

Initial Plan Formulation Strategies

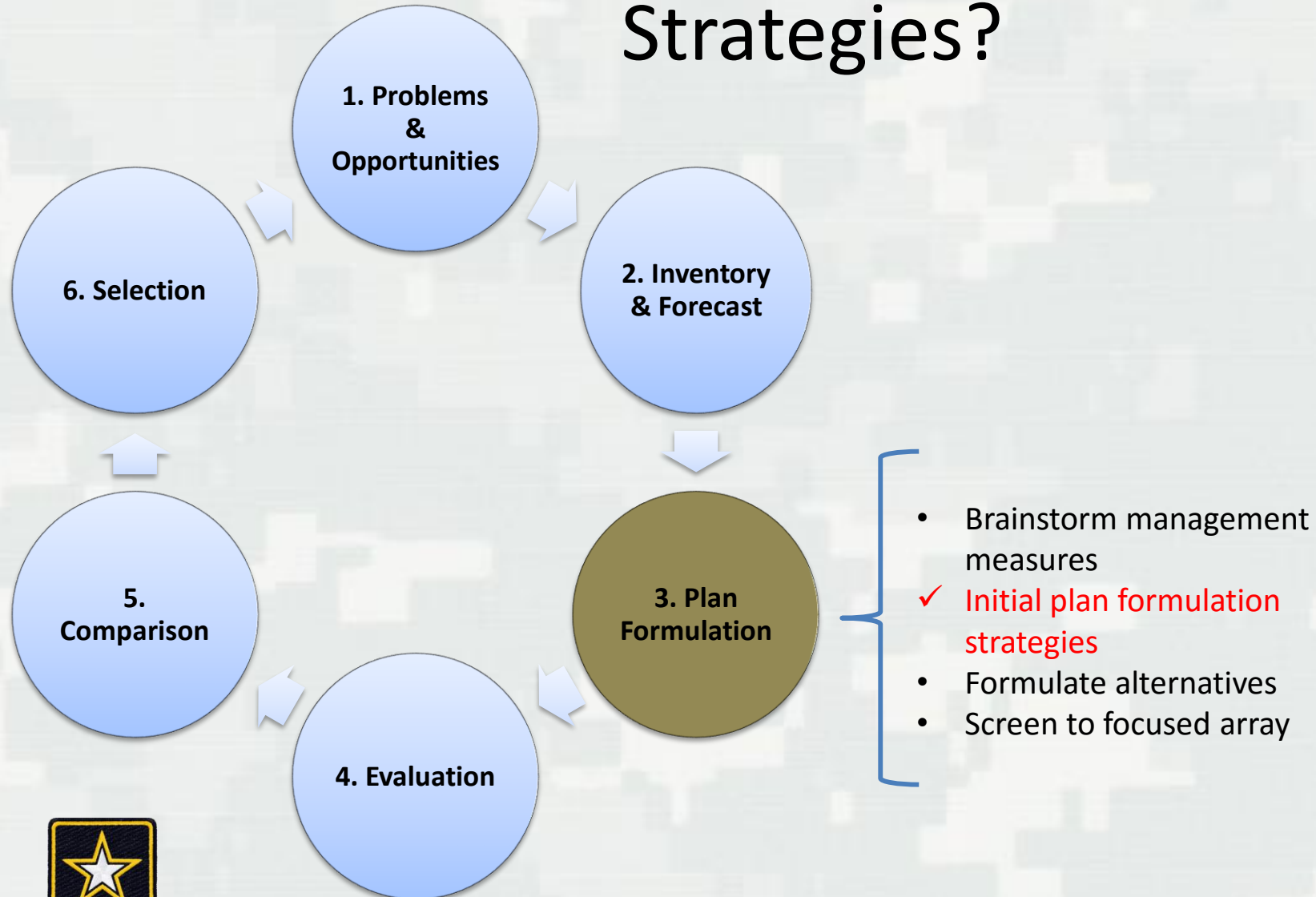
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Office of Water Project Review
PCoP Webinar 07 April 2016



US Army Corps of Engineers
**PLANNING SMART
BUILDING STRONG®**



Why *Initial* Plan Formulation Strategies?



Why Do We Formulate Alternative Plans?

- Provide your response using the Chat tool
- Set your Chat tool to:

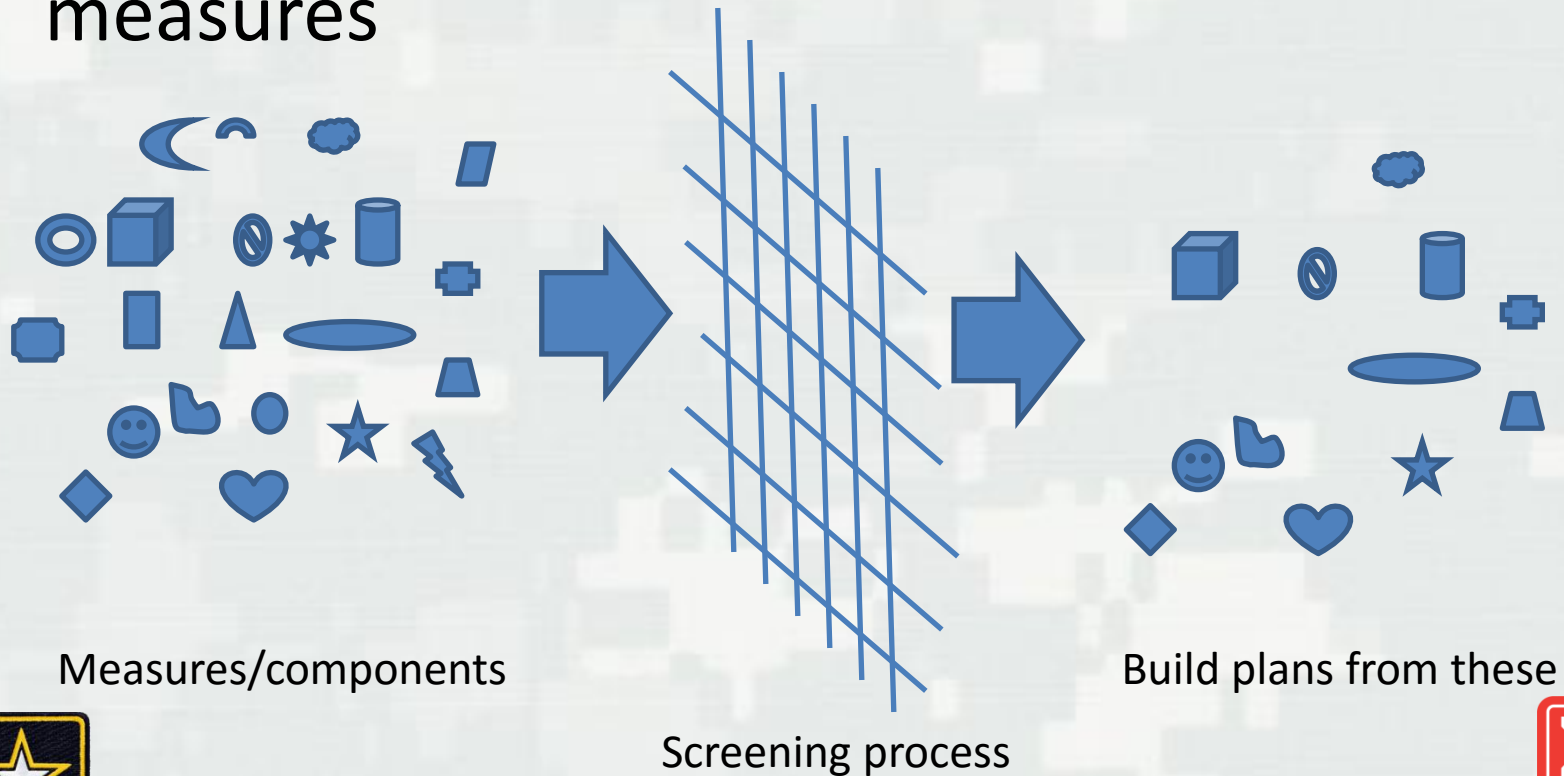
Send to: ▼

- Type in your answer and click SEND



Where Do Alternative Plans Come From?

- We often start with long lists of management measures



Where Do Alternative Plans Come From?

- This is where plan formulation ***strategies*** can help!



Why Do We Formulate Alternative Plans?

*To address planning objectives
while avoiding planning constraints*



What Is a Plan Formulation Strategy?

Let's see what you think...

- A) means of optimizing the NED plan
- B) systematic method of combining management measures into alternative plans based upon specific planning objectives
- C) method of narrowing down the universe of possible solutions to a concise group of initial alternatives
- D) mechanistic process of developing alternative plans

Choose all that apply in
the Polling Window and
click submit



What Is a Plan Formulation Strategy?

- Definition:
 - A plan formulation strategy is a systematic method of combining management measures into alternative plans based upon specific planning objectives
 - A method of narrowing down the universe of possible solutions to a concise group of initial alternatives
 - A means of obtaining input/preferences from the public and non-Federal sponsors



Why Are Plan Formulation Strategies Important?

- Plan form strategies help us progress *rationally & deliberately* from many management measures to distinct alternative plans
- Plan formulation is not a “mechanized” process
- Allow us to make basic links between planning objectives and alternatives
- Help identify different ways of solving the problem(s)
- Help PDT develop a reasonable array of distinctly different alternatives
- Provide a quick focus to help PDT move to the initial and focused array of plans



Where Do Plan Formulation Strategies Fit into the Plan Formulation Process?

- A little context...
 - Initial plan form strategies are just the *first step* in development of alternative plans
 - To be followed by development of *actual* alternatives – placing management measures “on the ground” - with maps - to address objectives
 - Which in turn will be screened using objective criteria to arrive at a focused array



Where Do Plan Formulation Strategies Come From?

- Strategies can originate from several sources
 - Generic strategies
 - Decision support tools
 - Conceptual models
 - Business line/ project purpose-focused
 - Synergies among multiple objectives/ multiple purposes



What are Examples of Plan Formulation Strategies?

- Generic
 - “Low-hanging fruit”/ “no regrets”/ minimum plan
 - minimize costs!
 - “Cadillac”/Maximum plan – maximize effectiveness!
 - Non-Federal Sponsor’s plan/LPP
 - Other agency’s plan (e.g., resource agency)
 - Public input plan
 - Prior reports



What are Examples of Plan Formulation Strategies? (cont'd)

- Decision support tools
 - IWR-Planning Suite's "All Plan Combinations," "Cost Effective," or "Best Buy" plans
- Conceptual models
 - Example later in presentation
- Business line/ project purpose-focused
 - Examples following



What Are Examples of Plan Form Strategies for Flood Risk Management?



What Are Examples of Plan Form Strategies for Flood Risk Management?

- Your turn...
- Think back on your own studies and projects -- what strategies did you use to start developing conceptual alternatives?
- Share 1 or 2 using the Chat tool
- Let's discuss...



Examples of Plan Form Strategies for Flood Risk Management

- What's driving the risk? **Probability & consequences**
- Let's look at this graphically...



Leveed Area Flood Risk Defined

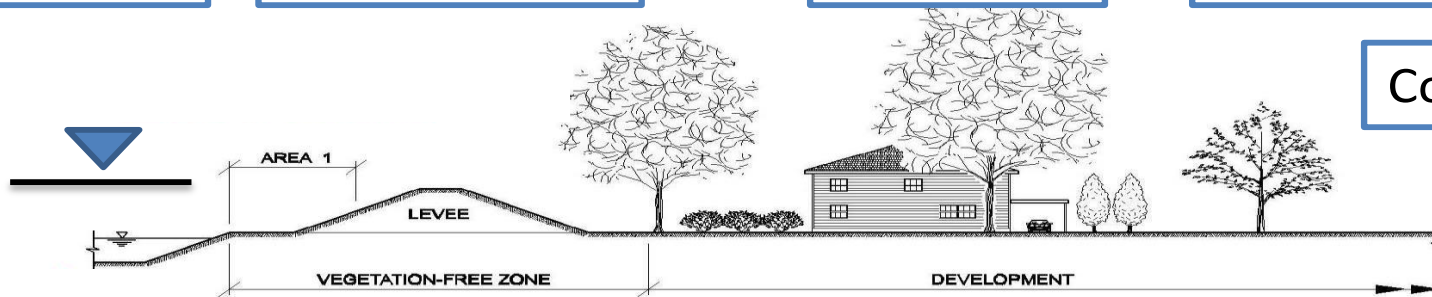
Hazard

Performance

Exposure

Vulnerability

Consequences



HAZARD

(What can cause harm?)

PERFORMANCE

(How will the system react?)

EXPOSURE

(Who & What are in harm's way?)

VULNERABILITY

(How susceptible to harm?)

CONSEQUENCE

(How much harm?)

RISK

(Probability and severity of adverse consequences)

Examples of Plan Form Strategies for Flood Risk Management

- Focus on economic damage centers (e.g., where the greatest consequences are)
- Focus on minimization of life loss (e.g., ALSO where the greatest consequences are)
- Focus on critical infrastructure (almost by definition “high consequence” – often associated human health & safety)
- Focus on existing infrastructure (e.g., fragile levees)
- Focus on *regional* solutions initially (e.g., dams, upstream detention, land use ordinances), followed by more “*local*” protection (e.g., floodwalls/levees, channelization, bypass structures, bridge modifications, interior drainage)



Examples of Plan Form Strategies for Flood Risk Management

- Pick 1 or more floodplains for *initial* formulation of alternatives (e.g., 10% ACE, 4% ACE)
- Non-structural (alternatives, not just measures, e.g., relocations, FWEEP's)
- Combination of structural and non-structural measures
- Avoid risk transfer; consider residual risk
- Multi-objective ecosystem restoration + FRM (e.g., system of setback levees)
- Complementary actions taken by others (Fed, State, local, NGO's)



Examples of Plan Form Strategies for Ecosystem Restoration

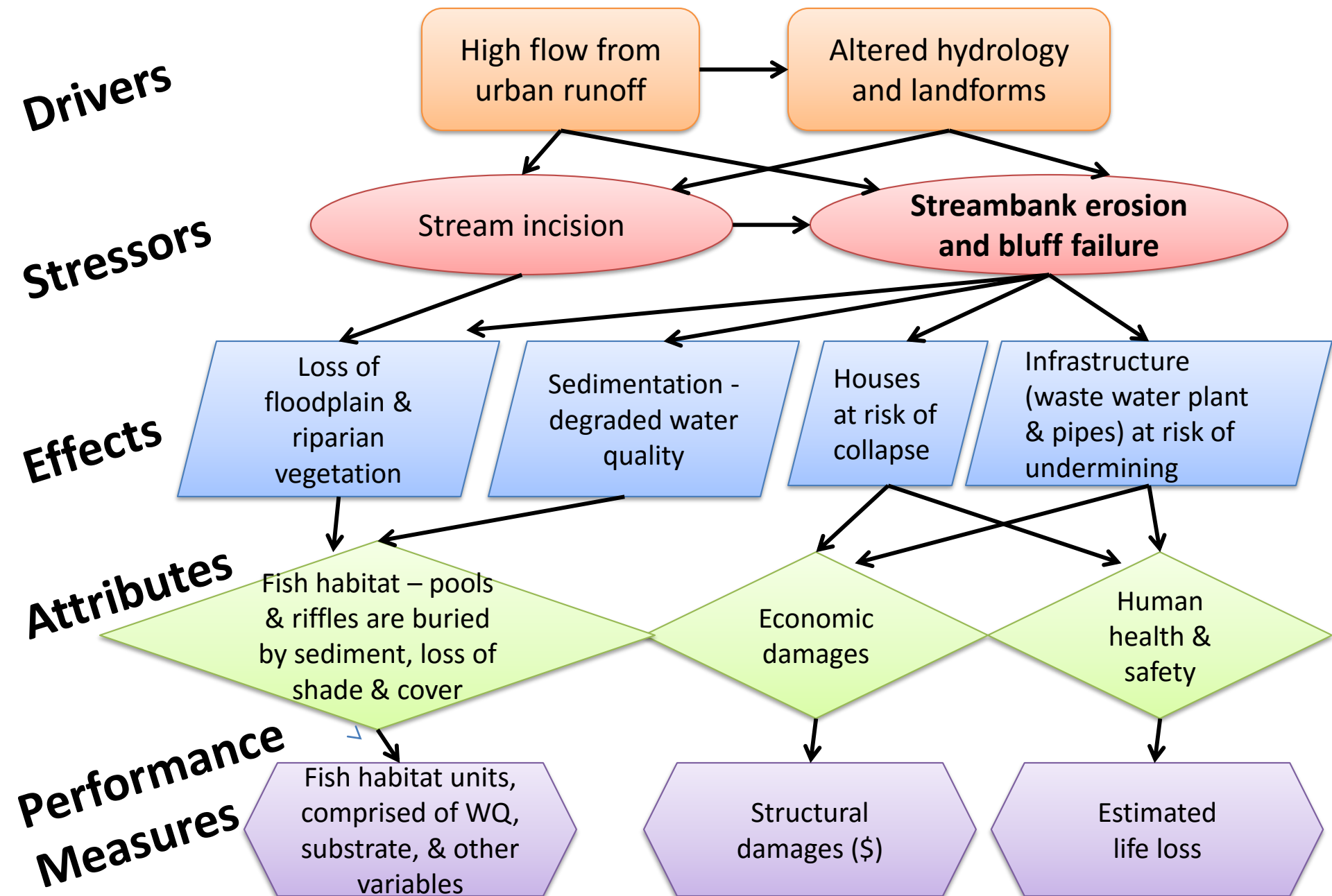


Examples of Plan Form Strategies for Ecosystem Restoration

- Conceptual models are very useful in describing cause and effect relationships (and not just for eco restoration)
 - What drivers and stressors should we focus on?
 - What effects do we care about and how will we measure them?
 - What management measures are most effective in addressing effects?
- Are there thresholds in terms of habitat parameters/variables?
- Are there factors limiting habitat structure and function, quantity and quality?



Streambank Erosion Conceptual Model



Examples of Plan Form Strategies for Ecosystem Restoration

- Beyond just combinations of management measures, how might we formulate eco restoration alternatives within an entire watershed?
 - Focus on potential to restore significant resources – and “bang for the buck”
 - Focus on mainstem or mainstem + tribs?
 - Differing characteristics or problems between river reaches?
 - Tackle upstream OR downstream problems first?
 - Need to increase connectivity?
 - Legitimate/reasonable real estate or HTRW constraints or considerations?



Examples of Plan Form Strategies for Ecosystem Restoration

- Non-structural (e.g., changes to O&M manual; invasive species, controlled burn, livestock, sediment & runoff management, BMP's)
- Multi-objective ecosystem restoration + groundwater recharge/water conservation (e.g., dry dams, spreading grounds)
- Multi-objective ecosystem restoration + FRM/CSDR (e.g., bypasses, coastal wetlands)
- Complementary actions taken by others (Fed, State, local, NGO's)



Check the strategies you have used



Examples of Plan Form Strategies for Navigation



Examples of Plan Form Strategies for Navigation

- Focus on existing & planned (FWOP) infrastructure -- GNF (e.g., channels) and LSF (e.g., terminals)
- Focus on main channel prior to tributary channels
- Focus on what economists tell us – vessel fleet, cargo trends, types of commodities, traffic bottlenecks
- Focus on safety issues
- Focus on disposal strategies – “Federal standard” versus beneficial uses



Examples of Plan Form Strategies for Navigation

- Identify a range of improvement dimensions that can later be narrowed down
- Non-structural (alternatives and measures, e.g., traffic management, pilot regulations)
- Multi-objective NAV + ecosystem restoration/CSDR (e.g., beneficial use of dredged material)
- Complementary actions taken by others (Fed, State, local, NGO's)



Check the strategies you have used



Your Turn...

- Do you have any “take away” lessons or insights from today’s webinar?
- Please type your responses in the chat box for all to see
- Let’s discuss...



What Should We (PCoP) Do Next?

- How do we improve the “state of practice?”
 - Future webinars (by business line)
 - Develop “Plan Form Strategies Primer” (a’ la Planning Primer)?
 - Focus on business lines
 - Guidelines (not templates or checklists)
 - Generic & specific examples of plan form strategies
 - Include topic and “strategy sessions” in advanced plan formulation course?



Check the
tasks you favor



What Should We Do Next (cont'd)?

- Beyond plan form strategies, are there higher priorities within the realm of plan formulation (further along the planning process) on which to focus?
- Examples:
 - How to “build” the conceptual alternatives?
 - Once conceptual alternatives have been developed, selecting objective screening criteria to arrive at focused array?
 - Selecting evaluation criteria (& employing appropriate level of detail) to apply to focused array to get to TSP?
 - Etc.



Check the
tasks you favor



Who Is Doing What?

- Volunteers!
 - Webinars
 - Primer
 - Advanced plan form course
 - Other ideas



Questions or Comments?

- Email or call the following individuals:
 - Leigh Skaggs, OWPR
 - Andrea Walker, ASA(CW)
 - Maria Wegner, HQ
 - Martin Hudson, NWD
 - Fay Lachney, MVD
 - Jeff Lin, SAD RIT
 - Greg Miller, ECO PCX

