Indicator Framework

SUPPORTING THE CHESAPEAKE BAY PROGRAM INTO THE FUTURE

Management Board Meeting

September 30, 2015

Purpose of Today's Meeting

RECOMMENDED DECISIONS

▶ Adopt recommended update of CBP Indicators Framework

▶ Approve Indicators Management Process (as outlined in Whitepaper)

▶ Direct STAR to re-launch the Status & Trends Workgroup to implement the CBP Indicators Framework in coordination with GIT leads and STAC

ADDITIONAL UPDATES

▶ Additional work to be completed

Agenda → Finalizing Our Work

I. Background

II. New CBP Indicators Framework

III. Indicators & Adaptive Management

IV. Communicating our Work: Transparent and Accountable

V. Managing Indicators

VI. Recommendations

VII. Next Steps

I. Background

GETTING ON THE SAME PAGE
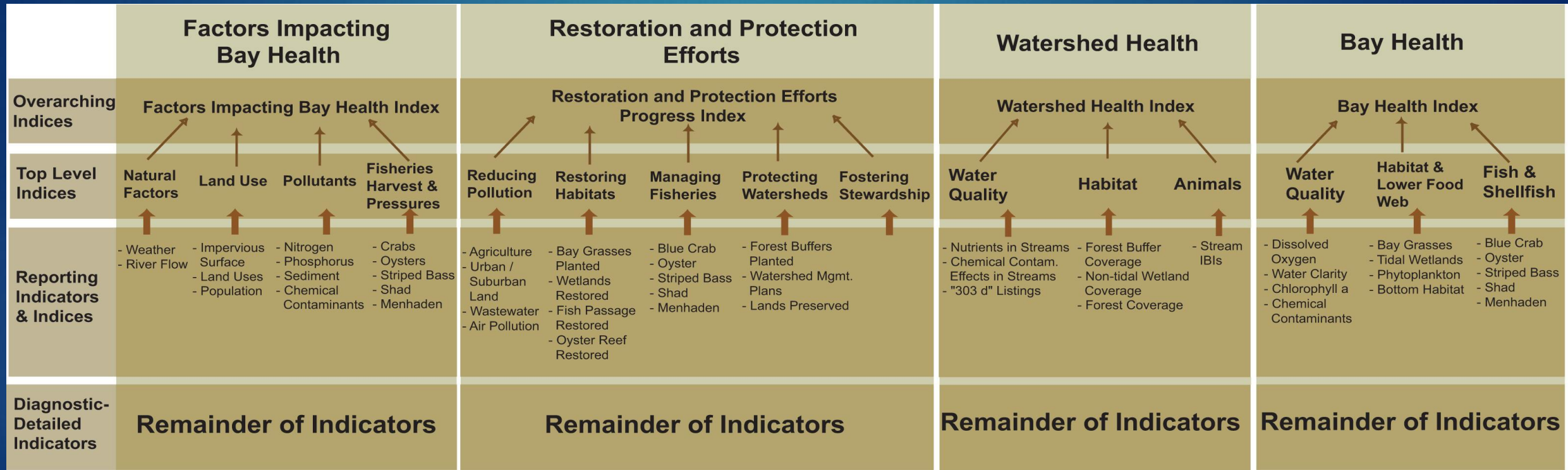
IF–Action Team Mission & Objectives

Mission: To recommend an Indicators Framework to the Management Board by Sept. 2015.

1. **Revise Indicators Framework (IF)** to better support our work, and meet the following goals:
   a. Align indicators to the Agreement;
   b. Support adaptively managing; and
   c. Communicate progress.
2. **Support transparency efforts** with Independent Evaluator (described in Chesapeake Bay Accountability and Recovery Act).
3. **Establish process** to approve and update new indicators, and adjust framework as needed.

Re-Cap of Need

- Current Indicator Framework 10 years old.
  - Based on the Chesapeake 2000 commitments and focused on communication to the public.
- Framework has not kept current with numerous Bay Program changes.
  - e.g., Bay TMDL, Executive Order, Decision Framework, Bay Watershed Agreement).
- Better alignment needed with Chesapeake Bay Program work.

Old Indicators Framework

	Factors Impacting Bay Health	Restoration and Protection Efforts	Watershed Health	Bay Health
Overarching Indices	Factors Impacting Bay Health Index	Restoration and Protection Efforts Progress Index	Watershed Health Index	Bay Health Index
Top Level Indices	Natural Factors · Land Use · Pollutants · Fisheries Harvest & Pressures	Reducing Pollution · Restoring Habitats · Managing Fisheries · Protecting Watersheds · Fostering Stewardship	Water Quality · Habitat · Animals	Water Quality · Habitat & Lower Food Web · Fish & Shellfish
Reporting Indicators & Indices	- Weather - River Flow - Impervious Surface - Land Uses - Population - Nitrogen - Phosphorus - Sediment - Chemical Contaminants - Crabs - Oysters - Striped Bass - Shad - Menhaden	- Agriculture - Urban / Suburban Land - Wastewater - Air Pollution - Bay Grasses Planted - Wetlands Restored - Fish Passage Restored - Oyster Reef Restored - Blue Crab - Oyster - Striped Bass - Shad - Menhaden - Forest Buffers Planted - Watershed Mgmt. Plans - Lands Preserved	- Nutrients in Streams - Chemical Contam. Effects in Streams - "303 d" Listings - Forest Buffer Coverage - Non-tidal Wetland Coverage - Forest Coverage - Stream IBIs	- Dissolved Oxygen - Water Clarity - Chlorophyll a - Chemical Contaminants - Bay Grasses - Tidal Wetlands - Phytoplankton - Bottom Habitat - Blue Crab - Oyster - Striped Bass - Shad - Menhaden
Diagnostic-Detailed Indicators	Remainder of Indicators	Remainder of Indicators	Remainder of Indicators	Remainder of Indicators

⬆ = direct numerical relationship

A Few Definitions

Outcome

- What is specifically sought to be achieved. Progress toward an outcome is determined through the use of measurable indicators.

Indicator

- A summary measure that provides information on the state of, or change in, the system that is being measured.

Metric

- The measured value(s) used to assess specific indicators. It defines the units and how the indicator is being measured.
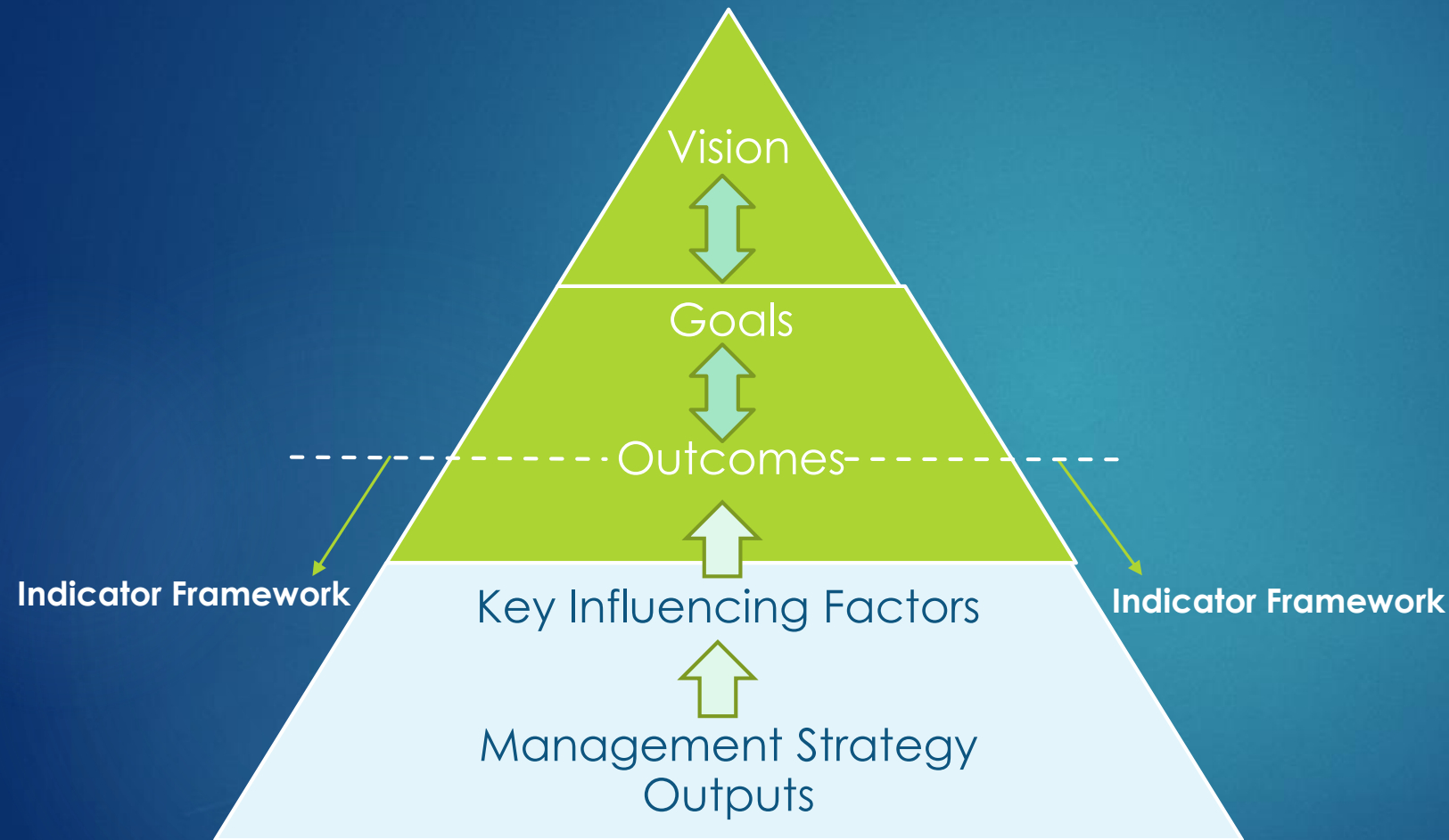
Indicator Framework

- A conceptual model that demonstrates the relationships between and describes how indicators will be used.

II. New CBP Indicators Framework

ALIGNS WITH THE CHESAPEAKE BAY WATERSHED AGREEMENT

Aligning with the Agreement

Vision

Goals

Outcomes

Indicator Framework   **Indicator Framework**

Key Influencing Factors

Management Strategy Outputs

FINDING: The NEW Indicators Framework is **ALIGNED** with the Agreement at the Outcome level.

Agreement GOALS that support achieving the **VISION** are aligned with the mission of the CBP.

Fully achieving CBP's Vision and Goals will require us to reach beyond traditional partners to involve others with complementary missions and goals.

Agreement OUTCOMES are those aligned with the CBP mission, programs and resources.

Outcomes are achieved through implementing the Decision Framework.

Indicators Framework
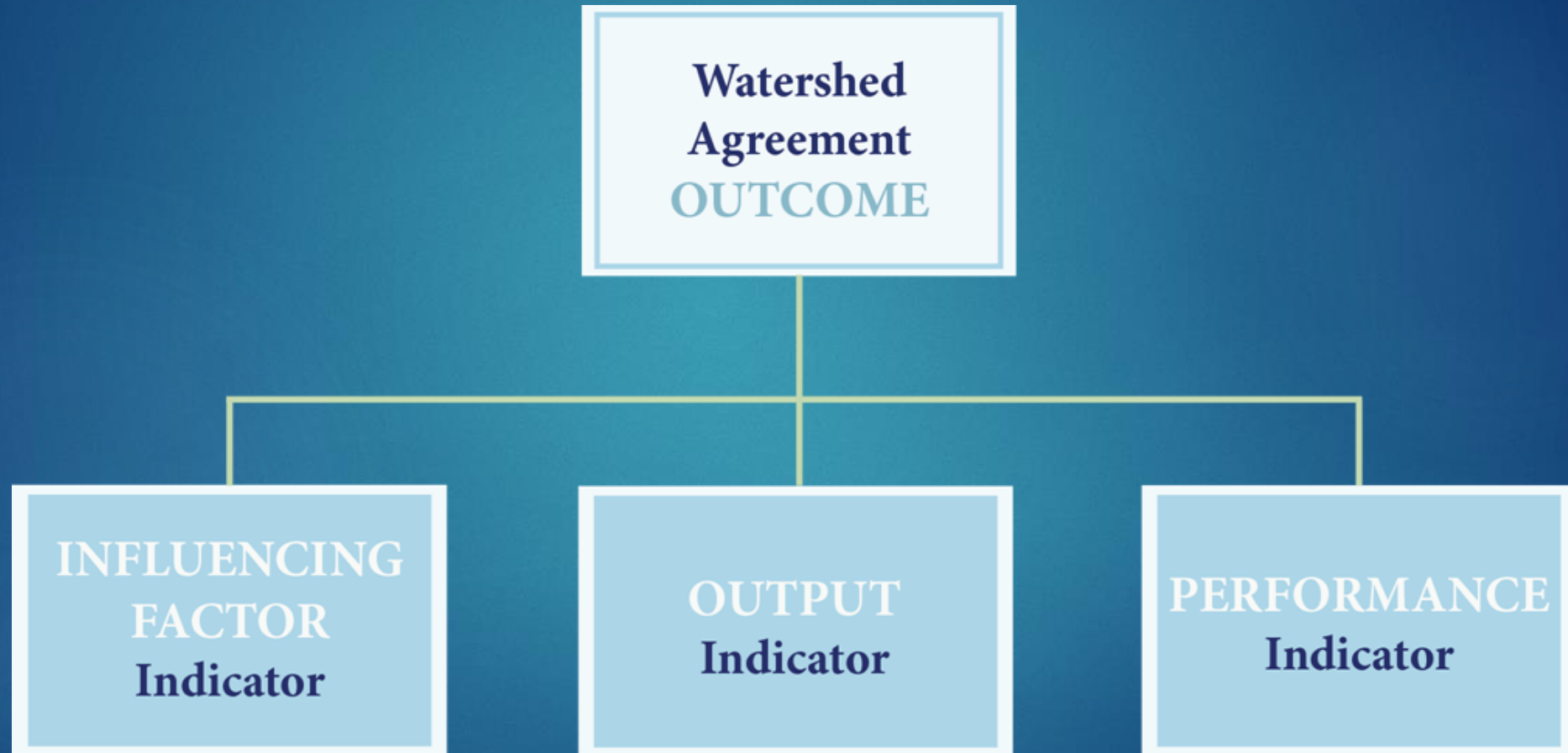
Finding: *Our current suite of indicators only partially support tracking performance & achievement of the Vision, Goals, and Outcomes of the Agreement.*

At the most basic level of tracking performance...

We have established indicators to track progress toward 9 outcomes.

We are developing indicators to track progress toward 12 outcomes.

Another 10 outcomes do not have any indicators at all.

Outcomes with Established Performance Indicators

- Blue Crab Abundance and Blue Crab Management
- Fish Passage
- Submerged Aquatic Vegetation (SAV)
- 2017 and 2025 Watershed Implementation Plans (WIPs)
- Water Quality Standards Attainment and Monitoring
- Protected Lands
- Public Access

Outcomes with Performance Indicators Under Development

- Oyster
- Brook Trout
- Stream Health
- Wetlands
- Forest Buffer
- Healthy Watershed
- Tree Canopy

- Toxic Contaminants Policy and Prevention
- Citizen Stewardship
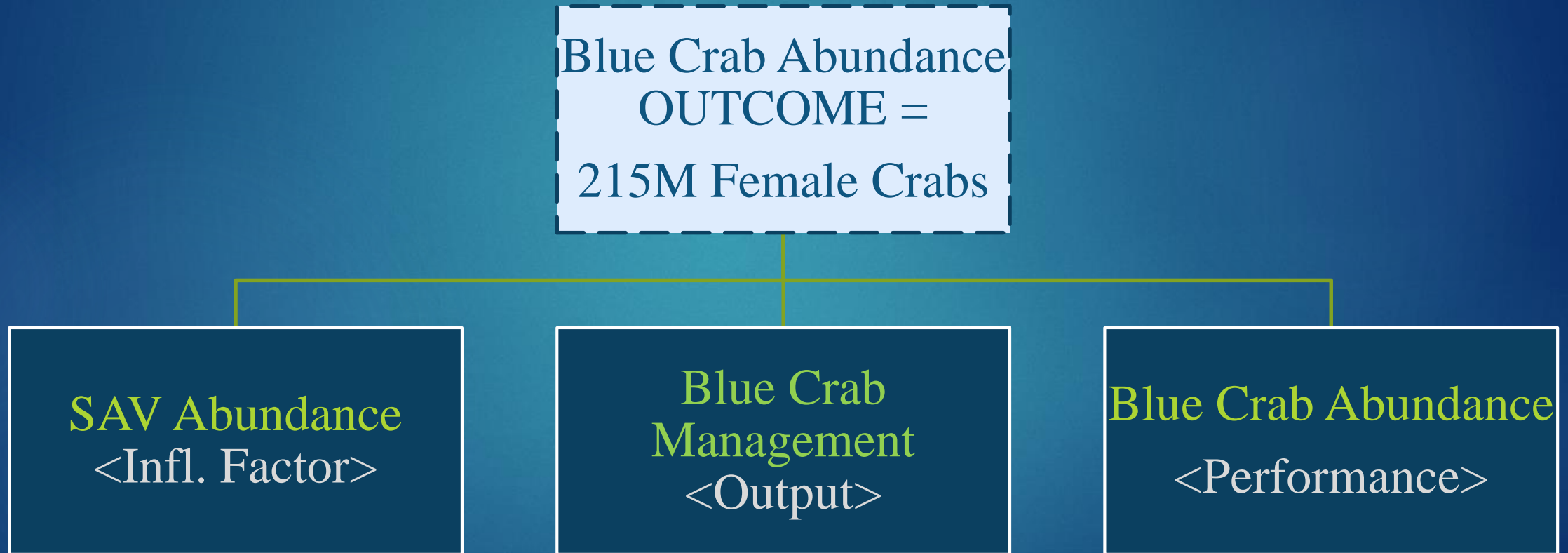- Student
- Sustainable Schools
- Environmental Literacy

Outcomes **without** Performance Indicators

- Fish Habitat
- Forage Fish
- Black Duck
- Toxic Contaminants Research
- Local Leadership
- Diversity

- Land Use Methods and Metrics Development
- Land Use Options Evaluation
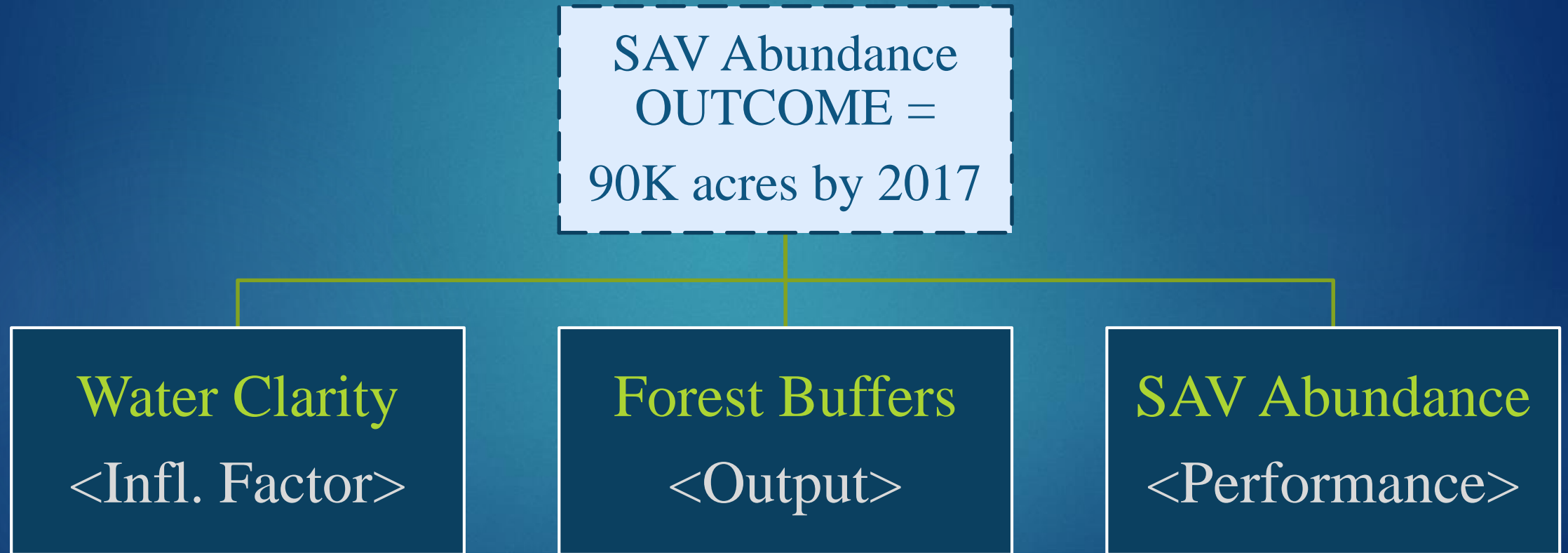- Climate Monitoring and Assessment
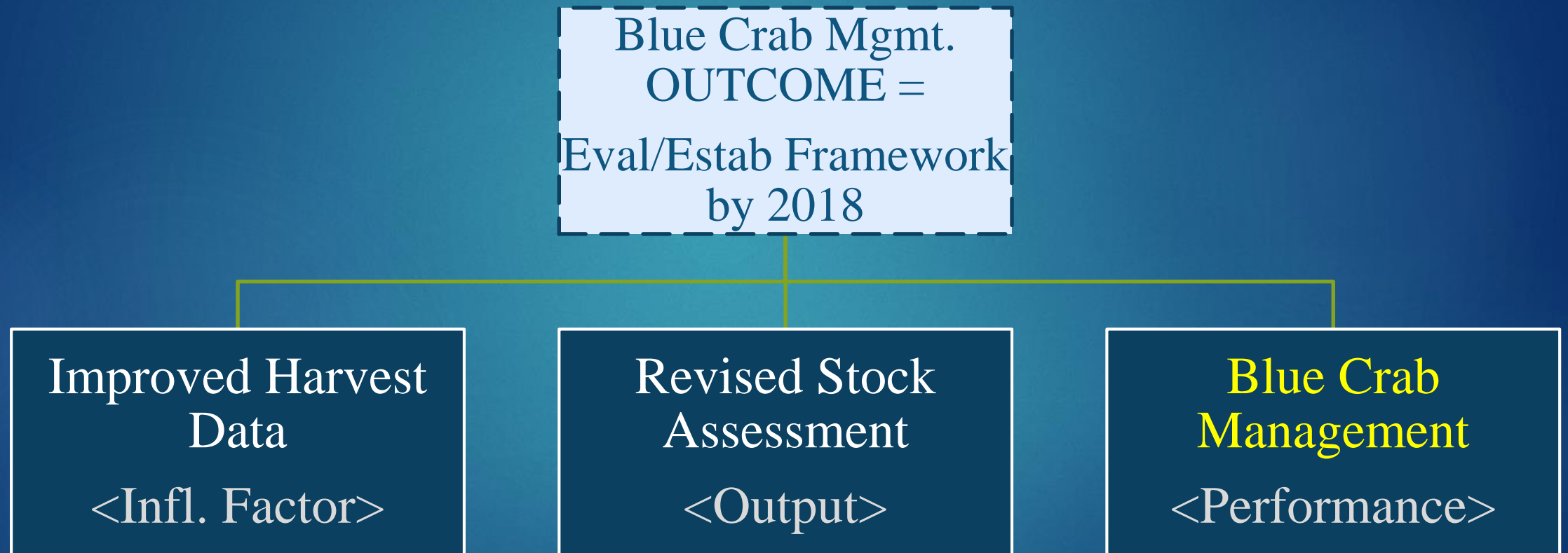- Climate Adaptation

But that's just performance!

What other indicators do we have?

Blue Crab Abundance
OUTCOME =

215M Female Crabs

SAV Abundance
<Infl. Factor>

Blue Crab
Management
<Output>

Blue Crab Abundance
<Performance>

Cross-outcome connections are vital!

SAV Abundance OUTCOME =

90K acres by 2017

Water Clarity

<Infl. Factor>

Forest Buffers

<Output>

SAV Abundance

<Performance>

Final example…

Blue Crab Mgmt.
OUTCOME =
Eval/Estab Framework
by 2018

Improved Harvest Data
<Infl. Factor>

Revised Stock Assessment
<Output>

Blue Crab Management
<Performance>

And what about adaptive management?

III. Indicators & Adaptive Management
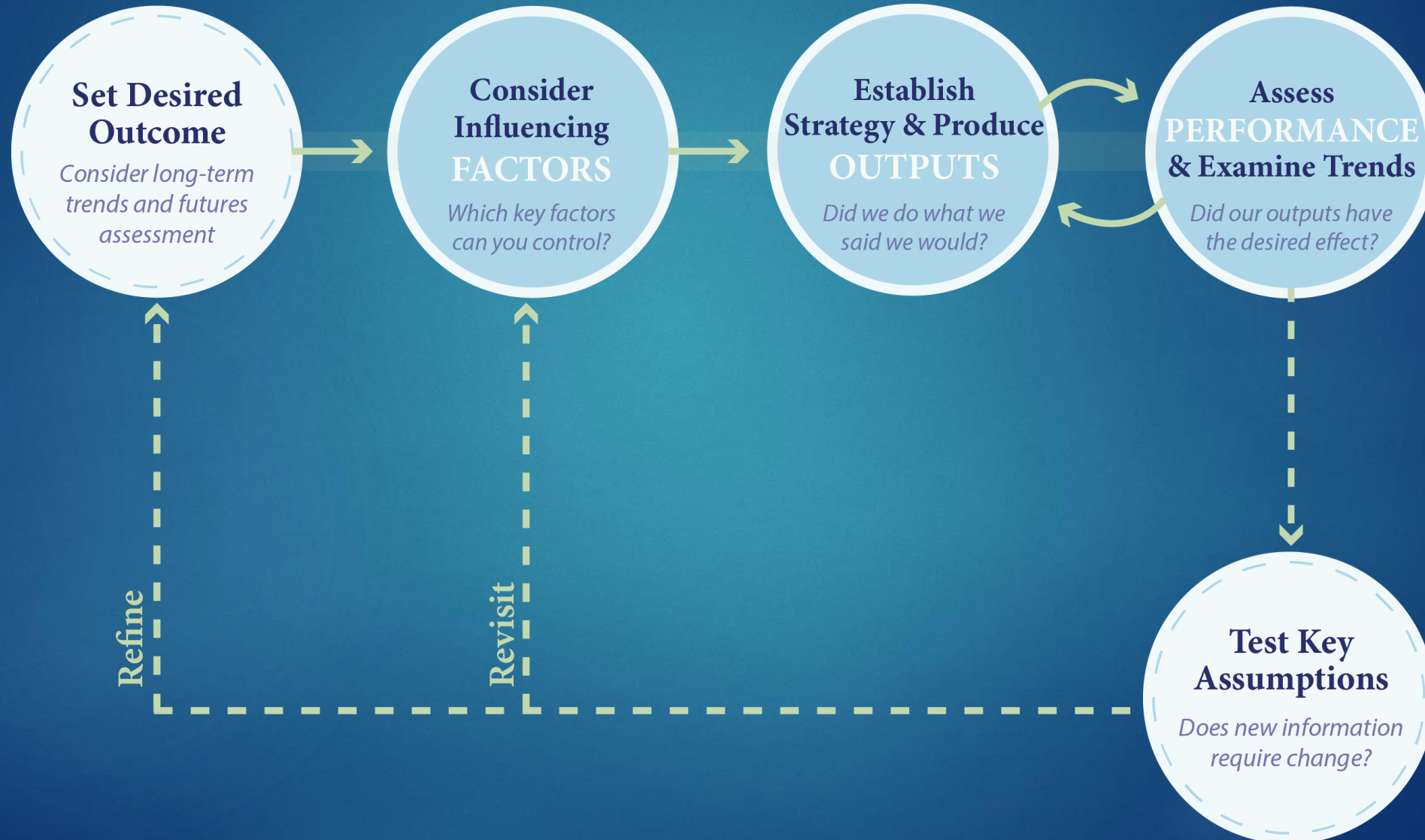
SUPPORTING ADAPTIVE MANAGEMENT

Finding:
Indicators are most effective when we understand how they support and relate to the Decision Framework.

→ *To support adaptive management, we need information about environmental success and information about activities and factors that support environmental success.*

Using Indicators in Simplified Decision Framework

Set Desired Outcome
Consider long-term trends and futures assessment

Consider Influencing FACTORS
Which key factors can you control?

Establish Strategy & Produce OUTPUTS
Did we do what we said we would?

Assess PERFORMANCE & Examine Trends
Did our outputs have the desired effect?

Refine

Revisit

Test Key Assumptions
Does new information require change?

IV. Communicating Our Work

TRANSPARENT AND ACCOUNTABLE

Finding: *There are key types of information we need to communicate how we're doing, what we're doing and why we're doing it.*

CBP Indicators Address 3 Basic Types of Information

- What KEY influencing factors are impacting achievement of outcome? **→ INFLUENCING FACTOR**
- Are we doing what we said we would do? **→ OUTPUT**
- Are we achieving the outcome? **→ PERFORMANCE**

ChesapeakeProgress will include all indicator types upon launch, but we won't have all types for each outcome.

Finding: *ChesapeakeProgress supports transparency and accountability and can be used by the Independent Evaluator to report on restoration activities (under CBARA).*
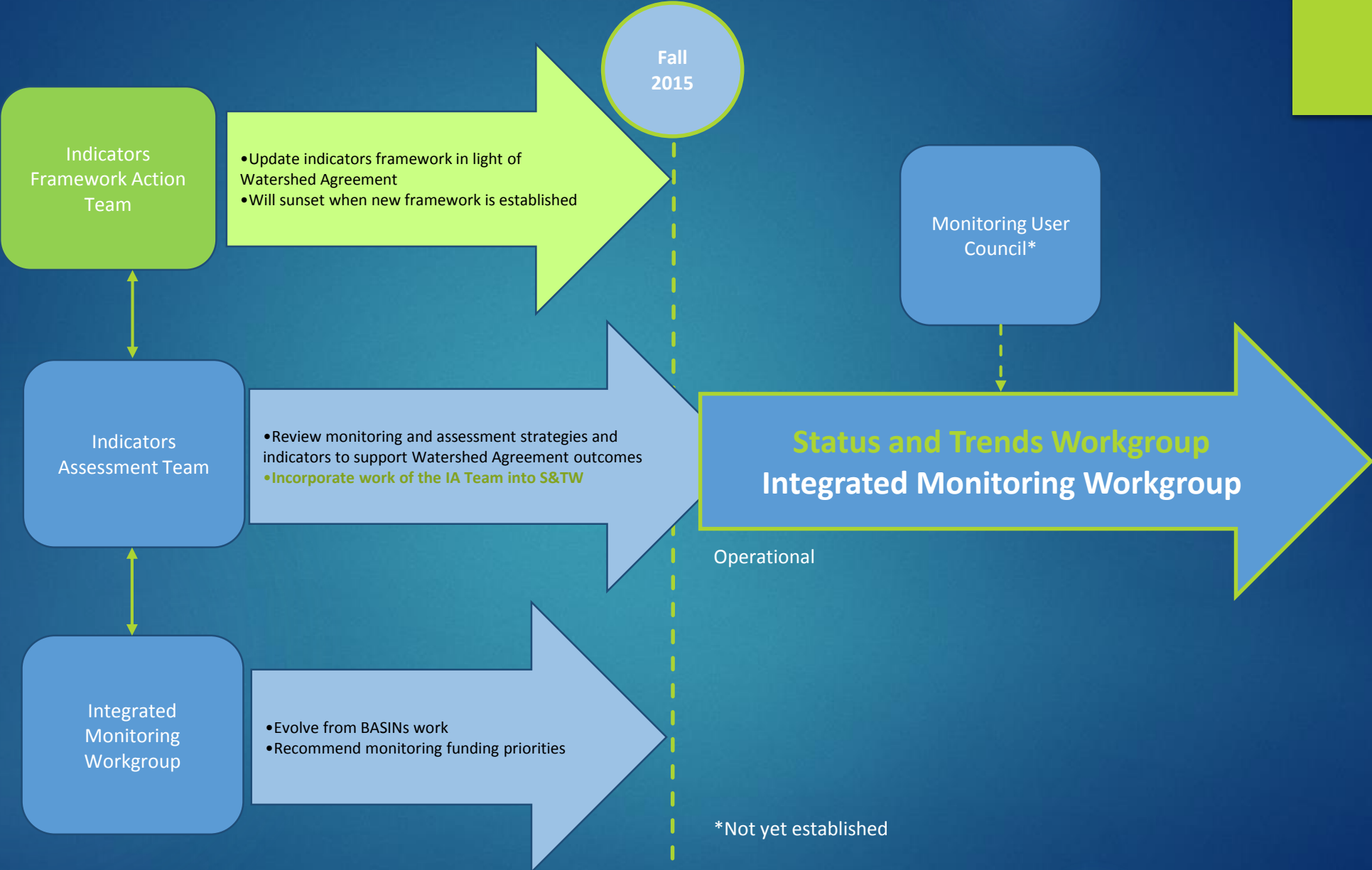
V. Managing Indicators

CRADLE TO GRAVE

Finding: *Indicators approval process requires coordination among GITs, Status and Trends Workgroup, data providers, and Communication Team.*

Recommendation: Approve Indicator Management Process articulated in attached Whitepaper.

Indicators Framework Action Team

- Update indicators framework in light of Watershed Agreement
- Will sunset when new framework is established

Fall 2015

Monitoring User Council*

Indicators Assessment Team

- Review monitoring and assessment strategies and indicators to support Watershed Agreement outcomes
- **Incorporate work of the IA Team into S&TW**

Status and Trends Workgroup
Integrated Monitoring Workgroup

Operational

Integrated Monitoring Workgroup

- Evolve from BASINs work
- Recommend monitoring funding priorities

*Not yet established

Recommendation: Re-start STAR Status and Trends Workgroup.

Mission: Enforce the integrity of the Indicators Framework. Ensure up-to-date indicators for Partnership products. Foster cross-outcome collaboration.

Recommended membership: GIT reps., GIS, Indicator Coordinator, Monitoring reps., STAR Analyst, Communications, ChesapeakeStat rep.

V. Recommendations

FOR YOUR APPROVAL

Review Recommendations

RECOMMENDED DECISIONS

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VI. Re-Cap and Next Steps

FINALIZING OUR WORK

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Next Steps for Action Team and Wrap-up

▶ Finalize steps for archiving an Indicator.

▶ Support Status & Trends Workgroup start-up.

▶ Prepare recommendations for a Cross-Outcome Indicator Process to present at a future MB meeting.

▶ Prepare recommendations for a process to help our Agreement evolve (even while we implement it) for presentation at a future MB mtg.

▶ Have a party! ☺

Membership

- Carin Bisland (OPA, GIT6)
- Rich Batiuk (OSAI)
- Mark Bennett (STAR)
- Bill Dennison (STAR)
- Melinda Ehrich (STAR)
- Margaret Enloe (Communications Team)
- Jennifer Gundersen (BAT)
- Catherine Krikstan (Comm. Workgroup, ChesapeakeStat)

- Scott Phillips (STAR)
- Guy Stephens (Web Team, ChesapeakeStat)
- Peter Tango (STAR)
- Doreen Vetter, Chair (GIT6, ChesapeakeStat)
- Denice Wardrop (STAC)
- John Wolf (STAR, GIS Team)

DOREEN VETTER, CHAIR, INDICATORS FRAMEWORK ACTION TEAM