Background

- DMC members identified knowledge gap in industry
- Decreasing margins and increasing commercial risk changing the way contracts are procured
- Terms of Reference drafted June 2017 to inform industry stakeholders
Background

Issues to be addressed include:

- Types of project procurement re: commercial risk allocation;
- Contracting methods e.g. EPC, D&B, traditional;
- Alternative tender types e.g. early contractor involvement;
- Review of project types (e.g. reclamation, offshore wind etc.) against procurement methods;
- Advantages and disadvantages of contracting methods for all parties including contractors and client/owner bodies; and
- Links/references to current available propriety standard conditions used for dredging and offshore works.
Idea of Output

• Draft guidance paper to inform and to be practical guide for users
• Predominantly aimed at contract awarders i.e. owners
• Style, format and content to align and be complimentary to the Dredging Management Checklist
• Potential for online use?
Working Group

- Working group to investigate procurement and contracts set up Summer 2017
- Working group has 15 members
  - 5 nations
  - Contractors, owners, lawyers, consultants, designers etc.
Outline Structure

• General introductory section
• “Key Aspects”
• Scoring matrix
General Introductory Section

• Outline narrative explaining procurement process with considerations
• Explanation of certain procurement methods and contract types
• Centered around flowchart, mapping from post-concept to entering into contract phase
STEP 1: PROJECT BASIS (SCOPE/OWNER REQUIREMENTS)

Type of Dredging

Preparation Elements

Execution Elements

STEP 2: PACKAGING OF WORK

Work breakdown structure
- What type of dredging does my project need?
- What is the available capacity and/or expertise?
- Which elements does my project need?
- How do we bundle outsourced elements?

STEP 3: RISK/OPPORTUNITY ANALYSIS

Risk and market analysis
- Consider technical, legal, financial, geographical, spatial, and safety elements.
- Client knowledge/expertise level.
- Who is best suited to manage the various types of dredging and other aspects of risk?
- When/how to involve contractors?

STEP 4: CONTRACT TYPE SELECTION

What type of contract is best suited for the packaged work according to the risk and market analysis?
- Charters (equipment hire)
- Unit rates (transport or measured volume)
- Lump sum – Construct only
- Maintenance/performance-based – Lump sum
- Design & construct
- Design & construct+/ EPC
“Key Aspects”

• Fundamental concept introduced in the document
• Based around the principe of 6 key items for consideration against which the contract selection can be “measured”
• Align closely with items within the Dredging Management Checklist
### “Key Aspects”

<table>
<thead>
<tr>
<th>Key Aspects</th>
<th>Parameters/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Project Scope</td>
<td>How fixed or open is the scope of work?</td>
</tr>
<tr>
<td>B. Physical/Environmental Site Conditions</td>
<td>How well known are the physical conditions at site?</td>
</tr>
<tr>
<td>C. Risk Allocation/Liabilities</td>
<td>What balance of risk do the parties wish to make? Who is best placed to manage risk?</td>
</tr>
<tr>
<td>D. Owner’s Control/Contractor’s Flexibility</td>
<td>How much control does the owner want? How much flexibility to work will the contractor have?</td>
</tr>
<tr>
<td>E. Time &amp; Schedule</td>
<td>Is the end date critical or is there flexibility regarding when the works can be completed?</td>
</tr>
<tr>
<td>F. Price &amp; Valuation</td>
<td>How much security of price does the owner want?</td>
</tr>
</tbody>
</table>
## Key Aspects

### B. Physical/Environmental Site Conditions

<table>
<thead>
<tr>
<th>Sub-category</th>
<th>Remarks/Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material to be dredged</td>
<td>Characteristics of material to be dredged are essential for project development options and directly influence contract pricing and risk assessments by contractor. Owner to provide required information, possibly in combined effort with (tendering) contractor(s). Responsibility for correctness of data to be identified.</td>
</tr>
<tr>
<td>Site conditions</td>
<td>Site conditions, influencing design and construction limitations, to be provided by Owner. Consequences thereof to be incorporated by contractor in work plans and pricing, with adequate margin for natural or operational variability.</td>
</tr>
<tr>
<td>Site information/data quality</td>
<td>Reliability of site information/data quality clearly to be specified by owner, with adaptive procedures if deviations are encountered.</td>
</tr>
</tbody>
</table>
Scoring Matrix

• Tool provided to “score” the key aspects and to compare to certain contract types
• Key aspects “scored” on a 1-10 scale:
  – 1 = Owner certainty
  – 10 = Owner uncertainty
• Results plotted against certain contract types
Scoring Matrix

- Construct Only – Charter;
- Construct Only – Re-measurable;
- Construct Only – Lump sum;
- Maintenance – Performance Based – Lump Sum;
- Design & Construct – Lump Sum; and
- D&C++/EPC – Lump Sum.
## Scoring Matrix

<table>
<thead>
<tr>
<th>Key Aspects</th>
<th>Lower end (score=1)</th>
<th>Upper end (score=10)</th>
<th>Construct Only - Charter</th>
<th>Construct Only - Remeasurable</th>
<th>Construct Only - Lump Sum</th>
<th>Performance Based / Maintenance - Lump Sum</th>
<th>Design &amp; Construct - Lump Sum</th>
<th>D&amp;C+/EPC - Lump Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Project Scope</td>
<td>Fully fixed</td>
<td>Very open/uncertain</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>B. Physical / Environmental Site Conditions</td>
<td>Fully explored</td>
<td>Very uncertain</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>C. Risk Allocation/Liabilities</td>
<td>Risks and liabilities with Contractor</td>
<td>Risks and liabilities with Owner</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>D. Owner's Control / Contractor's Flexibility</td>
<td>Contractor freedom to operate</td>
<td>Owner in control</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>E. Time &amp; Schedule</td>
<td>Strict time frame</td>
<td>Flexible time frame</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>F. Price &amp; Valuation</td>
<td>Fully fixed</td>
<td>Remeasurable based on rates</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
Scoring Matrix

A. Project Scope
B. Physical / Environmental Site Conditions
C. Risk Allocation/Liabilities
D. Owner’s Control / Contractor’s
E. Time & Schedule
F. Price & Valuation

Visualization of Owners’s uncertainty (higher value indicates increased uncertainty)

- Construct Only - Charter
- Construct Only - Remeasureble
- Construct Only - Lump Sum
- Performance Based / Maintenance - Lump Sum
- Design & Construct - Lump Sum
- D&C++/EPC - Lump Sum
Scoring Matrix

Visualization of Owners's uncertainty
(higher value indicates increased uncertainty)

A. Project Scope
B. Physical / Environmental Site Conditions
C. Risk Allocation/Liabilities
D. Owner's Control / Contractor's
E. Time & Schedule
F. Price & Valuation

Construct Only - Charter
Construct Only - Remeasureble
Construct Only - Lump Sum
Performance Based / Maintenance - Lump Sum
Design & Construct - Lump Sum
D&C++/EPC - Lump Sum
Sample Score
Summary

• Single-point reference document regarding procurement and contract selection
• Aim to assist the contract awardee in assessing and/or tailoring method
• Use of Key Aspects to “score” and compare contracting options