



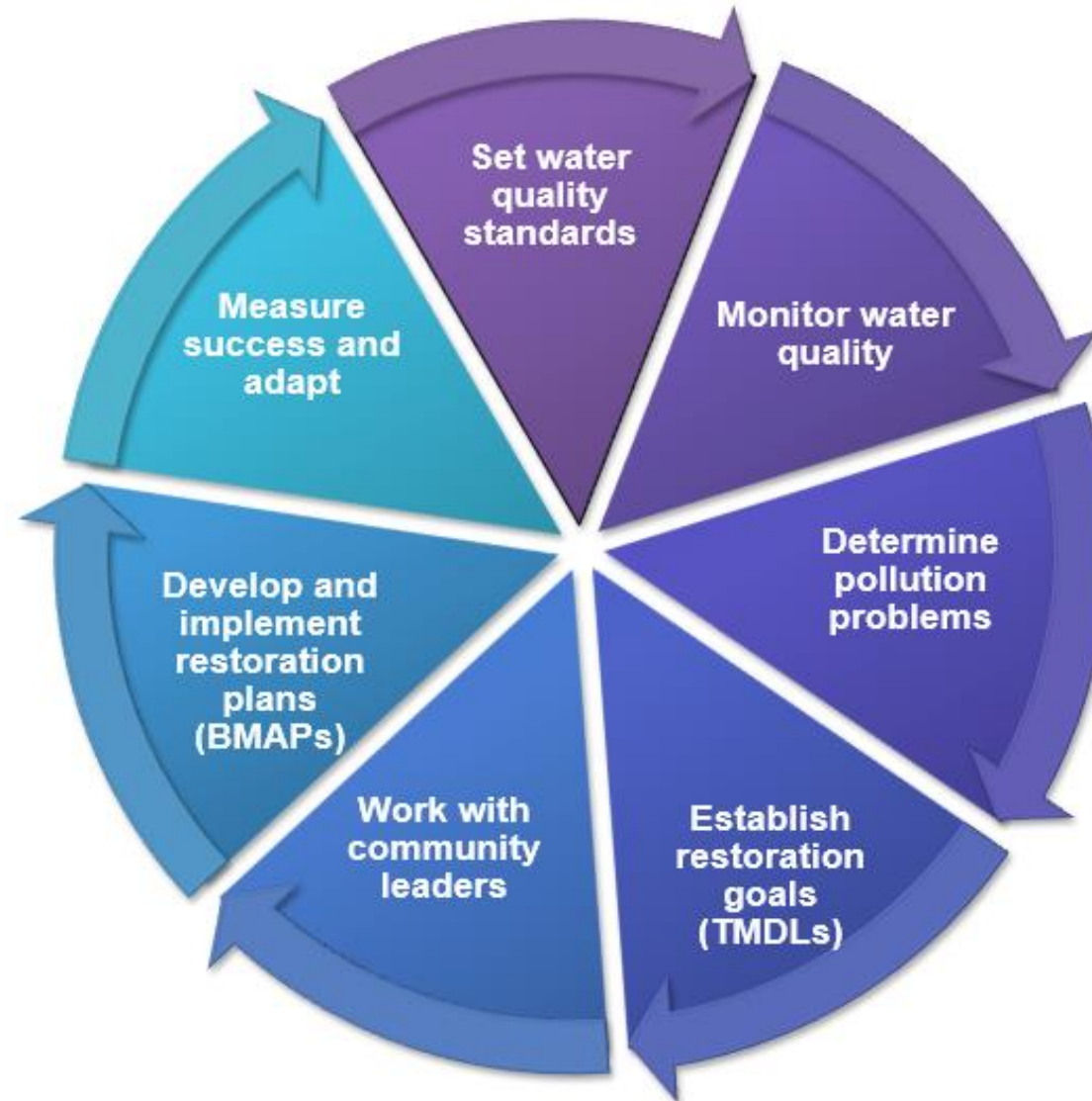
TMDL Prioritization 2.0

Ken Weaver and Ansel Bubel

May 24, 2022

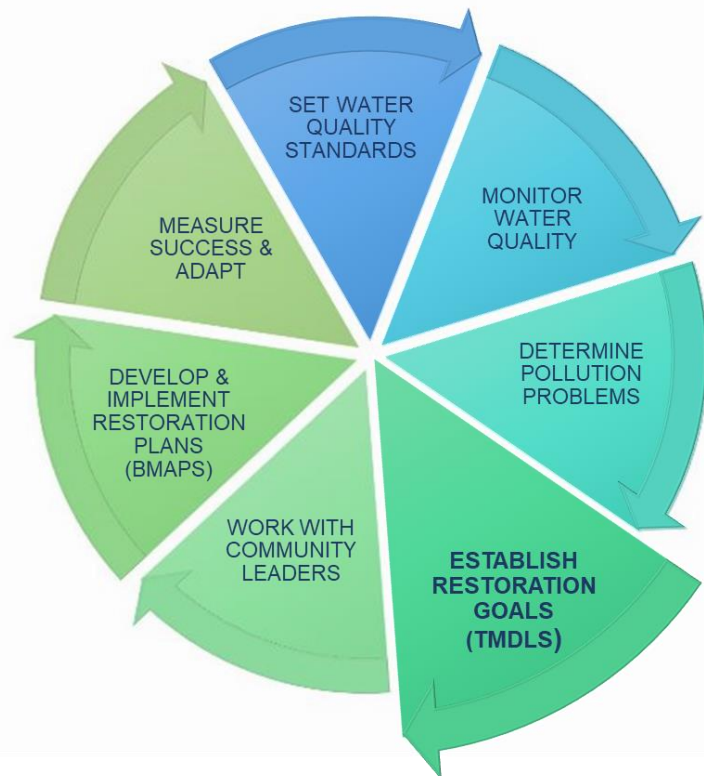


Watershed Restoration Framework





Total Maximum Daily Loads



- Maximum amount of a pollutant that can be introduced into a waterbody without causing exceedances of water quality standards
- TMDLs are water quality restoration targets
- TMDLs must be developed for Verified Impaired waters
- Require significant technical work

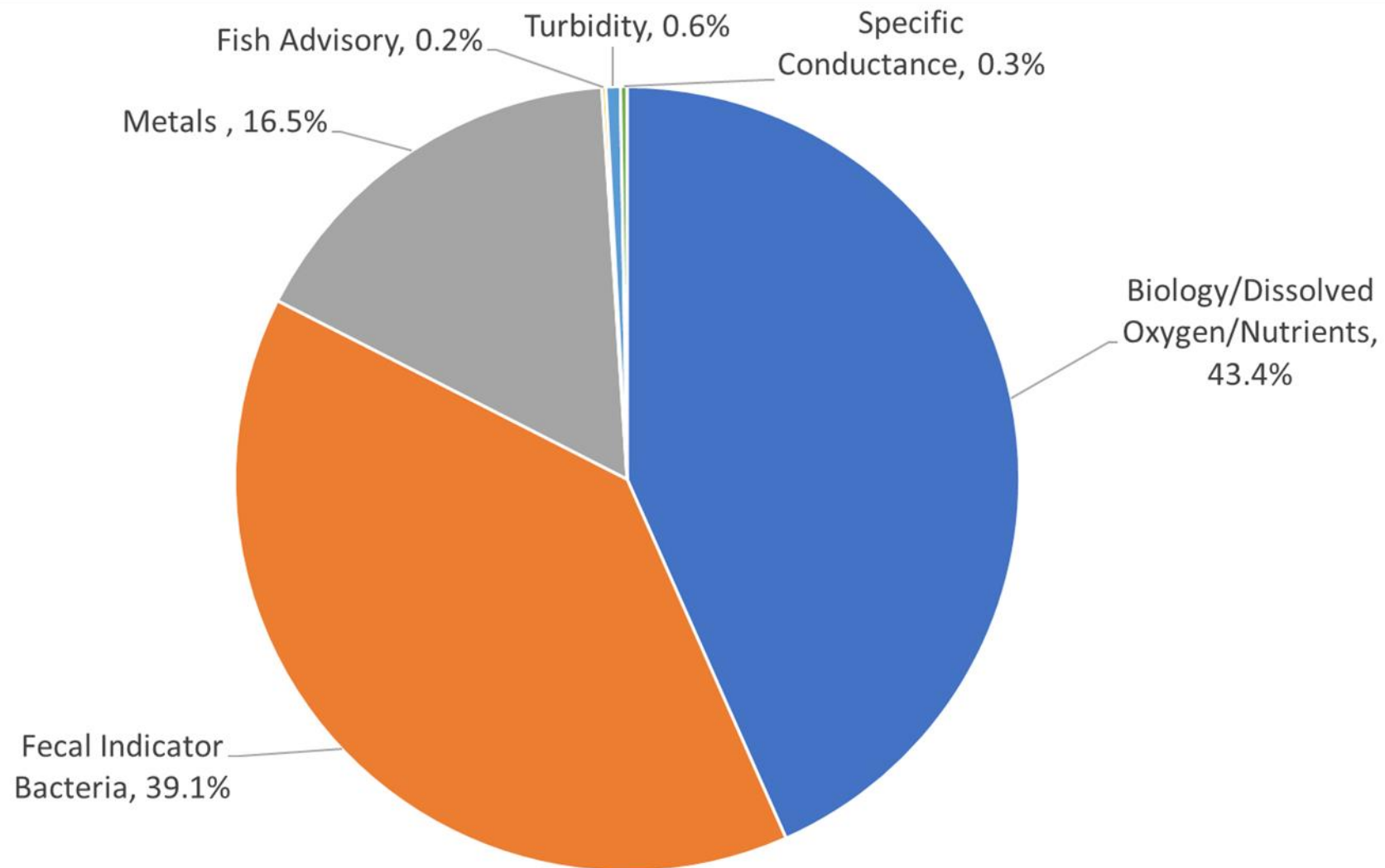


Background

- DEP must prioritize which waters will receive TMDLs first.
 - Workplans required by EPA (Prioritization Framework).
 - Need to effectively manage state resources.
- First Prioritization was created in 2014.
 - Developed schedule and recovery-potential screening approach.
 - Planning horizon through 2022.
- DEP is initiating the next 10-year plan (Prioritization 2.0).
 - New workplans on a 2-year cycle.
 - Maintain focus on nutrients.
 - Bacteria will also be a major component.



Percent Verified Impaired Listings



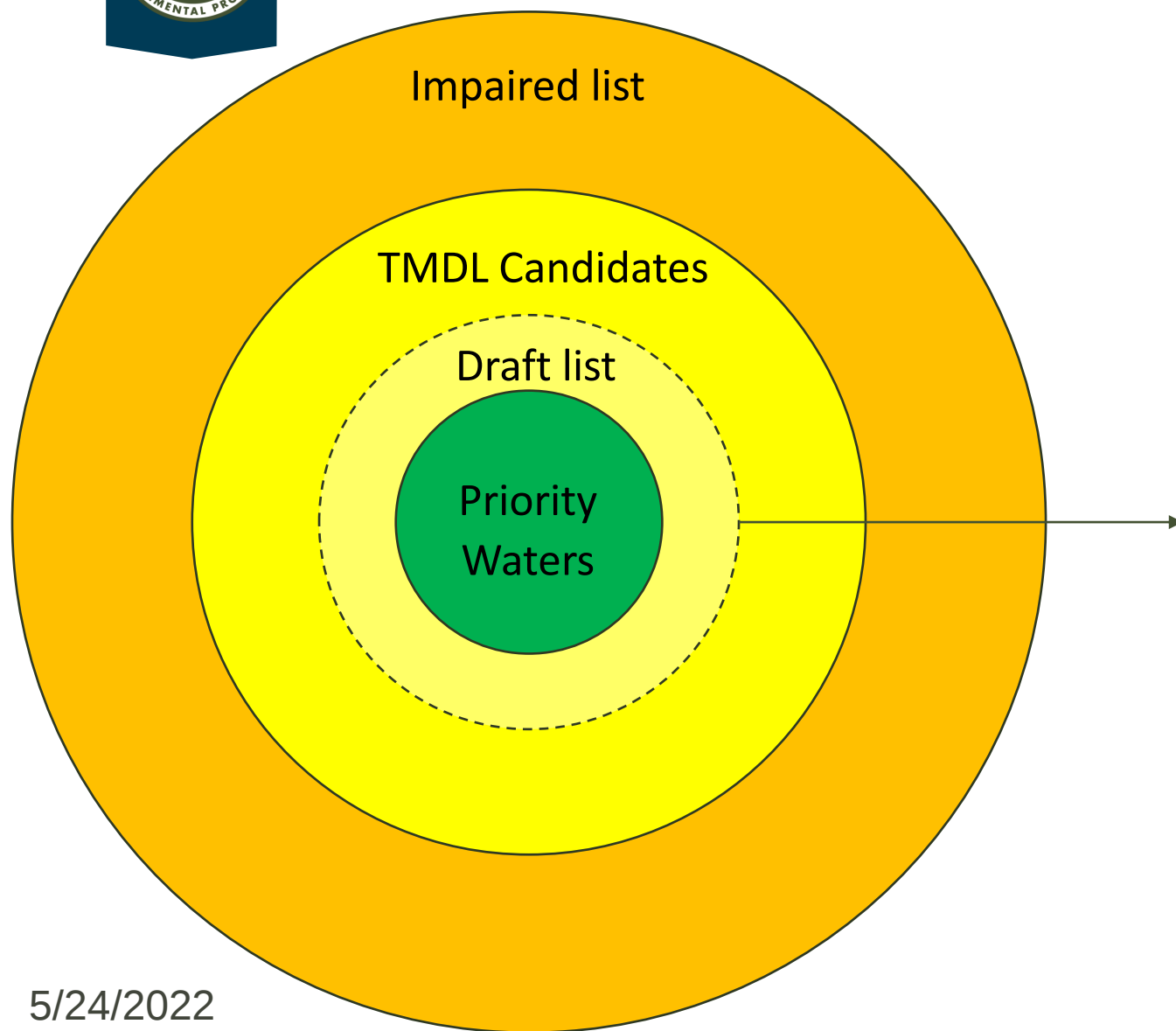


Vision

- Select a set of waters where TMDLs would be the best tool to guide restoration of **ecosystems** and the **communities**, which rely on them.
- Three goals:
 - Enhance program's capacity to develop complex and challenging TMDLs
 - Identify and engage with disadvantaged communities
 - Encourage "Clean Water, Faster" through alternative restoration plans where TMDLs are not the best tool



Structure



2-Year Workplan

- Priority Waters - TMDLs DEP intends to complete in 2-years.
- Draft List - DEP will initiate TMDL development during the 2-year workplan but may not complete TMDL development within the 2-year period.



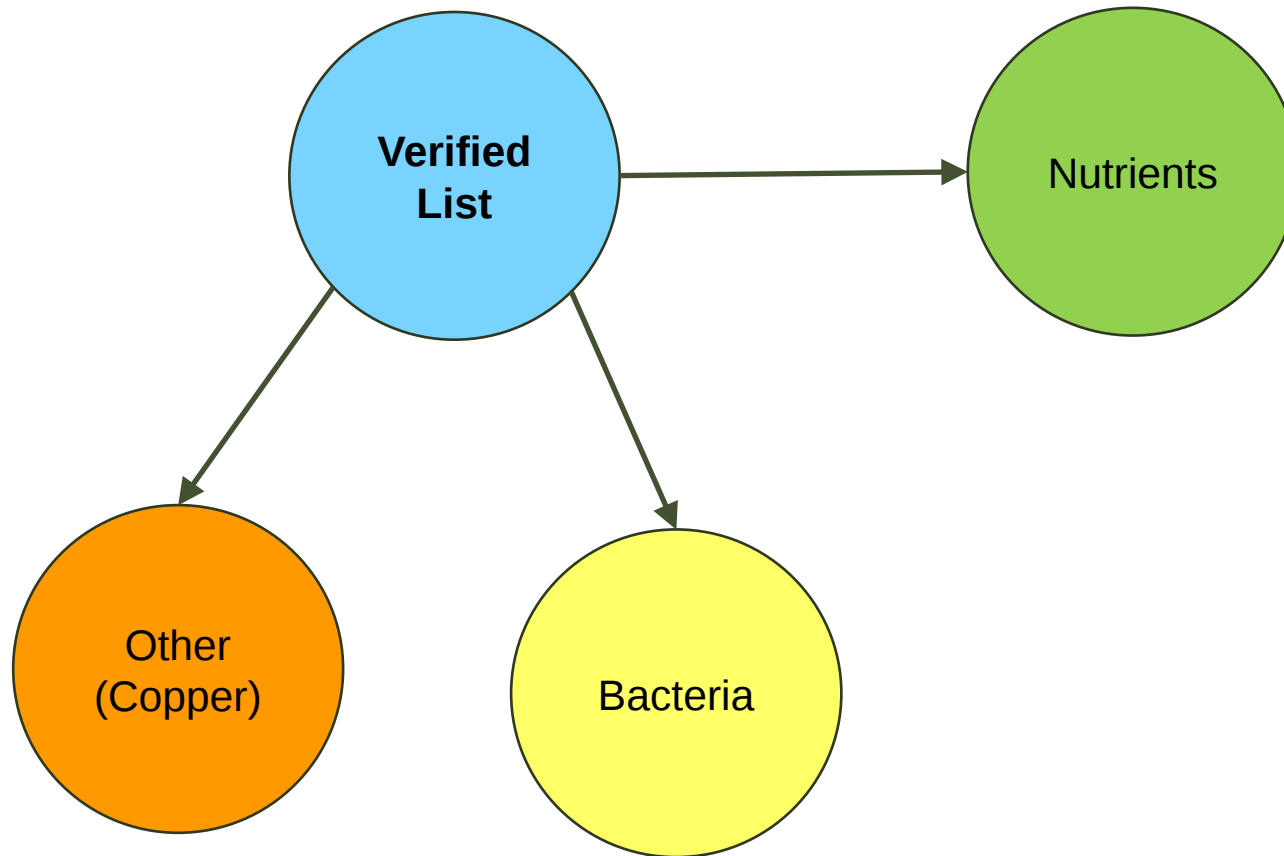
Prioritization Timeline and 303(d) Coordination

Year	BA	Prioritization Activity	TMDL Activities	Bacteria TMDLs
2022		Develop 10-year Prioritization Process and Establish 2-Year Workplan		Pilot-EWC
2023				
2024		Set 2nd 2-year Workplan (IR)		
2025				
2026		Set 3rd 2-year Workplan (IR)		
2027				
2028		Set 4th 2-year Workplan (IR)		
2029				
2030		Set 5th 2-year Workplan (IR)		
2031				



Multi-Faceted Approach

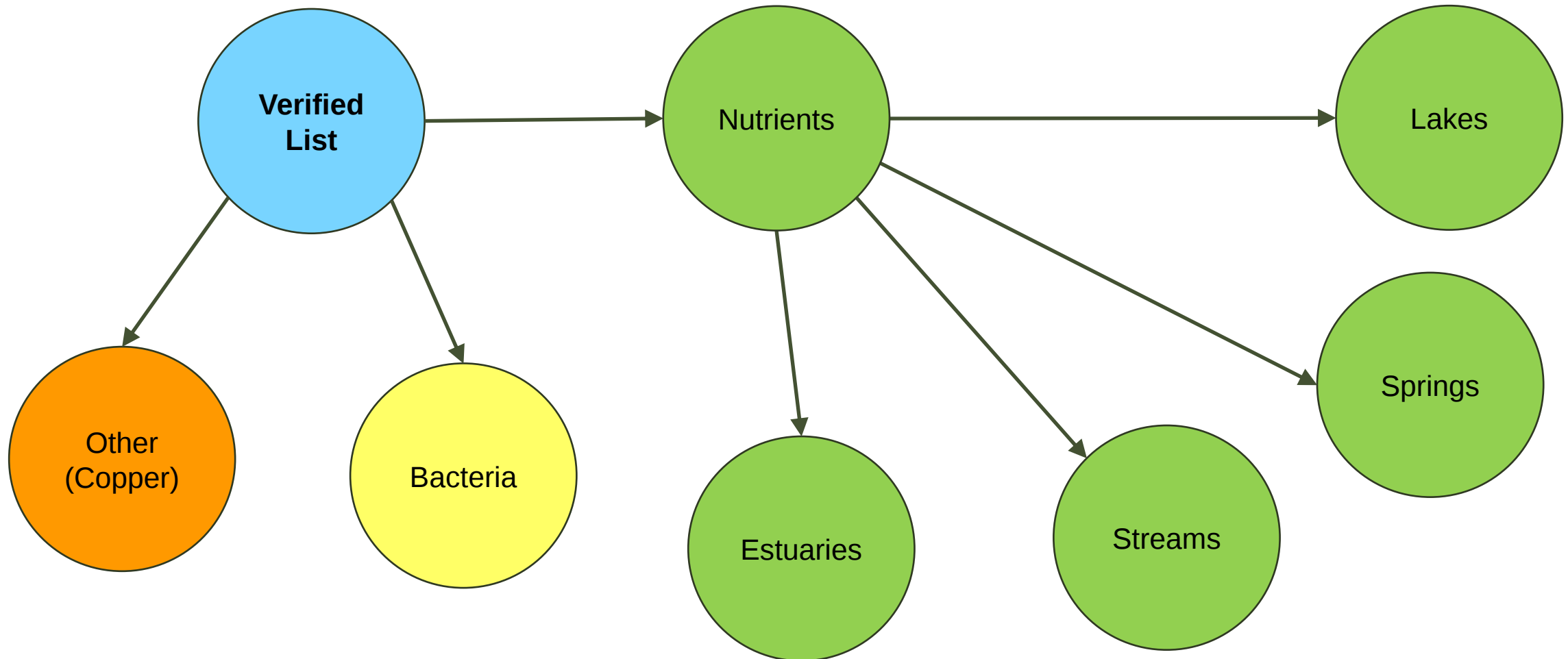
Dependent on impaired parameter and waterbody type





Multi-Faceted Approach

Dependent on impaired parameter and waterbody type





Bacteria

- Human health concern
 - Recreational uses
 - Consumption of shellfish
- Initiated a pilot study in 2022
- Consolidated report covering all new bacteria impairments
 - Every two years
 - Year following the adoption of the Biennial Assessment.





Bacteria TMDL Schedule

- Pilot Study Bacteria TMDLs
 - Public workshop on draft pilot TMDLs – March 29, 2022
 - Discuss comments with stakeholders/Revise document – Spring/Summer 2022
 - Second public workshop Summer 2022
 - Rule adoption – Fall/Winter 2022
- First Consolidated Bacteria TMDLs
 - Initiate TMDL development following resolution of Pilot
 - First 2-year workplan



Bacteria Prioritization Additional Considerations

- Provide opt-in period for alternative restoration plans
 - Letter of intent and commitment of resources from local government entity to initiate a bacteria pollution control plan (4e)
 - Delay TMDL development one 2-year workplan period contingent upon acceptance of a 4e plan



Other Parameters

- Currently considering addressing copper impairments
 - Pilot a regional consolidated approach for impairments in the Naples Bay Area
 - Finalize Naples Bay area copper TMDL on first 2-year workplan
- Other parameters will be considered on first workplans
 - Metals
 - Turbidity
 - Pesticides



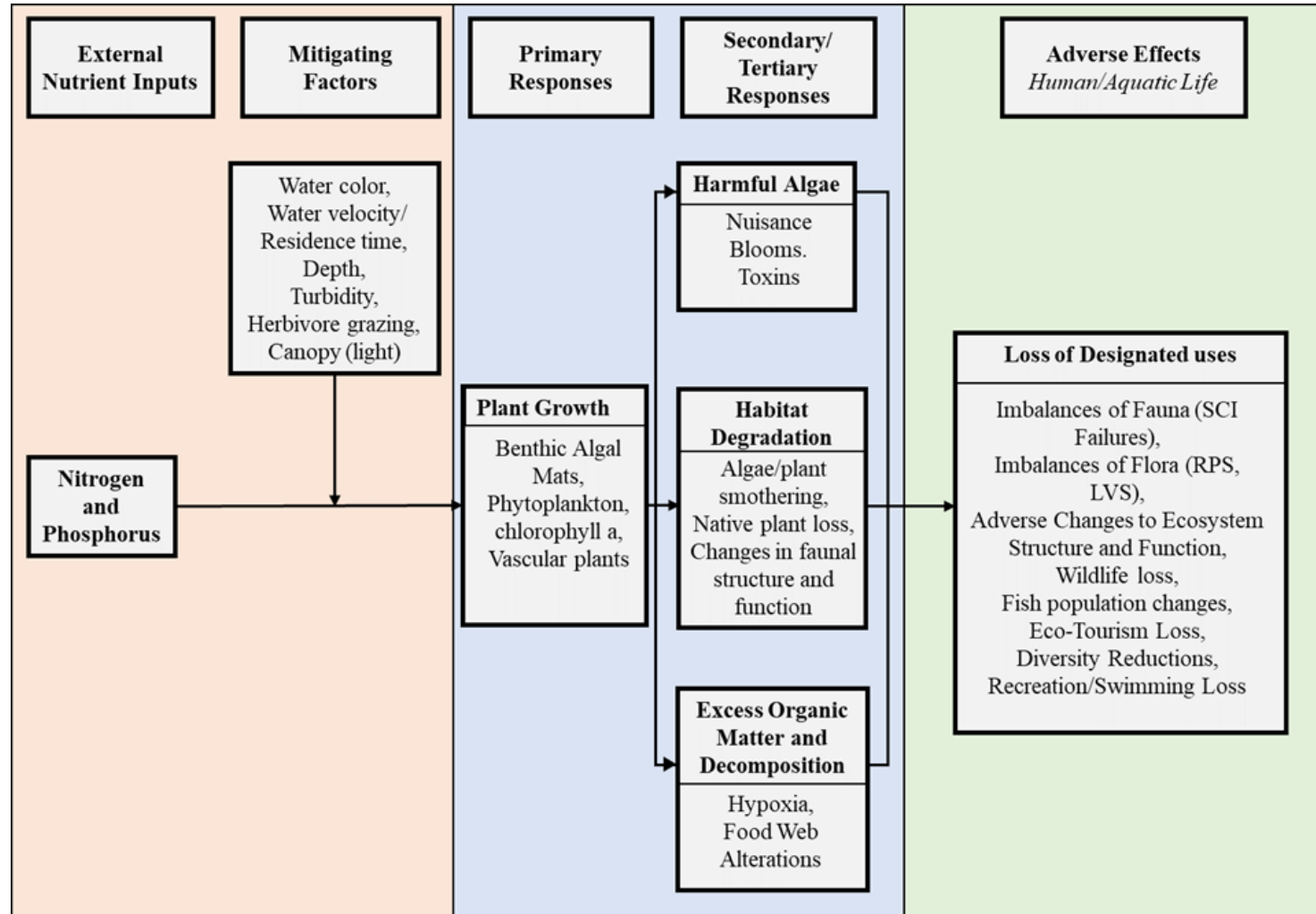
Nutrients

- Complicated relationships between stressors and response.
- Numeric Nutrient Criteria derivation and expression varies by waterbody type.
- Logistical considerations.
 - Model requirements.
 - Methods development.



Nutrients

Conceptual nutrient enrichment model





Florida's NNC

Varies by Waterbody Type

- Estuaries - reference period approach
 - Percentile distribution of years meeting measures of biological health.
 - Site-specific.
- Lakes – empirical relationships between chl-a and TN and TP
 - Lake categories based on color and alkalinity.
- Springs – empirical relationships between periphyton and nitrate, and dosing studies
 - Applies to all springs within the vent.



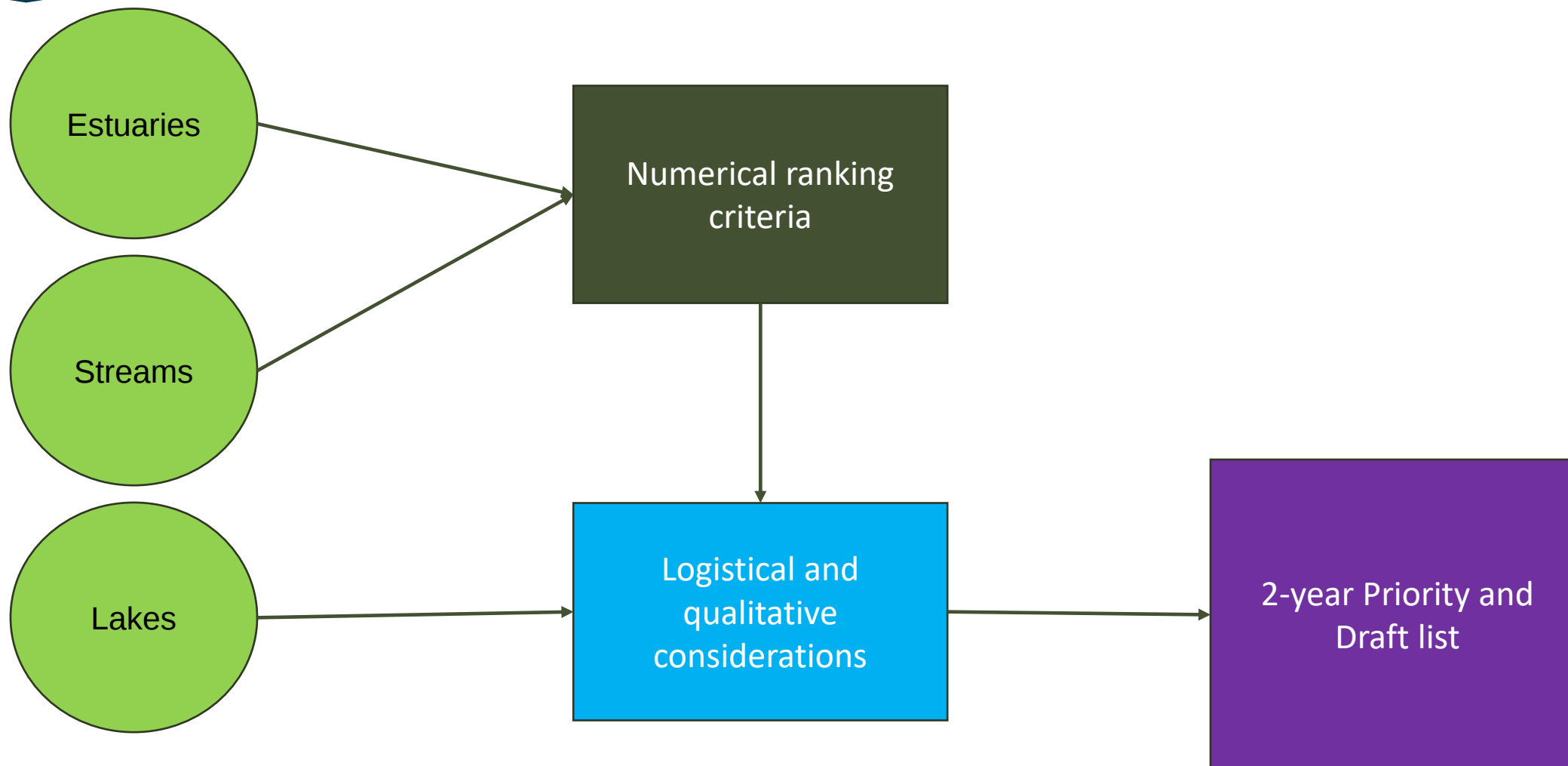
Florida's NNC

Varies by Waterbody Type

- Streams - reference site approach
 - DEP used extensive, multi-step selection process to demonstrate minimally disturbed conditions.
 - Criteria calculated as upper percentile (75th or 90th) of reference sites by region.
 - Includes numerical thresholds.
 - Measures of biological health.
 - Floral evidentiary thresholds (Rapid Periphyton Survey, Linear Vegetation Survey, and Chlorophyll).
 - Fauna (Stream Condition Index).



Nutrient Priority Setting



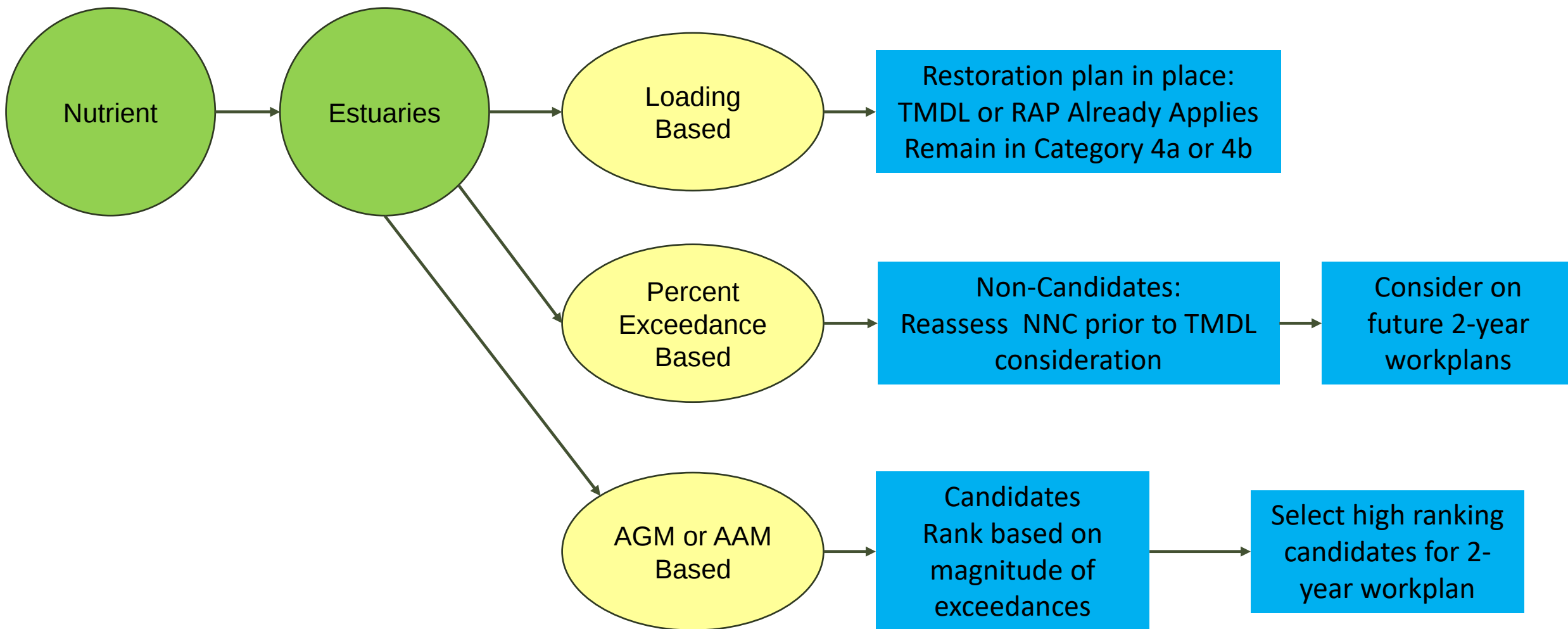


Lake Selection Criteria

- 5 or more years of data (Chl-a, TN, TP) from the most recent 10-year period.
 - Lakes with insufficient data added to the SMP.
- Absence of an existing restoration plan.
- Site specific evaluation for modeling suitability.
- DEP can develop multiple lake TMDLs per year depending on the complexity of the approach.

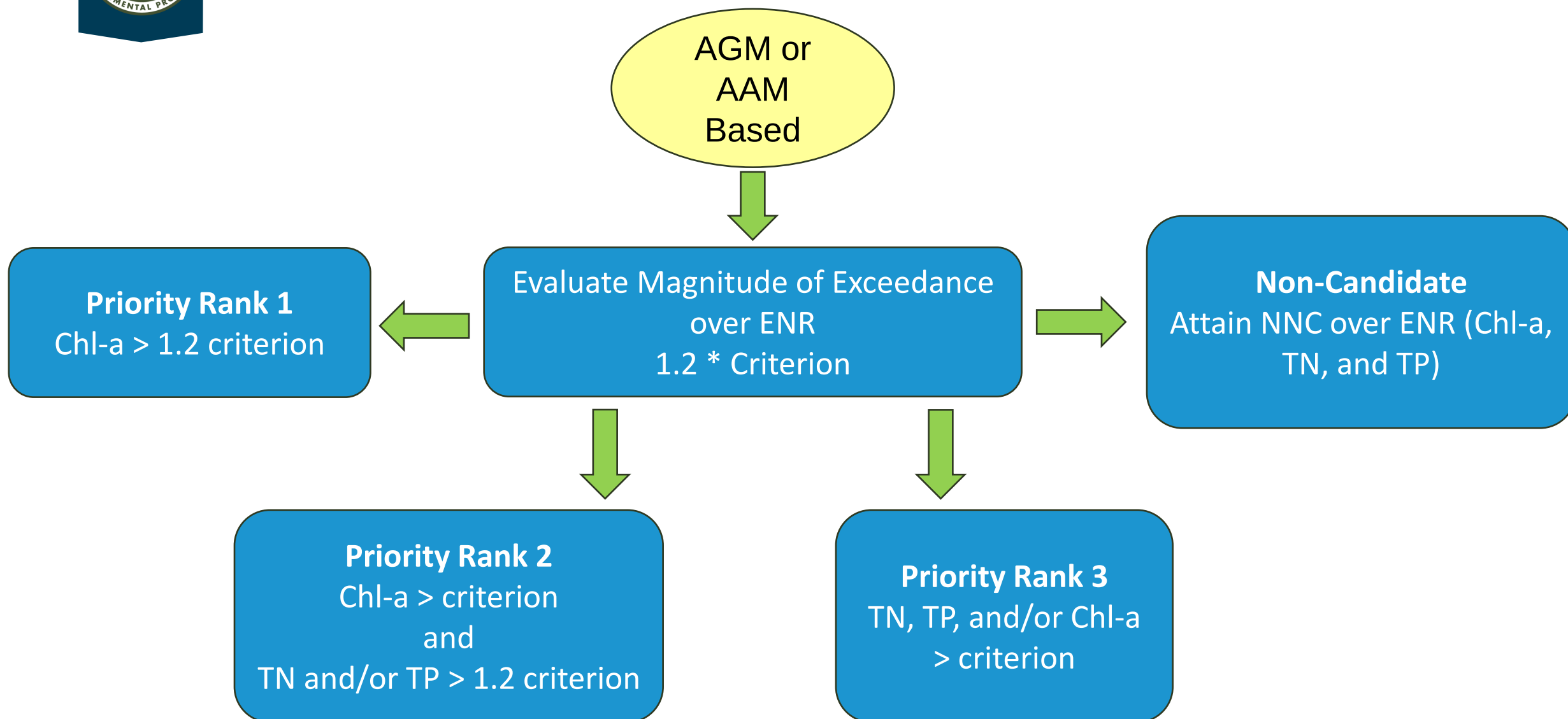


Estuary Nutrients





Setting Estuary Priority Ranks





Estuaries

Other considerations

- Model calibration and validation is time consuming.
- Geographic clustering.
- Stakeholder interest in Reasonable Assurance Plans (RAP).
- DEP intends to include up to 3 estuaries on draft list.



Stream Priority Selection Process

- Based on Habitat Assessment (WBID Max)
 - Partially linked to stream exclusion requirements
 - Lower priority for streams that may be hydrologically and physically altered
 - Potential managed systems

Stream Priority	HA Score	Artificial Channelization Score	Notes
4	≤40	N/A	Reconsider after stream exclusion review
4	>40-80	≤5	
3	>40-80	>5-10	Requires additional review of stream exclusion and stressors
3	>80-100	≤5	
2	>80-100	>5-10	Need additional decision criteria
1	>80-100	>10	Need additional decision criteria
1	>100	N/A	



Streams: First 2-year period

- Select from Priority Rank 1 or 2 streams.
- Focus on Capacity Building.
- Low-hanging fruit:
 - Streams in cat. 5 for exceeding SCI and nutrient threshold(s) that attain flora metrics, and/or
 - Stream in cat. 5 for Chl-a and nutrient thresholds(s) that attain RPS and LVS.
- Potentially, include two streams on the draft list for the first 2-year workplan.



2-Year Priority Selection

- Waterbody type and parameter specific ranking.
- Data availability.
- Geographic clustering.
- Selection of appropriate modeling tools.
- Proximity to OFW, Aquatic Preserve, or Park.
- Community concerns.
 - 2nd 2-year period (2024).
 - Requires community engagement.

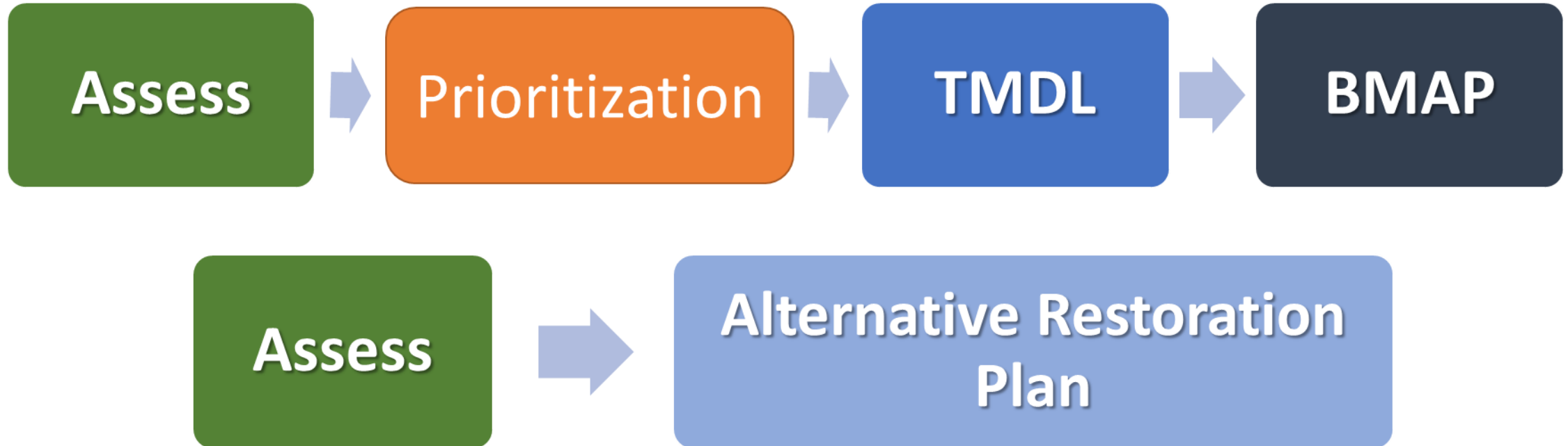


Other Considerations

- Alternative Restoration Plans
- Community Needs
- Climate Change



Pathways to Restoration



Both pathways have the same goal:
Water Quality Restoration



Alternative Restoration Plans

- Reasonable Assurance Plan (RAP)
 - Replaces a TMDL and BMAP
 - Assessment Category 4b
 - Not Placed on the 303(d) List
- Pollutant Reduction Plan (PRP)
 - Defers TMDL development by DEP while stakeholders implement pollutant reduction projects
 - Assessment Category 4e
 - Included on the 303(d) List



Alternative Restoration Plans

TMDL Prioritization

- Timing – sooner is better
 - Ideally, initiate plan development during the assessment, prior to Verified Listing.
 - DEP will consider the expected development and implementation schedule
 - Unlikely that DEP will accept a proposed plan if TMDL development has already been initiated.
- Proposed RAPs (4b) may be added to the draft list
 - Can the planned activities be initiated before a TMDL can be developed?
 - Cleaner Water, Faster.



Incorporating the Needs of Economically Disadvantaged and Underserved Communities

- **2022: Identify economically disadvantaged communities**
 - GIS level analysis using demographic data
 - 2022-2023: Incorporate findings into Strategic Monitoring Plan
- **2022 – 2024: Work with DEAR programs to identify community needs and concerns**
 - Initiate community outreach
 - Receive community input on water priorities
- **2024 – 2026: Adjust DEAR efforts to address concerns identified in the previous 2-year block**
 - Incorporate community needs/input into TMDL prioritization
- **2026 – 2030: Implement solutions, continue dialog with communities, and evaluate results**



Climate Change

- DEP will continue to build capacity to evaluate impact of climate change on water quality.
- Assess potential for Onsite Sewage Treatment and Disposal System (OSTDS) failures in low-lying coastal areas.
- Evaluate whether the effectiveness of stormwater treatment may be hindered by rising sea level.



Next Steps

- Request comments on the Prioritization 2.0 process by June 10, 2022.
- DEP will review comments and consider revision to processes.
- Develop 2-year workplan in June – July 2022.
- Hold second workshop
 - Changes to process
 - 2-year workplan

Ken Weaver
Program Administrator
Assessments and TMDL
(850) 245-8414

Kenneth.Weaver@FloridaDEP.gov



Ansel Bubel
Environmental Administrator
TMDL Section
(850) 245-8072
Ansel.Bubel@FloridaDEP.gov