

20th Annual NEIWPC NPS Conference

*Lessons Learned and Innovation in Holistic and
Adaptive Watershed and Lake Management
Planning and Implementation*

May 19, 2009



- Primary Rules of Plan Development
- Guiding Principles
- Frequently Asked Questions
- Data Gathering and Documentation Review
- Field Investigation and Watershed Reconnaissance
- Modeling and Alternatives Development
- Implementation and Monitoring
- Questions and Answers

Primary Rules of Plan Development



What is the first rule of plan development?...
Actually involve the public in Public Involvement

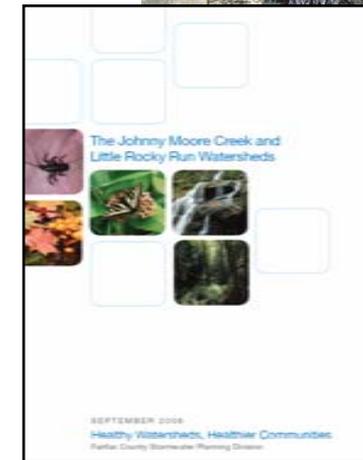
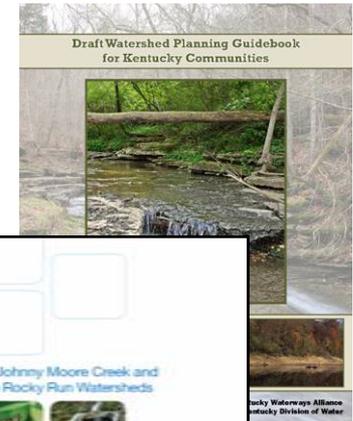
What is the second rule of plan development?...
Actually involve the public in Public Involvement



Guiding Principles in Plan Development

Some guiding principles to always consider...

- Avoid “singing around the camp fire”
- Boots on the ground
- Data gathering and modeling are cheap – implementation and construction are expensive
- Local knowledge alone does not necessarily guarantee a great plan
- Be prepared for “Plan B” and possibly “Plan C”, maybe even “Plan D”



A few questions to ask before you embark on the planning effort:

- We have gotten a lot of input from the public and have a good idea of what we need to do. Do we really need more feedback?
- It seems like we already have a ton of data. But is it what we need? Do we need more? Are we confident enough in what we have to move forward without worrying that we missed something?
- Seems like this should be a pretty straight forward process from here, can we start with a boiler plate plan and just modify it a little to meet our needs?
- Have we considered the long-term maintenance and operation of our proposed solutions? Have the people who will be responsible for this been adequately included in the planning process? Will they be able to maintain what we've proposed once it's actually implemented?
- We really want to focus on improving the (*waterbody of interest*), so is it really necessary to include the rest of the watershed?

Frequently Asked Questions



- We have a bunch of good solutions to start with, so do we really need to take a step back and consider more?
- The solutions that we have so far seem reasonable, but how do we know they are realistic?
- Have we really prioritized what needs to be done in a logical and defensible manner?
- Modeling has already been done, but is it what we need to make implementation decisions? Will we have the data and results that will be necessary to support grant funding?
- Are we adequately addressing what might happen in the future? What will happen if we build it and they do in fact come? What if it doesn't happen the way we anticipate? Can we accommodate various forms of future watershed build out?

Frequently Asked Questions



- We have a lot of public support and enthusiasm, but what will happen if they start demanding action right away? Are we ready for that situation?
- This has been a very long process, and we're looking forward to actually having an implementation plan. Doesn't the process take care of itself from there?
- What will happen in the future if staff, financial conditions or something else unforeseen changes? Will we need to modify our plan? How difficult with that be?

- Review all previously developed plans, incorporating elements that make sense and leaving behind those that do not
- Avoid starting with a boiler plate – each plan is unique
- Understand existing data sources and previous uses
- Interview operations and maintenance staff
- Establish plan data requirements and collect the “right data”
- Before gathering any additional data
 - Perform a thorough desktop review
 - Identify data gaps
 - Develop a plan to gather additional field data
- Ground truth data to the maximum extent possible

Field Investigation and Watershed Reconnaissance

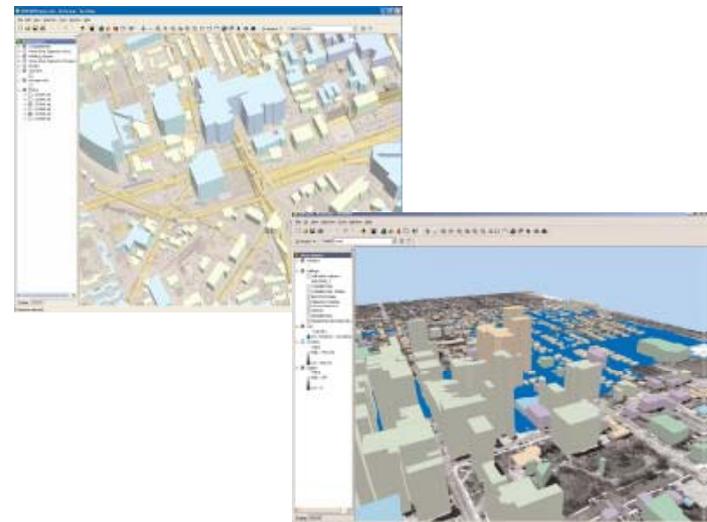
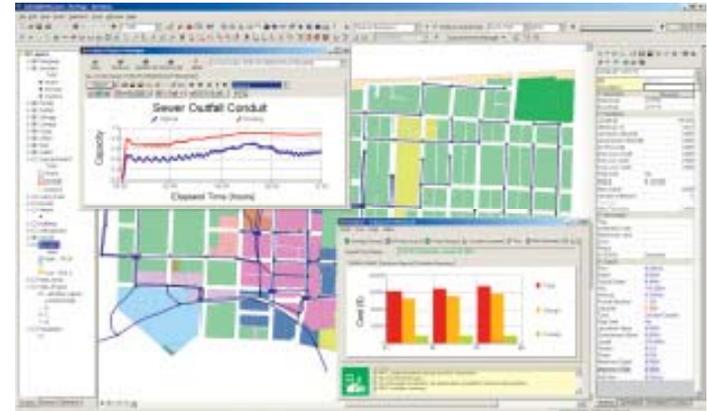
- Take a “watershed tour”, preferably with people who actually know the watershed
- Get engineering and planning staff “boots on the ground”
- Gather intelligence from local watershed residents
- Ground truth locations for all structural solutions
 - Make sure there is enough space to actually construct the project
 - Identify potential conflicts



(Photo courtesy of FLHC)



- Select the right modeling tool(s) for the project
- There is (almost) never such a thing as too much modeling
- Evaluate multiple implementation scenarios to maximize impact
- Consider the entire watershed, not just the waterbody of interest
- Address future conditions, such as
 - Infill and redevelopment
 - Mansionization
 - Rezoning
 - Downzoning



(Images courtesy of MWHSoft)

- Educate the decision makers through Watershed 101
- There is **no** silver bullet solution
- Make quantitative decisions, but consider qualitative input
- When developing solutions
 - Start with what you know works, but think “outside the pipe”
 - Consider all the “tools” in the “tool box”
 - Focus on realistic solutions not just the newest or most “trendy”
 - Obtain feedback from watershed stakeholders
- Make sure other affected parties are involved
 - Planning/Zoning departments
 - Open Space committees
 - Fire Marshall
 - Lawyers



Structural Solutions

- Rain gardens
- Rain barrels
- Bioretention
- Stormwater quality wetlands
- Green parking areas and streets
- Green alleys, driveways, and walkways
- Biofiltration drainage inlets
- Green roofs
- Planter boxes
- Permeable/porous pavement
- Streambank stabilization and restoration
- Vegetated buffers
- “Naturalized” stormwater basins

Non-Structural Solutions

- Maximized green spaces
- Trash/debris removal
- Land management and restoration
- Infill and redevelopment initiatives
- Private and public land programs
- Public education programs
- Tree planting
- Water conservation
- Green ordinances (planning, building and zoning) and policies
- Overlay districts
- Plan review processes and design criteria
- Tax and rate incentives
- Cost sharing

- Address and get “buy in” from those people that will be actually responsible for implementation
- Identify, obtain feedback from, and educate those people will be responsible for future operation and maintenance
- Include a “decision support system” for plan adaptability
- Prioritize the plan based upon available funding
- Identify potential future funding sources
- Develop an Immediate Action Plan
- Establish a group of “watershed stewards” to help “get the word out” and promote accountability
- Monitor success and failure, and make course corrections

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