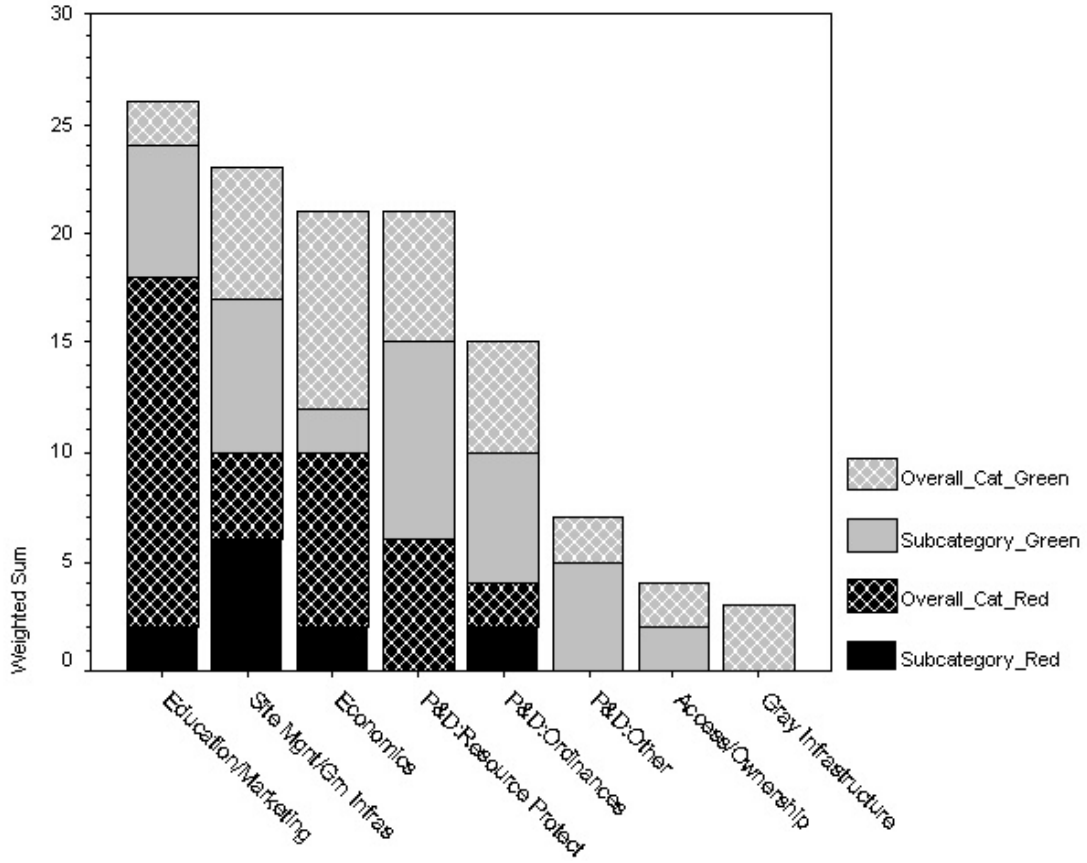


Figure 4: Number of important (green) and critical (red) votes for each overall category in question 1.

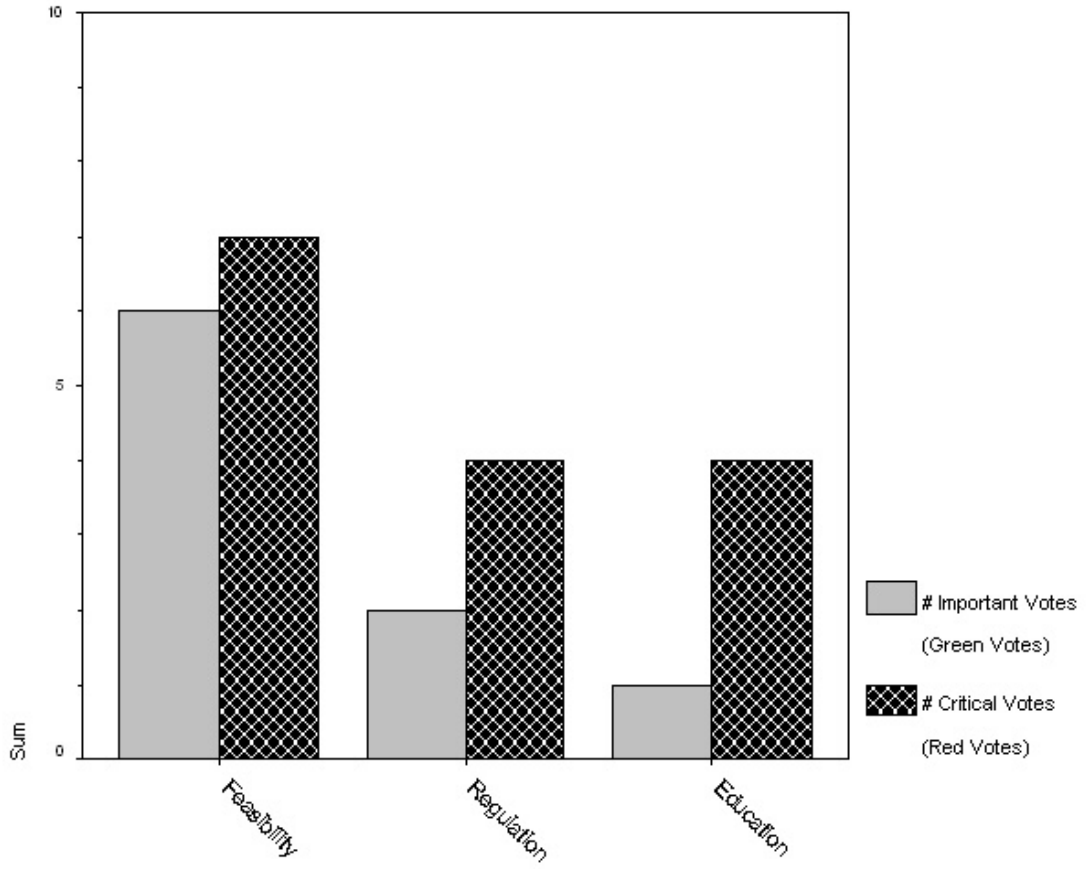


Figure 5: Number of votes for each overall category in question 2 using weights. One green vote equals one, one red vote equals two.

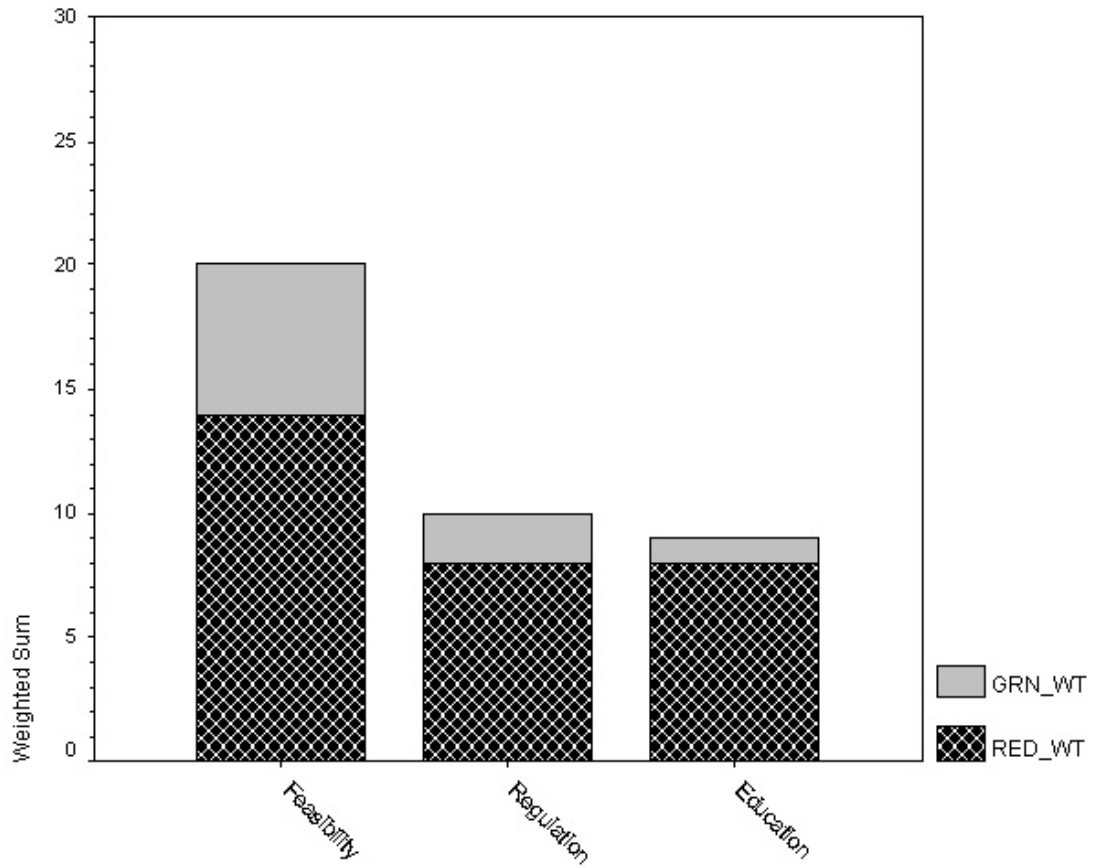


Figure 6: All weighted votes summed together for subcategories and overall categories in Question 2. Critical votes (red) were weighted by 2. Important votes (green) were weighted by 1.

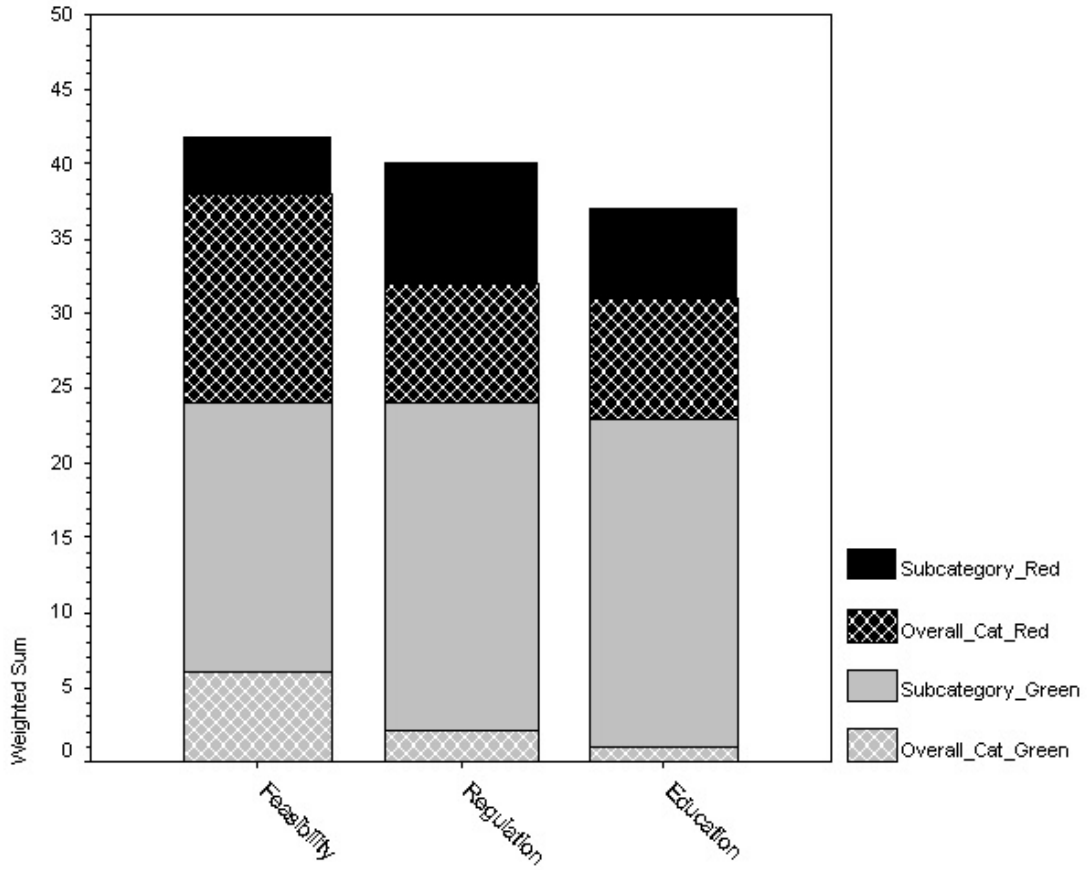


Figure 7: Number of important (green) and critical (red) votes for each overall category in question 1.

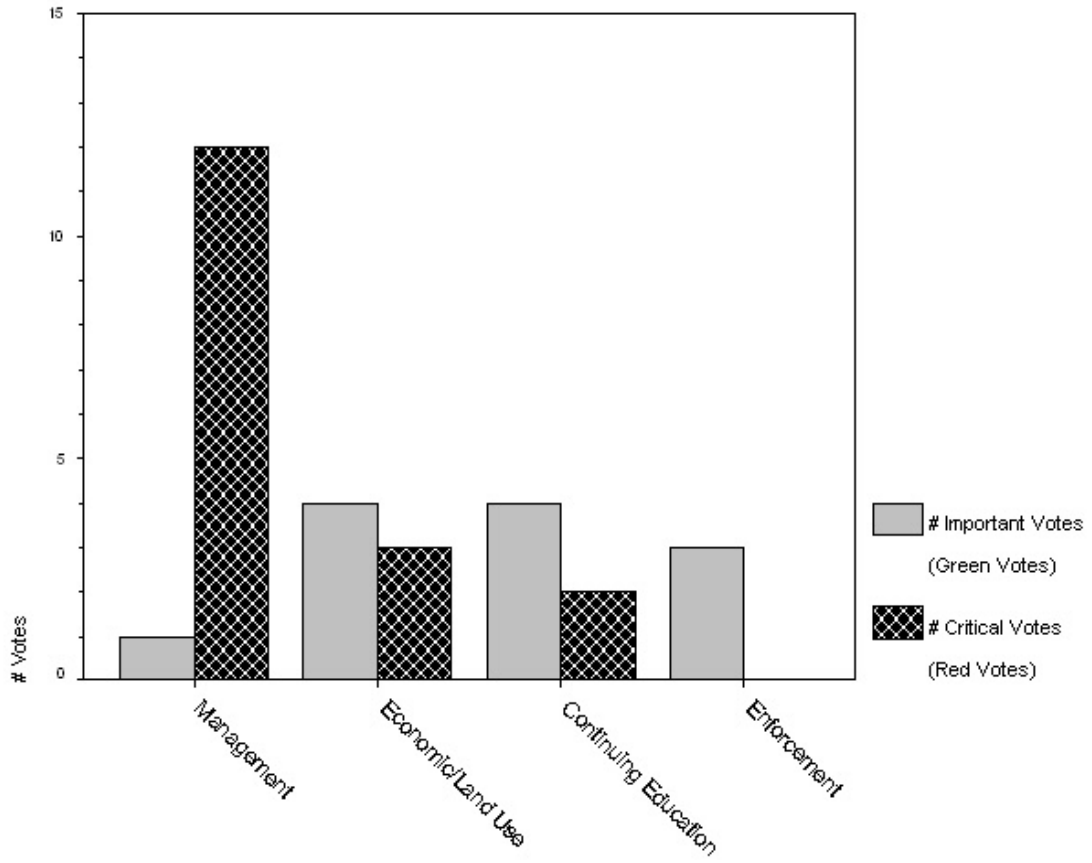


Figure 8: Number of votes for each overall category in question 3 using weights. One green vote equals one, one red vote equals two.

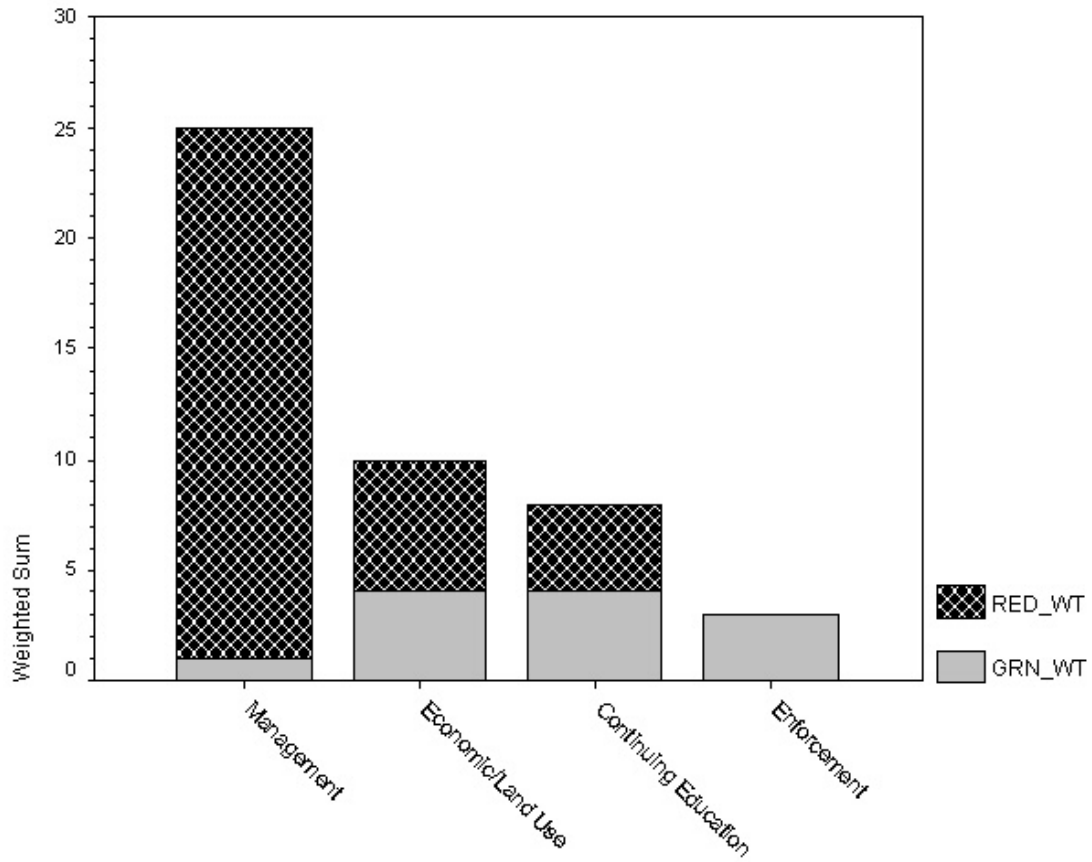


Figure 9: All weighted votes summed together for subcategories and overall categories in Question 3. Critical votes (red) were weighted by 2. Important votes (green) were weighted by 1.

