ENVIROTHON

WATER RESOURCE MANAGEMENT:
LOCAL CONTROL AND LOCAL SOLUTIONS
Major Sources of Water: Ground and Surface

**Major drainages to the Chesapeake Bay:**
York, James, Rappahannock, Potomac

**Aquifers**
East of I95 Potomac large with confining upper layers
West of I95 smaller “pockets” of water

**Limitations to Source Water**
Ground water management – Potomac Aquifer (salinization, land sinking, limited water supply)
Rivers/Creeks – minimum stream flows
Local Water Use Cycle 4 Major components:

**Source**

- Water Treatment Plant – screening, flocculation, sedimentation, filter, disinfect, pressurize
- Water Distribution System – pressurized piping, storage tanks, booster pumps
- Wastewater Collection System – gravity piping/manholes, pump stations, force mains,
- Wastewater Treatment Plant – screening, grit removal, biological treatment, clarification, filter, disinfect (UV)

**Discharge to Water Body**
Totopotomy Wastewater Treatment Plant
Sources of Pollution

**Point Source** – single pipe easily identified
  - WWTP – Industrial, commercial, residential
  - Types of pollution – heavy metals, microbial, organics, synthetic, nutrients

**Nonpoint source** – runoff from construction, farming, storm water
  - Types of pollution – herbicides, pesticides, sediment, nutrients
Entities That Regulate Water Quality and Use

Federal
Three branches — Executive, Legislative, Judicial
“Act of Congress” — Establishes law via and Act
Environmental Protection Agency EPA — establishes regulation

State - same structure and relative function as the Federal Government
May be granted “PRIMACY”
Main agencies that establish regulations
Virginia Dept. of Health (VDH) — Office of Drinking Water (ODW)
Dept. of Environmental Quality (DEQ) — regulates water withdrawal and discharged water quality
Less so DCR, DGIF

Local Government
Public Utilities, Public Works, Planning
Local Ordinances

Safe Drinking Water Act
Chemical – Primary standard MCLs, metals (copper, lead, etc.), radiological, VOC, SOCs, cyanide
Secondary standards – iron, color, odor,
Biological – E.coli, crypto, naegleria fowleri, legionella
Emerging issues – new lead regulations, PFAS, manganese

Water Quality Related Issues – Wastewater (1972)

Clean Water Act
Chemical (nutrients, heavy metals, organics, “pass through”)
Biological (virus, cholera, E.coli)
Biosolids – land application - Federal, State and Locally controlled
    vector control, pathogen control, pollutant limits
Emerging Issues – Perfluoroalkyl Substances (PFAS), Harmful Algal Blooms (HABS - cyanotoxins),
    Personal Care Products (PCP), medicines
**Water Quantity Related Issues**

*Surface water evaluation*
- Flow measurement and tracking (river gauges, USGS, databases)
- Modeling – dissolved oxygen (DO, temperature, flow (cfs), submerged vegetation,)

*Local Control*
- Henrico County’s Cobb’s Creek Reservoir – “River Augmentation”
- Water Supply Plans
- Source water protection
- Emergency conservation & response measures (water withdrawal permits)
- Tanker spill – Lynchburg
- Biosolids – localities now charge $$/ton to manage locally – notice, testing, monitoring and storage/application management (Amelia court case).
Sustainability

Conservation/Planning
- Water supply plans – collaborative efforts strongly encouraged
- Home use (low flow toilets, cisterns, irrigation control)

Reuse
- Varies greatly throughout the country
- Hampton Road Sanitation District – aquifer recharge project
  “Toilet to Tap”

Agricultural Practices
- BMPs
- Biosolids land application
- Nutrient management
Regulatory Process
State Role – “Life of a Bill”
General Assembly - recent session
Regulation development
Various methods of input

Local – limited sovereignty but.....
Participation through your representative in the General Assembly
Professional organizations (e.g. committees)
Nonprofit organizations
Local code provisions
A NEW BILL
A bill is an idea for a new law, or an idea to change or get rid of an existing law. Ideas for bills can come from anyone—legislators, community members, organizations, even corporations.

The VA LAM tracks legislation that helps Latinx families by expanding access to the full range of reproductive healthcare services, promoting justice for immigrants, increasing access to education for young parents, promoting justice for LGBTQ people and their families, and improving economic opportunities.

STEP 1: INTRODUCE A BILL
A member of the House of Delegates or the Senate can introduce a bill. The member who introduces the bill is called the sponsor.

STEP 2: SEND TO COMMITTEE
Once introduced, a bill gets assigned to a member, and then the committee to which it must be sent to is determined. Once determined, the bill is sent along to the first committee. The House of Delegates has 14 committees and the Senate has 11 committees.

STEP 3: COMMITTEE HEARS THE BILL
The committee studies the bill to see if it would make a good law. Committees often hold hearings, where people testify in support or in opposition to the bill. Members of the committee can suggest changes (called amendments) to the bill for the committee to consider.

VA LAM activists and supporters share their stories by testifying at committee hearings. VA LAM activists who can’t attend in person can submit written testimony into the record. VA LAM members can call the members of the committee to express their support or share their concern about a bill, and we often have days of action to share our experiences with legislators in person.

The Virginia General Assembly has two legislative chambers—the House of Delegates and the Senate. There are 100 members of the House of Delegates and 40 members of the Senate. The VA General Assembly meets for 60 days in even years and 45 days in odd years.
**STEP 5: GOVERNOR’S DESK**

If the bill passes both chambers, it goes to the Governor for approval. The Governor has four choices:

1. Governor signs the bill.
2. Governor returns the bill with changes (amendments). If the House of Delegates and Senate approve the changes, the bill becomes law.
3. Governor vetoes (or rejects) the bill. The House of Delegates and Senate may override the veto by a two-thirds vote of each chamber.
4. Governor takes no action. If the Governor doesn’t sign the bill, but doesn’t veto it, it automatically becomes the law.

When a bill is being considered on the chamber floor, YA LAW activists participate in days of action, calling or visiting legislators to express their support or opposition to a bill. We may also show up at the Capitol building on the day of a floor vote to rally, speak to the media, and do in-person storytelling with legislators.

**STEP 4: FLOOR ACTION**

A bill that is approved by committee(s) returns to the chamber (House or Senate) where it was first passed, where it is read or printed in the calendar three times. After crossover, bills from the other chamber are read twice, and then referred to committee. Alternatively, debate and amendments typically happen on the third reading. To pass the first reading, the bill title is printed in the calendar (the daily printed agenda of business) or in the 21-day printed agenda. Each chamber has its own rules.

If a bill passes in the House of Delegates, it goes through a similar process in the Senate. Before a bill becomes law, it must be approved by both chambers of the legislature. The bill must pass with the same wording in the House of Delegates and the Senate before it can go to the Governor. If the Senate amends a House bill, or vice versa, the bill must go back to the original chamber and be approved with the amendments before proceeding.

Sometimes, bills with different amendments end up in a conference committee, where a small group of members from each chamber try to work out the differences.
Costs Associated with Water Issues

Social – environmental justice
  lead in water, adequate and clean water, legacy issues (old cities etc.)

Funding Sources - (taxes, user fees, loans) – State and Local budget process

Virginia Agricultural Incentives -  VASC BMP, Conservation Reserve Enhancement Program (CREP)
Careers in the Environmental Field

Engineering
Scientist
Agricultural
Lawyer
Public Relations
Nonprofit
QUESTIONS?????