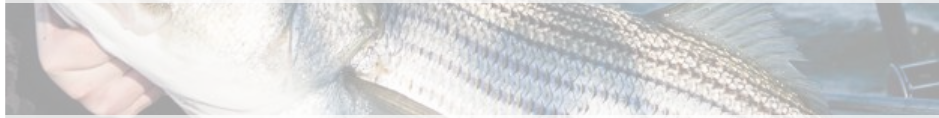


WIP Data Dashboard

Integrating 30 years of Chesapeake Bay data into a new decision support framework for Watershed Implementation Plan development & implementation

Contributions from: John Wolf, Emily Trentacoste, Aera Hoffman, Jimmy Webber, Doug Moyer, Joel Blomquist, Jeni Keisman, Rebecca Murphy, Matt Johnston, Qian Zhang, Lindsey Gordon & more



From the Science side…

A LOT of new and updated science available

Monitoring & Trends

Non-tidal water quality

Tidal water quality

Tidal attainment

Submerged aquatic vegetation

Modeling Tools

Phase 6 Watershed Model

Geographic load distribution

Geographic influence on Bay

BMP progress reports

Synthesis Analyses

USGS Non-tidal Syntheses

-Regional Nitrogen, Phosphorus and Sediment

-Groundwater

SAV Syntheses

Water Clarity Synthesis

Water Quality Synthesis

From the Management side…

New plans, new expectations, new requests

Phase III WIP expectations

Assess what's been working and what hasn't

Develop "local area goals" at finer resolution

Planning for urban growth and climate change

Managers/planners want to know:

Targeting restoration efforts

- Geographically
- By sector

Co-benefits of nutrient and sediment reduction

Identify remaining opportunities for BMPs

The WIP Data Dashboard

What is the Dashboard?

The purpose of the WIP Development Data Dashboard is to consolidate and provide accessibility to technical and scientific information in one cohesive location and to provide guidance on how and why the information should be used.

This information includes, but is not limited to:

- Tidal and watershed water quality monitoring trends
- SAV trends and their explanations
- Urban growth projections
- Information to help geographically target restoration efforts
- Information to help choose BMPs
- Current BMP implementation and opportunities

The WIP Data Dashboard

What can you do with it?

The Dashboard provides information that can inform planning efforts and help to:

- Understand status of local water quality and change over time
- Understand local pollution sources and drivers of water quality
- Target, focus or prioritize restoration efforts
- Identify co-benefits associated with management practices
- Identify effective and cost-effective practices
- Identify opportunities for implementing practices
- Plan for future growth and development

Some uses of this information include:

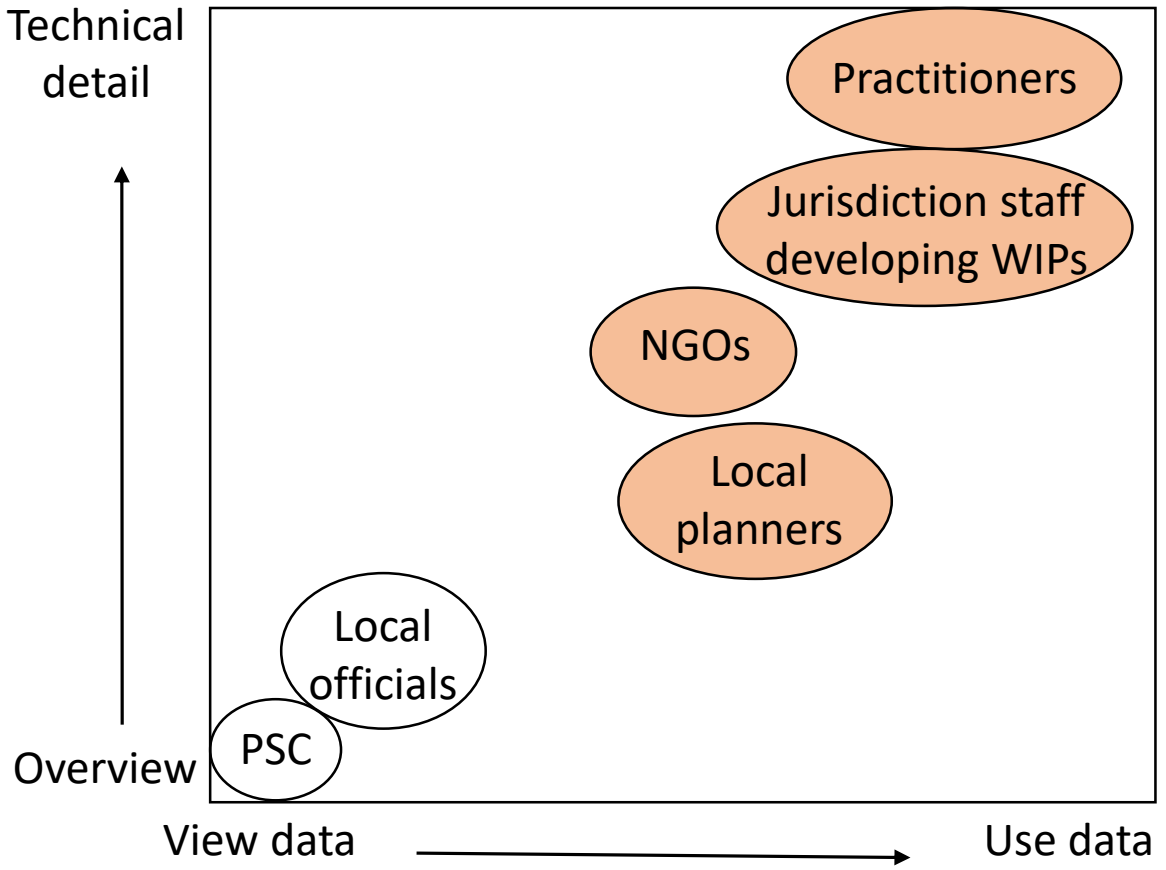
- Targeting restoration efforts geographically, by sector, or by practice
- Developing scenarios to run on the Chesapeake Assessment Scenario Tool (CAST)
- Outreach and communication of water quality information
- Building local stories

The WIP Data Dashboard

Who should use it?

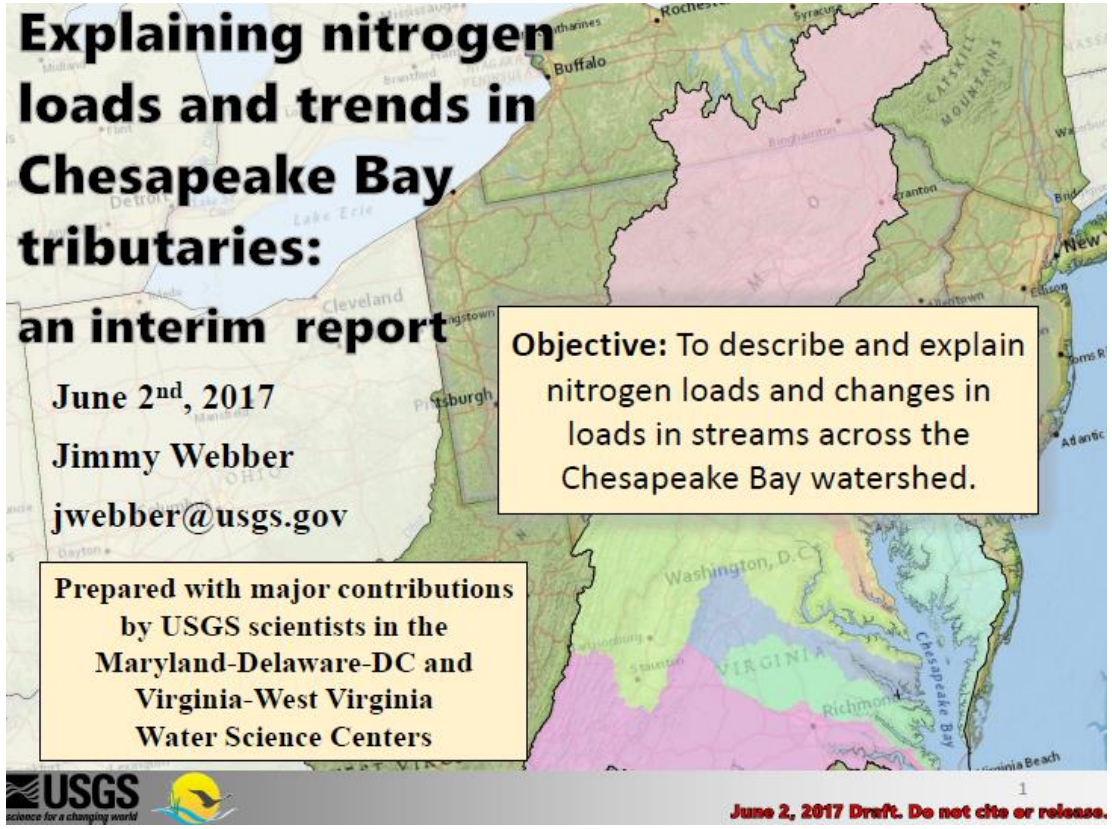
- Anyone seeking information that can aid in their planning process for water quality restoration
- Is meant for a range of users from less technical to technical, from state to local
- Possible users include:
  - State agency staff
  - NGO partners
  - Local planners (e.g. municipality level, soil conservation district level, county level, etc.)
  - Watershed organizations

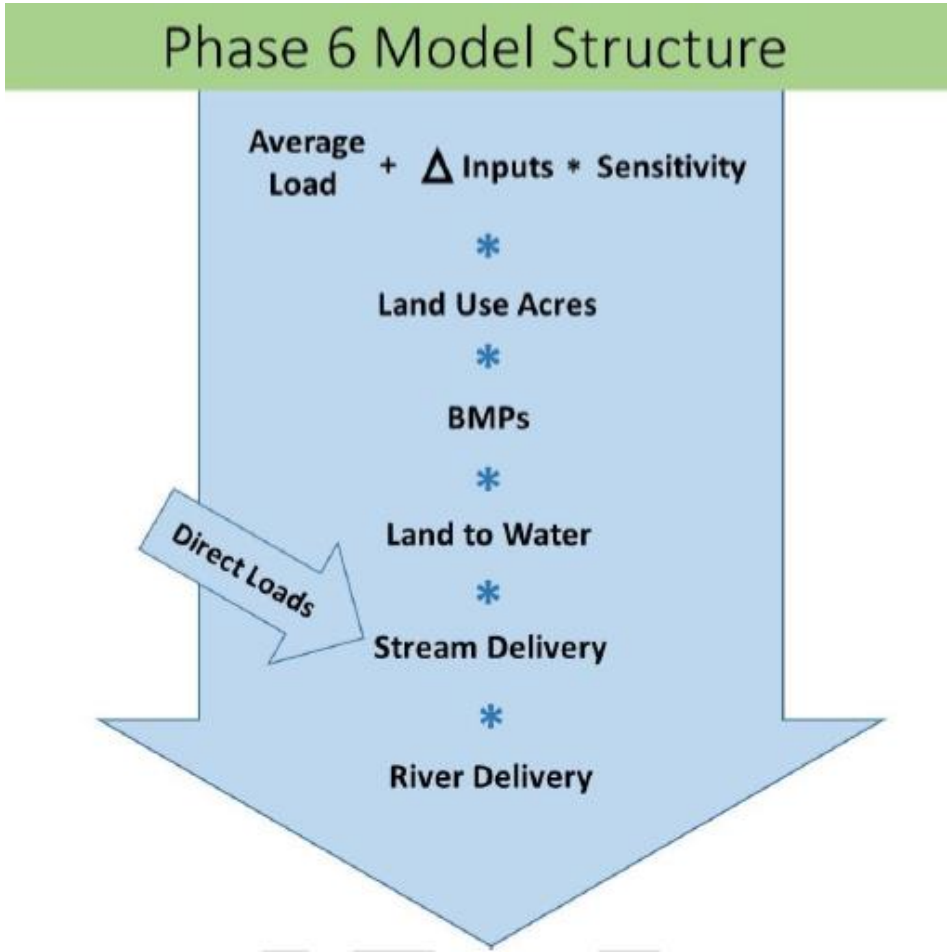
Our typical WIP audiences (highlighted are targeted for dashboard)



Going from data to decision-support tools

1) Work with scientific community to determine essential scientific messages and data to back them up – E.g. “Synthesis” teams





Going from data to decision-support tools

2) Solicit feedback from management community on essential information needed to make their decisions

"Tell me my options, but don't tell me what to do…"

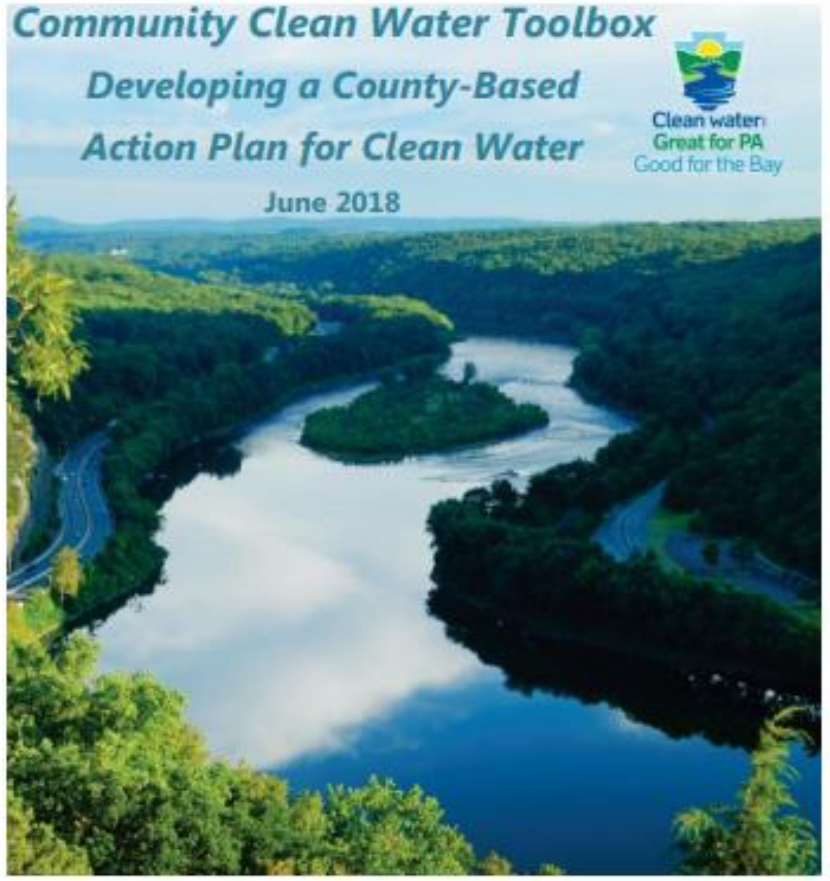
Water Quality Goal Implementation Team

Soil Conservation Districts

Phase III WIP Steering Committees

STAC Workshops

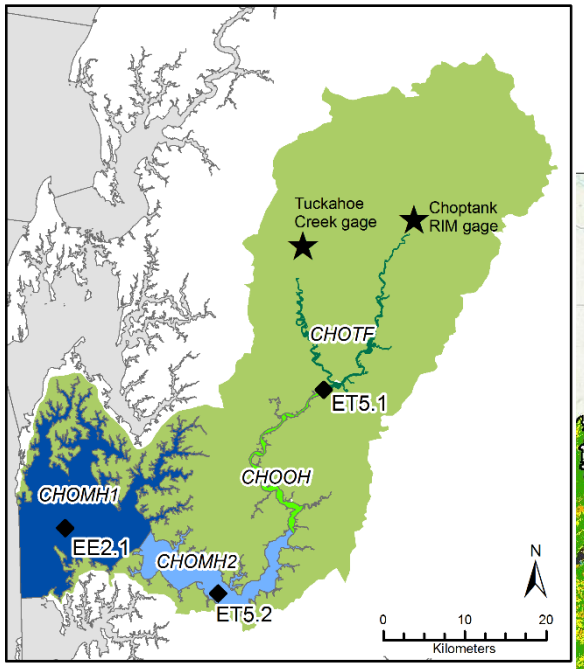
Local Government Advisory Committee

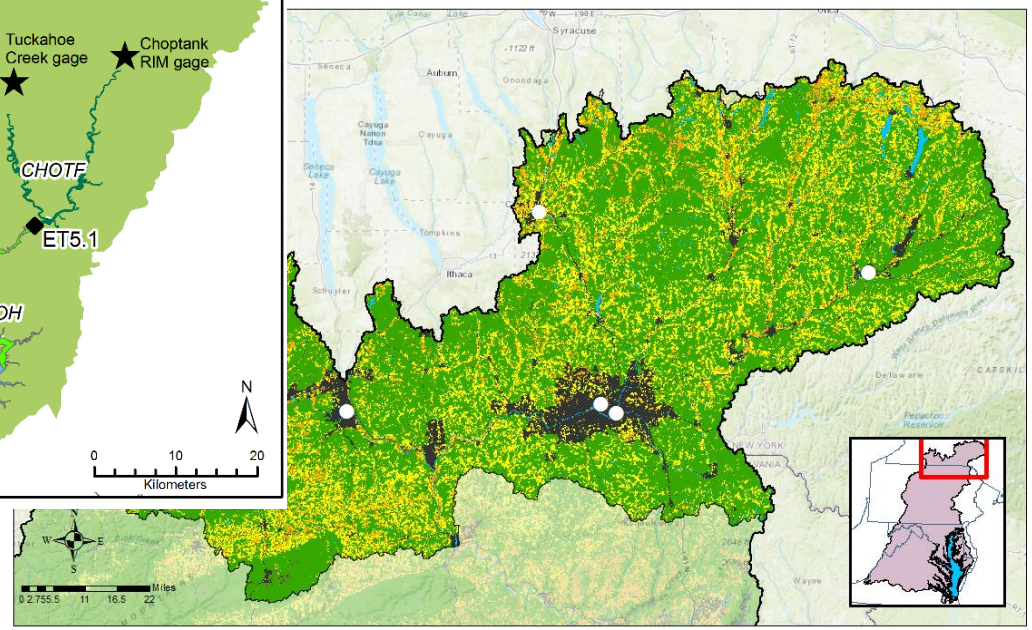


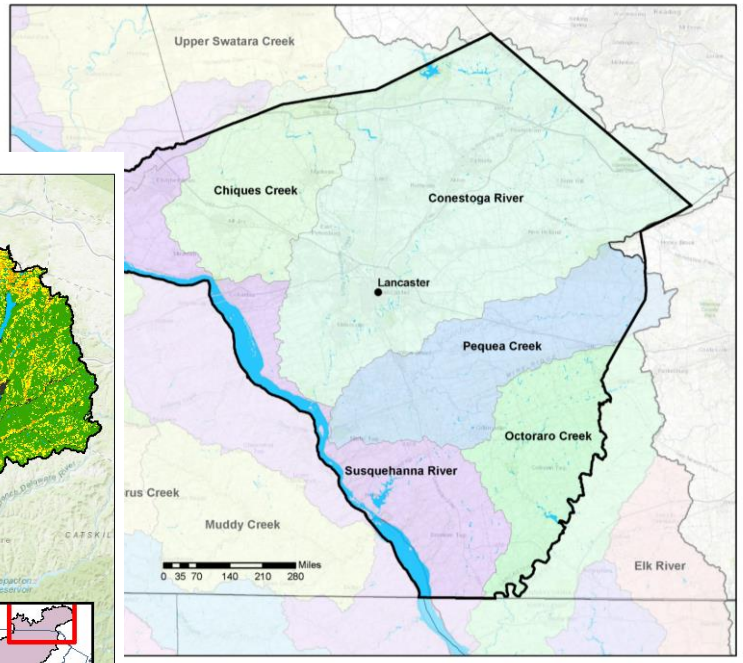
Going from data to decision-support tools

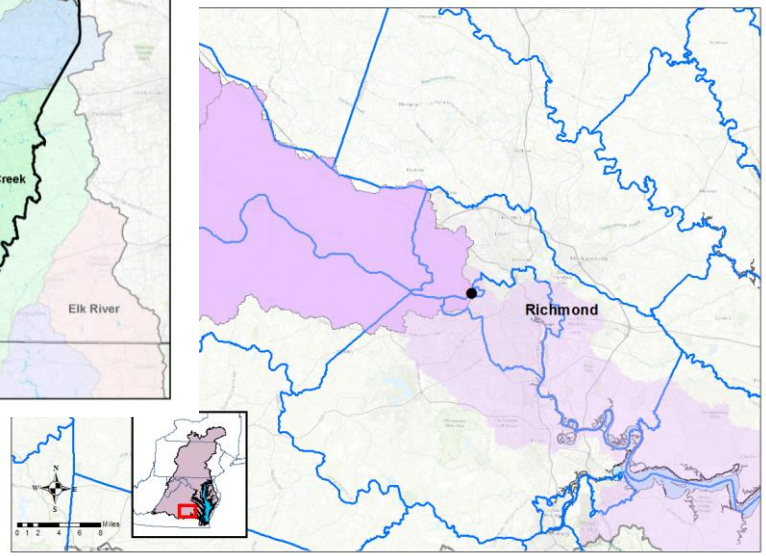
3) Determine a way to communicate data that resonates with managers

We found that using the data to tell local stories (“storylines”) resonated best









Going from data to decision-support tools

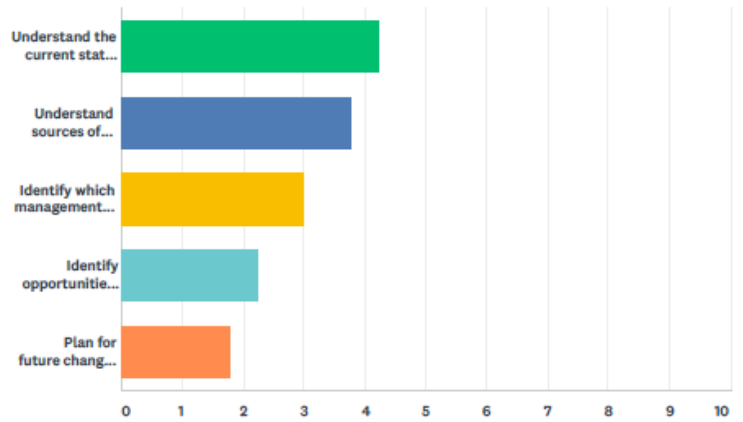
4) Conduct preemptive user research to understand how, when and why users would want to access decision-support information

We wanted to know:

- What sort of information is important our users?
- How do they organize that information in their own minds?
- When in their planning process do they want to access that information? In what order makes sense?

Q2 Please select the order in which you might look for information on these topics as you go through the planning process. Click and drag (or select the dropdown) in order of importance with 1 being highest.

Answered: 13 Skipped: 0



	1	2	3	4	5	N/A	TOTAL	SCORE
Understand the current status of water quality in your area and trends over time	69.23% 9	7.69% 1	7.69% 1	7.69% 1	7.69% 1	0.00% 0	13	4.23
Understand sources of pollution and drivers of water quality in your area	15.38% 2	61.54% 8	7.69% 1	15.38% 2	0.00% 0	0.00% 0	13	3.77
Identify which management practices are effective and cost-effective for your area	7.69% 1	15.38% 2	53.85% 7	15.38% 2	7.69% 1	0.00% 0	13	3.00
Identify opportunities in your area for implementing management practices	7.69% 1	7.69% 1	15.38% 2	38.46% 5	30.77% 4	0.00% 0	13	2.23
Plan for future changes in your area such as urban growth or climate change	0.00% 0	7.69% 1	15.38% 2	23.08% 3	53.85% 7	0.00% 0	13	1.77

Going from data to decision-support tools

5) Inventory current data visualization products & projects

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Inventory of Data Visualization Products for Midpont Assessment, Phase III WIP Development and Implementation**											
2	**Product**	**Basic Description**	**Functionalities**	**End Target Audience Product**	**Priority Use**	**Status**	**Timeline (when needed)**	**Action Needed**	**Review needed?**	**Priority**	**Location**	
3	**USGS Nontidal Website**	Location where nontidal monitoring data is housed	USGS concentration data	Jurisdictions, Localitie	MPA, Explaining Trends	Complete	Ongoing	Consolidation or distillation of information for other audiences (like PSC)	No	Low	https://cbrim.er.usgs.gov/	
4	USGS Interactive Map	Trends and loads	NTN loads 2014									
5			NTN trends in loads ('05-'14)									
6			NTN trends in loads ('85-'14)									
7			NTN yields (ave. '05-									
8	USGS Static Figures	Display most recent trends and loads info	NTN trends in loads ('05-'14)									
9	Maps		NTN trends in loads ('85-'14)									
10			NTN loads 2014									
11			NTN yields (ave. '05-									
12			NTN combined yields trends ('05-'14)									
13	Bar graphs		NTN trends in loads ('05-'14)									
14												
15	**Nontidal Dashboard (Tableau)**	Interactive maps with station-specific nontidal monitoring and trends info	NTN annual loads ('85-'14)	Jurisdictions, localitie	MPA, Explaining Trends	Being updated by John Wolf	August	Remaining development, user experience, review, consolidation or distillation of info for other	ITAT, WQGIT	Medium	https://public.tableau.com/profile/bryan.chastain#!/vizhome/CBPNon-TidalV6/Non-TidalWaterQualityDashboard	
16			Flow-normalized annual loads ('85-'14)									
17			NTN trends in loads ('05-'14)									

Tools Inventory | Tools by questions | Info status | Tool status

Going from data to decision-support tools

6) Organize information in manageable chunks – “modules”

What is the status of water quality in my area?

- Freshwater Rivers & Streams Water Quality
- Tidal Water Quality & Living Resources

What are sources & drivers of pollution? Where geographically is most effective to focus?

- Targeting Restoration Efforts

What are the most effective and cost effective BMPs? Where can I implement them?

- Identifying Implementation Opportunities

How can I plan for growth and mitigate issues associated with it?

- Planning for Urban Growth

Going from data to decision-support tools

7) Utilize user research and management input to provide significant guidance with data