

Tennessee Growth Readiness

Having Growth and Water Quality Too

*2006 Southeast Watershed Roundtable and
North Carolina Statewide Roundtable
August 2-4, 2006*



Acknowledgements

Program Sponsors

Tennessee Department of Agriculture Nonpoint Source Program

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Tennessee Valley Authority

Southeast Watershed Forum

University of Tennessee

Program Inspiration

Center for Watershed Protection

TDA, TVA, UT and the Tennessee communities of Alcoa, Blount County, Knox County and Maryville developed and piloted the program. They adapted work by the University of Connecticut NEMO program and the Center for Watershed Protection. The program is a charter member of the National NEMO Network.

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Training and Community Workshops

- Build awareness and support
- Consider model development principles
- Build consensus for change



Community Growth Readiness Training

- Leadership
- Site Planning Roundtable Management



Build awareness and support

Why is water quality important?

Water quality issues matter



- Economy
- Quality of life
- Federal and state laws

What is water pollution?

Pollution isn't what it used to be



Point source

- Single, identifiable source
 - industrial
 - sewage treatment
- Most has been cleaned up in the last 25 years

The pollution you can't pinpoint



Nonpoint source

- Contamination carried into water by runoff
- Comes from an entire watershed
 - Geographic, not political boundaries
- Most from land that is
 - built on or paved
 - farmed
 - bare soil
- Primary source today

What are new legal requirements?

New Clean Water Act requirements

- NPDES Storm Water Phase II
 - new storm water management program required
 - includes new permitting and development requirements
- 303(d) and TMDLs
 - identifies streams not in compliance with standards
 - sets total maximum daily load requirements
 - may limit development that contributes to load

Streams not in compliance

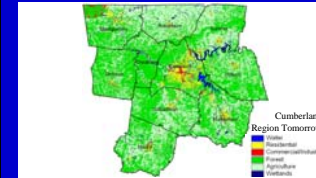


Consequences of non-compliance

- Total maximum daily load established
- Permits restricted
- Fines of \$15,000 per day for violations

How can growth effect water quality?

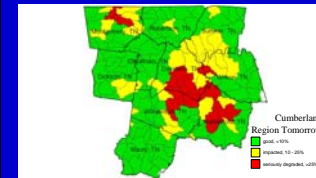
Our present land use



Our water quality & imperviousness



Our future water quality?



Can we have growth & water quality?

Choices for growth & water quality

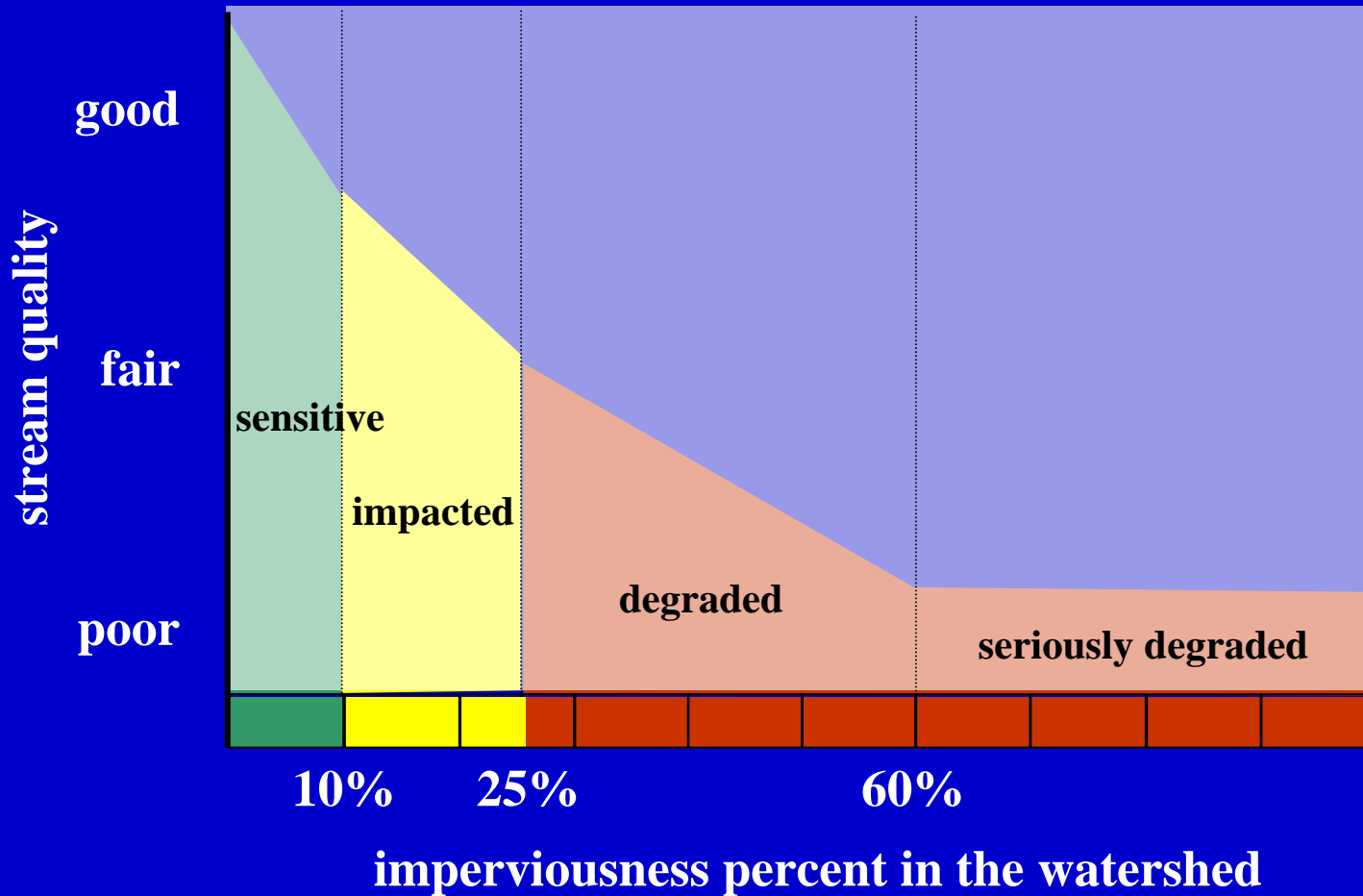
Consider land use effects on water quality when:

- planning for community
- evaluating site designs
- adopting new best practices

Land use and water quality: the choices are ours

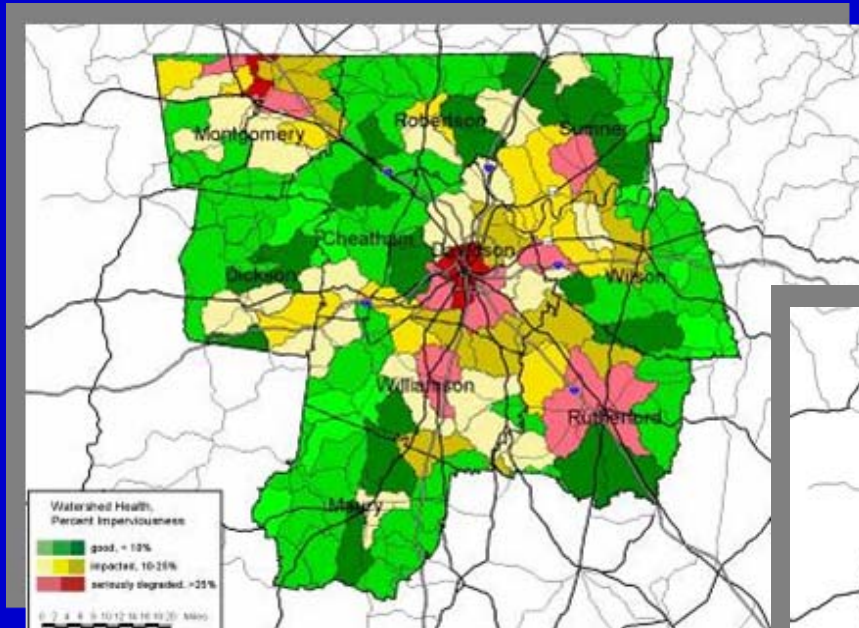


Imperviousness effects stream quality

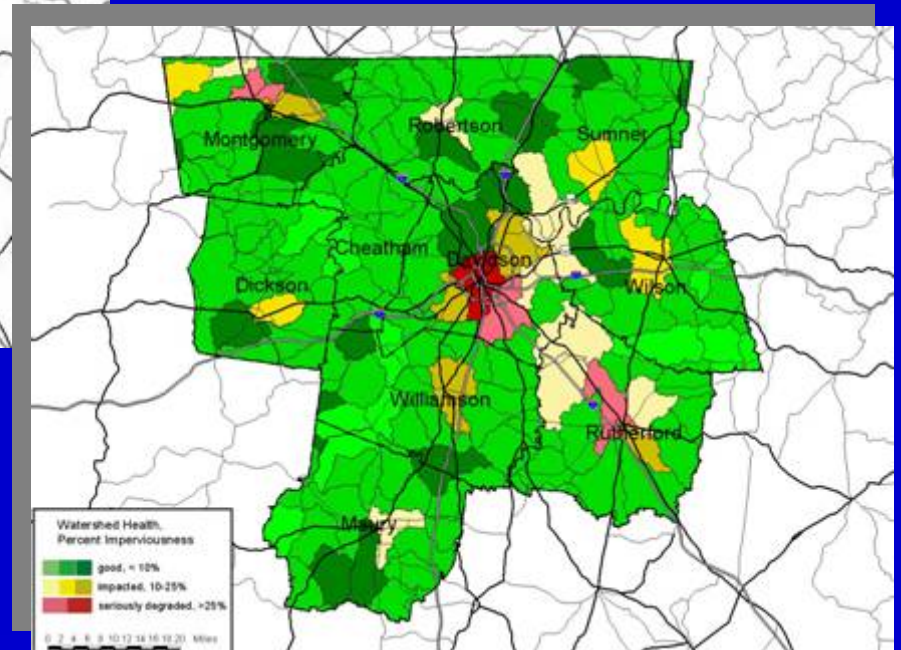


Center for Watershed Protection

Growth & water quality & everything else



The Future
with best practices



The Future
business as usual



Consider Model Principles

Streets and Parking

1. Street width
2. Street length
3. Right-of-way width
4. Cul-de-sacs
5. Vegetated open channels
6. Parking ratios
7. Parking codes
8. Parking lot design
9. Structured parking
10. Parking lot runoff

Lot Design

11. Open space development
12. Setbacks and frontages
13. Sidewalks
14. Driveways
15. Open space management
16. Rooftop runoff

Natural Areas

17. Aquatic buffers
18. Buffer maintenance
19. Clearing and grading
20. Tree conservation
21. Conservation incentives
22. Storm water outfalls



Evaluate existing development rules

Center for Watershed Protection's Codes and Ordinances Worksheet

Rating Questions	Ratings	Basis for Rating
1. Street Width		
a. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 average daily trips (ADT)?	0	If the answer is between 18-22 feet, award 4 points
b. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?	0	If the answer is YES, award 3 points
2. Street Length		
a. Do street standards promote the most efficient street layouts that reduce overall street length?	0	If the answer is YES, award 1 point
3. Right-of-Way Width		
a. What is the minimum right-of-way (ROW) width for a residential street?	0	If the answer is less than 45 feet, award 3 points
b. Does the code allow utilities to be placed under the paved section of the ROW?	0	If the answer is YES, award 1 point
4. Cul-de-Sacs		
a. What is the minimum radius allowed for cul-de-sacs?	0	If the answer is less than 35 feet, award 3 points If the answer is 36 feet to 45 feet, award 1 point
b. Can a landscaped island be created within the cul-de-sac?	0	If the answer is YES, award 1 point
c. Are alternative turn arounds such as "hammerheads" allowed on short streets in low density residential developments?	0	If the answer is YES, award 1 point
5. Vegetated Open Channels		
a. Are curb and gutters required for most residential street sections?	0	If the answer is NO, award 2 points
b. Are there established design criteria for swales that can provide stormwater quality treatment (i.e., dry swales, biofilters, or grass swales)?	0	If the answer is YES, award 2 points
6. Parking Ratios		
a. What is the minimum parking ratio for a professional office building (per 1000 ft ² of gross floor area)?	0	If the answer is less than 3.0 spaces, award 1 point

YES, award 2 points

YES, award 2 points

YES, award 3 points
If the answer is YES, award 1 point

YES, award 1 point

NO, award 1 point

YES, award 1 point

YES, award 2 points

YES, award 1 point

20 feet or less, award 1 point

25 feet or less, award 1 point

8 feet or less, award 1 points

less than 80 feet, award 2 points

4 feet or less, award 2 points

NO, award 2 points

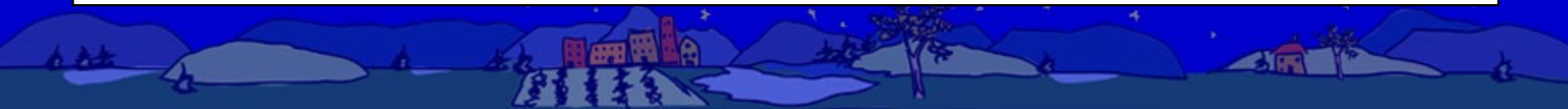
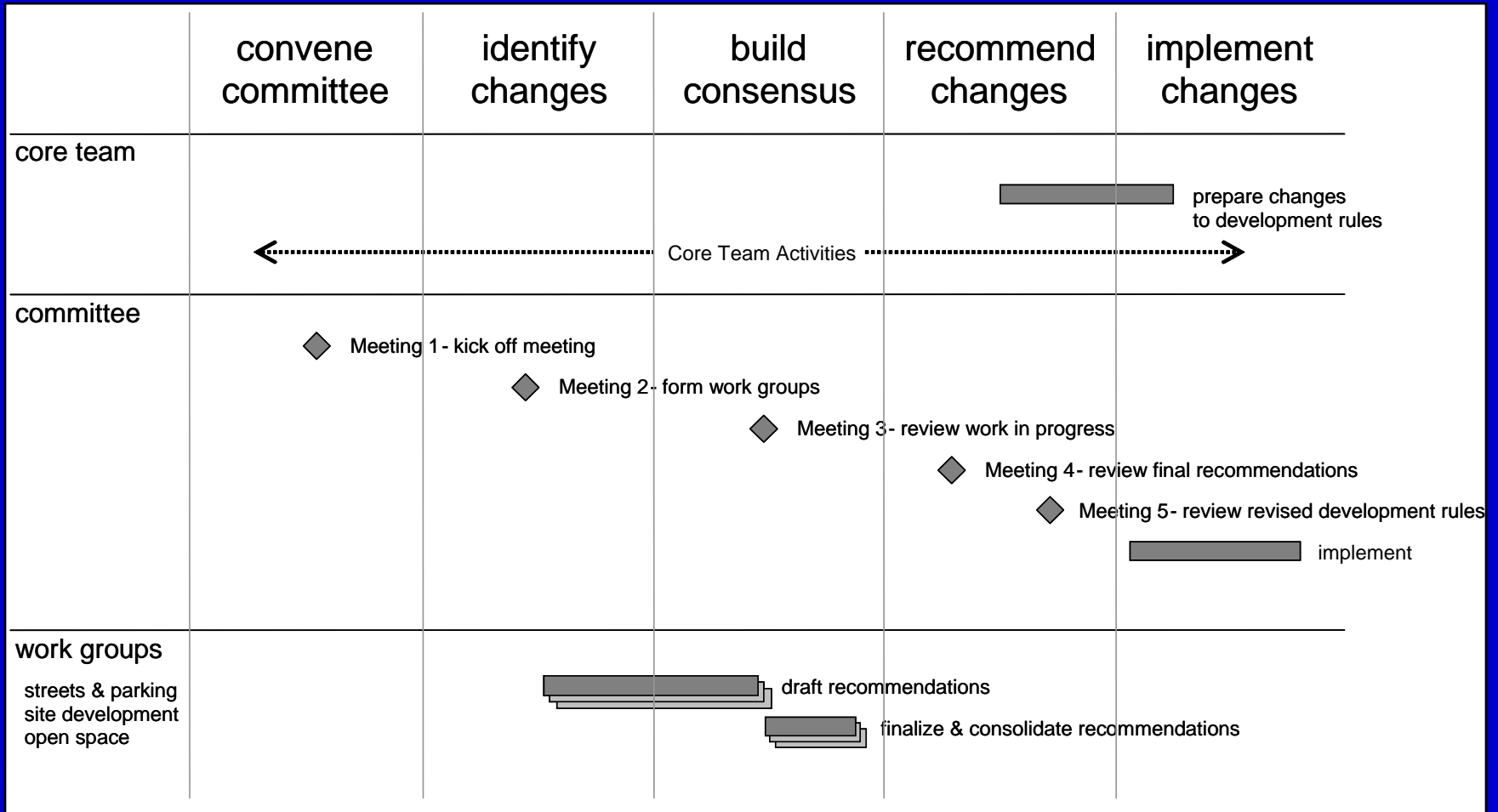
YES, award 1 point

Build consensus for change

- Planners
- Road department
- Land trusts
- Real estate lenders
- Fire Marshall
- Land use lawyers
- Homeowner associations
- Elected officials
- Municipal insurance
- Storm water mgt authority
- Dept. of public works
- Developers
- Realtors
- Civic associations
- Health department
- Engineering consultants
- Chamber of Commerce
- Urban forester
- Watershed advocates



Using a lean, well-managed process



Community Workshops

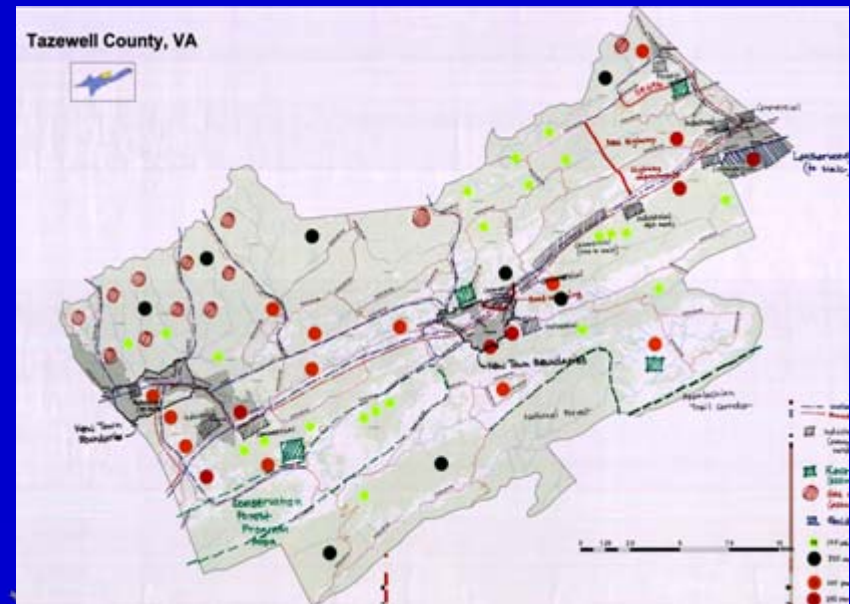
- Multiple jurisdiction codes and ordinances review workshop
 - Blount County
 - Shelby County
- Community growth readiness workshop series
 - Single county – Virginia counties, Greene County
 - Multi-county (watershed) - Duck River, Georgia counties



Workshop Series

Workshop 1 – Understanding Growth's Impact on Water Quality

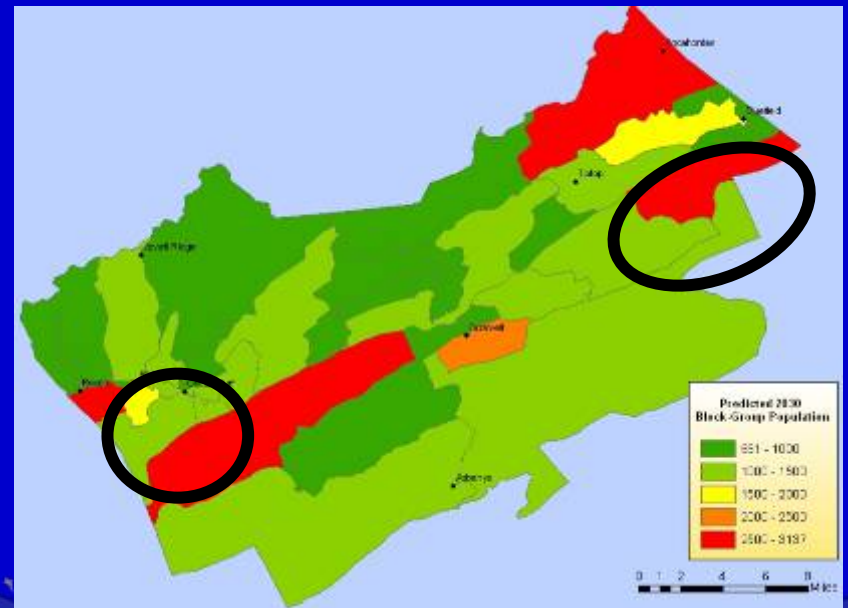
- Learn how land use can effect water resources
- Identify specific water related development issues
- Map projected growth



Workshop Series

Workshop 2 – Having Growth and Water Quality Too

- Discuss issues raised by maps formulated from first workshop
- Learn about best practices for development
- Consider what would work in our community



Workshop Series

Workshop 3 – Deciding What’s Right for Our Community

- Compare existing rules and practices with best practices
- Form work groups to develop recommendations for change

Center for Watershed Protection's Codes and Ordinances Worksheet

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1. Street Width a. What is the minimum pavement width allowed for streets in low density residential developments that have less than 500 average daily trips (ADT)? b. At higher densities are parking lanes allowed to also serve as traffic lanes (i.e., queuing streets)?	0 0	If the answer is between 18-22 feet, award 4 points If the answer is YES, award 3 points
2. Street Length a. Do street standards promote the most efficient street layouts that reduce overall street length?	0	If the answer is YES, award 1 point
3. Right-of-Way Width a. What is the minimum right-of-way (ROW) width for a residential street? b. Does the code allow utilities to be placed under the paved section of the ROW?	0 0	If the answer is less than 45 feet, award 3 points If the answer is YES, award 1 point
4. Cul-de-Sac a. What is the minimum radius allowed for cul-de-sacs? b. Can a landscaped island be created within the cul-de-sac? c. An alternative turn around such as "hammerheads" allowed on short streets in low density residential developments?	0 0 0	If the answer is less than 35 feet, award 3 points if the answer is 36 feet to 45 feet, award 1 point If the answer is YES, award 1 point If the answer is YES, award 1 point
5. Vegetated Open Channels a. Are curb and gutters required for most residential street sections? b. Are there established design criteria for swales (i.e., dry swales, bollards, or grass swales)?	0 0	If the answer is NO, award 2 points If the answer is YES, award 2 points
6. Parking Ratio a. What is the minimum parking ratio for a professional office building (per 1000 sq ft of gross floor area)? b. What is the minimum required parking ratio for shopping centers (per 1000 sq ft gross floor area)? c. What is the minimum required parking ratio for single family homes (per home)? d. Are the parking requirements set as maximum or median (rather than minimum) requirements?	0 0 0 0	If the answer is less than 3.0 spaces, award 1 point If the answer is 4.5 spaces or less, award 1 point If the answer is less than or equal to 2.0 spaces, award 1 point If the answer is YES, award 2 points
7. Parking Codes a. Is the use of shared parking arrangements promoted? b. Are meter shared parking agreements provided? c. Are parking ratios reduced if shared parking arrangements are in place? d. If mass transit is provided nearby, is the parking ratio reduced?	0 0 0 0	If the answer is YES, award 1 point If the answer is YES, award 1 point If the answer is YES, award 1 point If the answer is YES, award 1 point
8. Parking Lots a. What is the minimum stall width for a standard parking space? b. What is the minimum stall length for a standard parking space? c. Are at least 30% of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars? d. Can pervious materials be used for spillover parking areas?	0 0 0 0	If the answer is 9 feet or less, award 1 point If the answer is 18 feet or less, award 1 point If the answer is YES, award 1 point If the answer is YES, award 2 points
9. Structured Parking a. Are there any incentives to developers to provide parking within garages rather than surface parking lots?	0	If the answer is YES, award 1 point



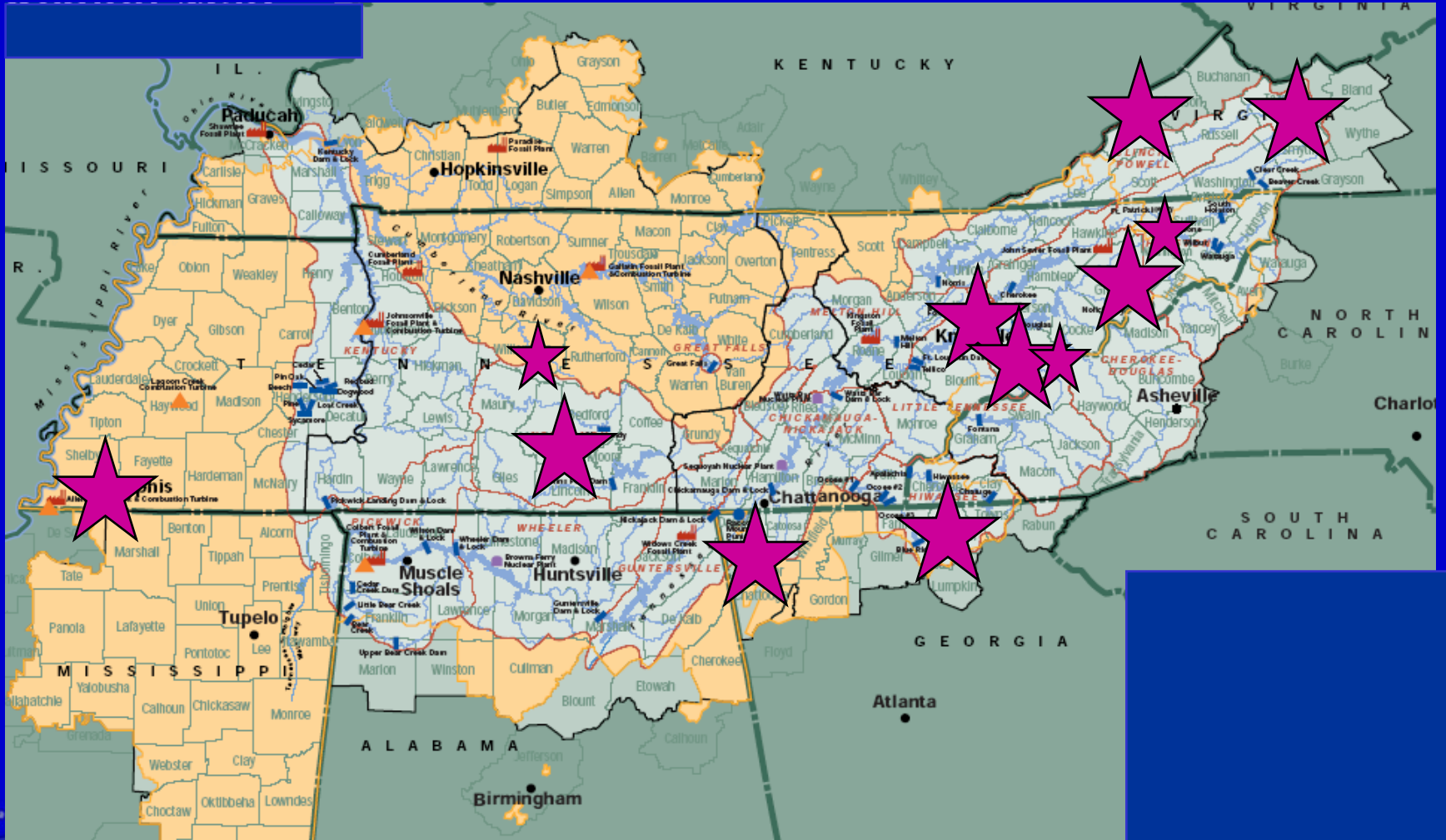
Workshop Series

Workshop 4 – Getting Organized for Action

- Build consensus for change
- Develop action strategies to accomplish change



Who else is doing this?



Results/Change

- Average score: 43 out of 100 (90% of communities in need of serious reform)
- Of the communities who reported change
 - 30 communities: < 20 points
 - 10 communities: increased by as much as 38 points
 - Multiple Jurisdiction Codes and Ordinances Review Workshop
 - Community Site Planning Roundtable Workshop Series
- Additional work is being done



Predominant types of changes

- Street width and length
- Vegetated open channels
- Parking ratios
- Set backs and frontages
- Open space development and management
- Aquatic buffers and their management
- Storm water treatment



Drivers for change

- Stormwater Phase II requirements
- Rapid growth - desire to preserve water quality and quality of life
- Support of key people/local champion



Working well

- Awareness building about issues and solutions, including 22 model principles for Better Site Design
- Codes and Ordinances Worksheet
- Consensus building process
 - What we want to work on together
 - Recommendations



Challenges

- Maintaining participation during development of recommendations
- Determining how to build awareness of issues and desire for change – elected officials, developers, general public
- Implementing recommendations



Next Steps

- Additional community workshop series
 - Greene County
 - Others?
- Continue to develop resources to help communities move to implementation
- Introduce Land Use Planning for Water Quality training module



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