

Overview of Water Resource Planning

West Virginia Water Resource Management Training Workshops



Presented by the Interstate Commission on the Potomac River Basin
Sponsored by the West Virginia Department of Environmental Protection
With funding from the American Reinvestment & Recovery Act

Outline

- Water Use
- Controls, Conflicts and Rights
- Importance of planning
- National overview
- Water planning in West Virginia
- Role of uncertainty and risk
- Planning features

Water Use

EXERCISE:

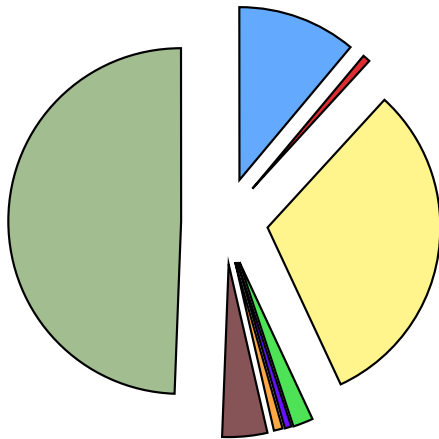
List 3 to 5 (or more) water uses that you are aware of in your local jurisdiction, community, or county.

Some Water Uses

- Rafting
- Drinking water
- Sewage treatment
- Mining
- Fishing
- Agriculture
- Fire protection
- Hydroelectric
- Wildlife
- Cooling water
- Swimming
- Drilling
- Industry
- Snow making
- School uses
- Downstream users
- Construction
- Quality of life

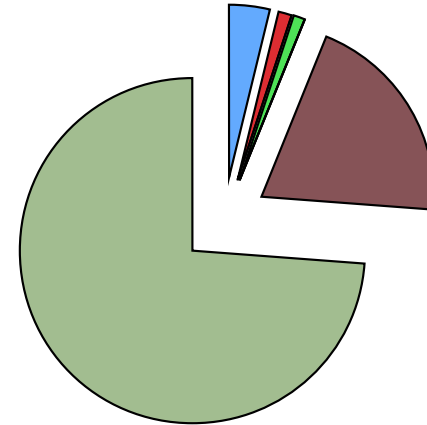
Water Use

United States



- | | |
|---------------|------------------------|
| Public Supply | Self-supplied domestic |
| Irrigation | Aquaculture |
| Livestock | Mining |
| Industrial | Thermolectric power |

West Virginia



- | | |
|---------------|------------------------|
| Public Supply | Self-supplied domestic |
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Water Controls, Conflicts and Rights

DISCUSSION:

**WHO, WHAT, WHEN, AND HOW ARE THESE
USES CONTROLLED IN WEST VIRGINIA?**

Water Controls, Conflicts and Rights

DISCUSSION:

WHEN THERE ARE CONFLICTS AMONG
USES AND USERS:

BY WHOM, WHEN, AND HOW ARE THESE
CONFLICTS RESOLVED IN WEST
VIRGINIA?

Water Controls, Conflicts and Rights

DISCUSSION:

WHAT ARE INDIVIDUAL, CORPORATE, COMMUNITY, COUNTY, AND STATE RIGHTS TO WITHDRAW AND USE WATER IN WEST VIRGINIA?

Water Controls, Conflicts and Rights

DISCUSSION:

How do water quality and water quantity interact in West Virginia?

In other words: How does the quality of the water impact the uses of the water?

Water Controls, Conflicts and Rights

DISCUSSION:

HOW ARE THESE USES EXPECTED TO CHANGE IN THE FUTURE IN WEST VIRGINIA?

WHAT ARE THE POTENTIAL CHALLENGES IN BEING ABLE TO PROVIDE FOR THE USES IN THE FUTURE?

Water Controls, Conflicts and Rights

DISCUSSION:

**WHAT ARE THE DATA NEEDS TO BE ABLE
TO ANSWER THE QUESTIONS WE HAVE
POSED AND DISCUSSED TODAY?**

What is Planning?

- Considering possible outcomes before making decisions about future actions
- Uncertainties are huge, so it is a risk management activity, whether explicit or not

“As a planner, your job is to illuminate the choices”

-Abel Wolman

Why do states and communities plan for water supply?

- To ensure they can meet growing demands
- Because they must
- To help promote growth and development
- Institutional setting matters
- Uncertainty over priorities and rights
- Courts tell you to do so
- Considering these issues can help in developing and evaluating a plan

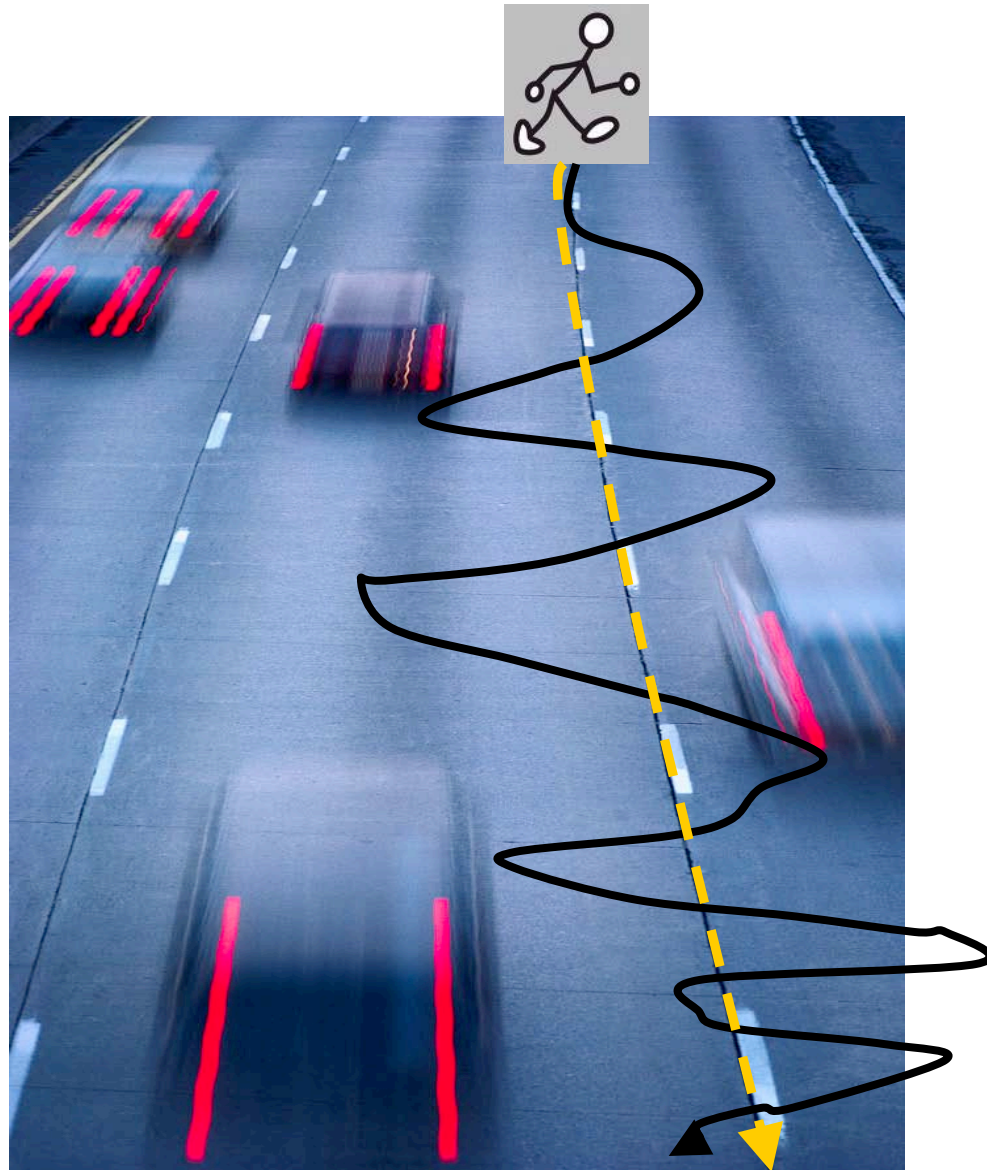
What is the current context for planning?

- Changing objectives and priorities
- Resource limits more prominent
- Sophisticated public stakeholders
- Contentious/adversarial
- Federal role is **increasing**, quietly
- Costly!
- The need for transparency and early collaboration/cooperation is growing

What should planning accomplish?

- Define planning objectives, requirements, priorities
- Buy-in by stakeholders
- Describe future scenarios and uncertainty
- Offer a range of alternative solutions, both supply and demand
- Compare alternatives against stated objectives using clear metrics
- Explain why certain alternatives were chosen

Detail Matters!



National Context

- Water Resources Planning Act of 1965
 - created federal-state river basin commissions (RBCs)
 - promote better water resources planning
 - support economic development
 - created the Water Resources Council, a federal integrated water resource planning entity that would coordinate seven RBCs
 - council was comprised of the secretaries of Agriculture, Interior, Army, Health, and Education, as well as the chairman of the Federal Power Commission (Several agency name changes)

Still Exists; 1980 Executive Order abolished RBCs; Sub-cabinet still meet (approximately 25 agencies!)

National Context

- Supreme Court decisions in 1980s
- Water Resources Development Act (WRDA)
 - Periodic Congressional Enactment (Approximately every other year)
 - Authorizes specific water resources development projects and actions
 - Cost-sharing with non-federal sponsors
 - Other Corps of Engineers project actions
 - Principles and Guidelines

Last enactment WRDA 2007 – November 2007

National Context

- Corps of Engineers – *“Building Strong Collaborative Relationships for a Sustainable Water Resources Future”*
 - Series of Corps of Engineers workshops across the country (WV represented!)
 - Planning Assessment by State and Interstates (RBCs) Draft Report
 - Water Vision
 - Link to other Organizations – AWRA, ICWP
 - Revising Principles and Guidelines – Council on Environmental Quality (Executive Office of the President)

West Virginia

- WV Code: Chapter 1-1-2 – Jurisdiction over Rivers
 - The jurisdiction of this state also extends over all the rivers which are boundary lines between this and any other state, to the opposite shore, where there is no statute or compact to the contrary.
- One Governor: “We should charge the downstream users for our water.”
- Compact on Jennings Randolph Lake Project
Compact (*P. L. 104-176: Law Enforcement Md and WV and Federal interests at the reservoir*) (8/6/96)
- Virginia vs Maryland, No. 129, Orig. - U. S. Supreme Court decided Dec 9, 2003

West Virginia - Legislative History

- Water Resources Protection Act (Senate Bill 163 of 2004)
 - Survey of large water users (> 750,000 gallons per month)
 - Water use registration program
 - Final report
- West Virginia Water Resources Management & Protection Act (Senate Bill 641 of 2008)
 - Continue survey and registration
 - Develop state water resources management plan
 - Data collection
 - Regional and critical area management plans

West Virginia - Roles & Responsibilities

- Joint Legislative Oversight Commission on State Water Resources
- WVDEP's Water Use Section
 - Registration database & website
 - State Plan
 - Guidance for local plans
 - Various special studies
 - Annual reporting to Joint Oversight Commission
- Counties

Uncertainty and Risk

- Source of uncertainty
 - Future population growth & economic conditions
 - Data gaps
 - *“Stationarity is dead”*
- Risk typically incorporates a probability of an event occurring and the outcome associated with that event
 - Probability of certain event
 - The losses associated with that event

Suggested Planning Features (1)

- Resource Assessment
- Issue Identification
- Priority Setting
- Involving Stakeholders
- Conflict Identification and management
- Coordination and Collaboration

Suggested Planning Features (2)

- Plan Implementation and Financing
- Making Recommendations
- Monitoring and Outcomes Assessment
- Education
- Research
- Providing Feedback

SOURCE/REFERENCE: ASCE “State Water Resources Planning in the United States”, 2006

Conclusions

- Planning should illuminate choices
- There are essential elements of planning, but no magic recipe
- Usually, more detail means better planning
- Risk based decisions are becoming more crucial in today's water planning context
- A good, flexible, up-to-date plan will provide certainty for users and regulators, and the courts!
- Data are essential to planning efforts

Suggested Resources

- **State Water Resources Planning in the United States**, Edited by W. Viessman Jr. and T.D. Feather. American Society of Civil Engineers, Reston, Virginia, 2006.