



**US Army Corps of Engineers
Mobile District**

Mobile Harbor GRR Decision Management Plan *To TSP Milestone*

Last Updated: 03 February 2016

PLANNING DECISION

The purpose of this DMP is to describe the work that will be done by the Project Delivery Team (PDT) in reaching the Tentatively Selected Plan (TSP) milestone. In particular this DMP will focus on using a reasonable level of detail to collect data and model alternatives to analyze and evaluate effectiveness of the focused array of alternatives with the intent of identifying a TSP. The goal for the TSP Milestone is obtaining the Vertical team's agreement on the PDT's recommendation of a TSP that will be released as part of the draft feasibility study report for public and agency review along with the analysis the PDT used to reach that decision and the proposed way forward on developing sufficient cost and design information for the final feasibility study report.

STRATEGY TO MAKE THE PLANNING DECISION

Event 1: Receive vertical team buy-in on focused array of alternatives.

Event 2: Develop Existing and Future Without conditions.

Event 3: Analyze and compare future with and without condition.

Event 4: Confirm channel widths and depths for design vessel.

Event 5: Conduct analyses for environmental assessment.

Event 6: Coordinate mitigation evaluation

Event 7: Final screening of alternatives.

Event 8: Prepare draft report with TSP.

Event 9: Determine remaining tasks to attain Agency Decision Milestone (ADM).

Event 10: Conduct TSP meeting and receive approval from the USACE vertical team on the TSP recommendation and proposed path forward.

KEY STRATEGY ISSUES

Issue 1: Relying on the focused array of alternatives developed for and approved at the Alternatives Milestone, the PDT will collect the necessary data, conduct appropriate modeling, and analyze the results to develop a TSP that is complete, effective, efficient, and acceptable.

DECISION CRITERIA

This DMP has the following decision criteria and metrics to be considered to advance through the TSP milestone.

Criteria 1: What is the design vessel for Mobile Harbor?

Metric 1: Fleet Forecast.

How will the metric be used? Metric will be utilized to determine design vessel.

Methods, Models and Procedures: The initial focused array of Alternatives was based on the *Susan Maersk*, a 140' x 1,140' Post Panamax container ship. For the widening alternatives, the two design ships analyzed during the previous LRR effort were used. One was the *KMSS Dainty*, a 965' x 106' containership, the other the *Susan Maersk*. The fleet forecast will be used for the final selection of the design vessel.

Criteria 2: Can the widening and/or deepening alternatives safely accommodate the design vessel(s)?

Metric 2a: Channel width requirements of design vessel(s).

How will the metric be used? Metric will be utilized to confirm earlier assumptions of channel widening needs and design vessel(s).

Methods, Models and Procedures: Interviews with pilots, the Port and the United States Coast Guard will be conducted. In addition, accident records, channel conditions, and hydrodynamic conditions will be collected. Information obtained during the economic development of the fleet forecast will be utilized in selection of the design vessel(s). Ship simulations of combined deepening and widening alternatives, realignments of the entrance channel, bend easing and passing lanes will be used evaluate ship motions and controllability.

Metric 2b: Underkeel clearance of design vessel(s).

How will the metric be used? Metric will be utilized to confirm earlier assumptions of channel underkeel needs and design vessel(s).

Methods, Models and Procedures: Interviews with pilots, the Port and the United States Coast Guard will be conducted. In addition, accident records, channel conditions, and hydrodynamic conditions will be collected. Information obtained during the economic development of the fleet forecast will be utilized in selection of the design vessel. EM 1110-2-1613 and the Channel Analysis and Design Evaluation Tool (CADET) will be utilized to evaluate gross underkeel (effects of freshwater, ship motion from waves, squat underway and safety clearance needs).

Criteria 3: Is there adequate dredged material capacity within placement sites?

Metric 3: Dredged material quantities.

How will metric be used? Projected dredged material quantities will be compared to available capacity in existing or potential dredge material placement sites.

Methods, Models and Procedures: Dredge quantities will be projected based on estimated construction volumes for the considered alternatives. Environmental impact(s) of the proposed placement site(s) will also be considered for the given volumes delivered to designated placement areas.

Criteria 4: Does economic analysis support channel improvements?

Metric 4: Estimated benefits and cost for the focused alternatives.

How will the metric be used? The estimated benefits and costs of each alternative will be tabulated and compared to determine which alternative provides the greatest net benefits (estimated benefits less estimated cost). For the initial analysis, the costs will be parametric and historically based. The alternative producing the greatest net benefits will likely be the TSP, however, further analysis will be performed to ensure an environmentally acceptable plan.

Methods, Models and Procedures: After developing the commodity and fleet forecasts, a HarborSym model will be developed to simulate port operations under existing, future without, and with deepening and widening alternatives to estimate traffic flow changes into and out of the port. Traffic flow changes will be converted into positive or negative cost changes (benefits). These benefits will then be compared to the parametric and historically based costs to determine if channel modifications are supported. If so, further analysis will be performed to confirm or revise the selected plan. The TSP will be

based on one commodity and fleet forecast. No alternate sensitivity scenarios will be used in selection of the TSP.

Criteria 5: What are the estimated environmental mitigation needs?

Metric 5: Habitat impact assessment.

How will metric be used? Projected project impacts, including impacts to water quality, air quality, Threatened and Endangered Species, impacts to fish and wildlife habitat, and impacts to historical/cultural resources identified through this process will be compared to those associated with the baseline conditions of the existing project (i.e. future without project condition) to determine the impacts (positive or negative) associated with specific alternatives and selected plan.

Methods, Models and Procedures: Engineering and environmental analyses to compare habitat impacts for the focused array of alternatives will be primarily qualitative in nature. Quantitative modeling (hydrodynamics, sediment transport, morphological response, and WQ) will only be utilized to evaluate/compare the future w/o project condition and the plan that maximizes net benefits. The uncertainty in the difference in effects using the qualitative analysis on the focused array will be reflected through higher cost contingencies/parametric cost estimates.

Criteria 6: Does the TSP satisfy the project objectives?

Metric 6: Evaluation and analyses of the focused alternatives are used to determine the TSP.

How will metric be used? Information developed during the evaluation of the alternatives will be used to develop an alternative that will be forwarded as the TSP for additional analysis and refinement to ultimately be the selected plan for recommendation.

Methods, Models and Procedures: The economic analysis will determine an alternative that maximizes net benefits and that alternative will be analyzed to determine its environmental impacts. Reducing environmental impacts of that alternative by modifying its features will be considered prior selecting the TSP.

How will metric be used? The analyses and documentation of impacts associated the proposed improvements will provide the framework to achieve economic benefits, analyses of impacts associated with the project, and analyses required for beneficial use of dredged material and mitigation planning.

Metric Summary and Responsibility:

| Metric # | Metric Name | Who? [Who is providing final metric value?] | By When? |
|-----------------|-------------------------------|--|--------------------|
| 1 | Design Vessel | (b)(6) | <u>1 Nov 2016</u> |
| 2 | Widening/Deepening Dimensions | | <u>5 Jun 2017</u> |
| 3 | Dredged Material Capacity | | <u>28 Aug 2017</u> |
| 4 | Economic Analysis | | <u>17 Mar 2017</u> |
| 5 | Environmental Mitigation | | <u>28 Sep 2017</u> |
| 6 | TSP | | <u>28 Mar 2018</u> |

SCHEDULE SUMMARY

This section specifies the timeline for making the planning decision to the *TSP Milestone*.

| Event Number | Event Name | Dates |
|---------------------|---|-------------------|
| 1 | Receive approval on array of alternatives | 17 February 2016 |
| 2 | Develop Existing and Future Without conditions | 23 February 2017 |
| 3 | Analyze and compare future with and without condition | 17 March 2017 |
| 4 | Confirm channel widths and depths | 05 June 2017 |
| 5 | Conduct analyses for environmental assessment | 31 July 2017 |
| 6 | Coordinate mitigation evaluation | 28 September 2017 |
| 7 | Final screening of alternatives | 29 January 2018 |
| 8 | Prepare draft report with TSP | 9 March 2018 |
| 9 | Determine remaining tasks to attain Agency Decision Milestone (ADM) | 9 March 2018 |
| 10 | Conduct TSP meeting and receive approval from the USACE vertical team on the TSP recommendation and proposed path forward | 27 March 2018 |