

Dredge Clearance Hydrographic Survey Assessment and Reporting

Status Update

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US Army Corps of Engineers
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Presentation Outline

- General Changes
- New Work and Maintenance Template Revisions
- Acceptance Criteria
- Volume Computations
- Rounding
- Release of Data
- Next steps
- Discussion



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Changes from Original Draft to Managers Draft

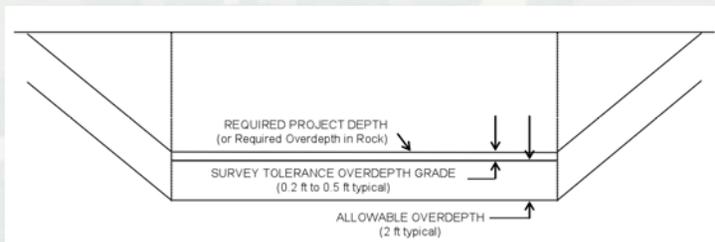
- Revised from 'accuracy' and 'error' to 'uncertainty'
 - ▶ Accuracy describes how close a result is to the true answer
 - ▶ Error describes how far a result is from a true answer
 - ▶ Uncertainty is the statistical assessment of the likely magnitude of the difference between a measured value and the true value
 - ▶ *In the case of hydrographic surveying we do not know the "true" value*
- Revised from 'tolerance' to 'allowance'
 - ▶ Tolerance is "an allowable amount of variation of a specified quantity"
 - ▶ Allowance is "regard or treat leniently on account of mitigating circumstances"
 - ▶ *Rather than issuing carte blanche acceptance, utilize professional judgment to consider all factors to make a decision of acceptance*
- Updated superseded reference related to defining datums
 - ▶ EM 1110-2-6065 - Standards and Procedures for Referencing Project Evaluation Grades to Nationwide Vertical Datums



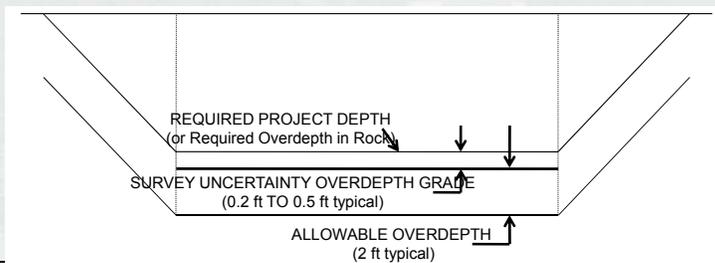
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Changes from Original Draft to Managers Draft

- Original "New Work" Template ("Tolerance")



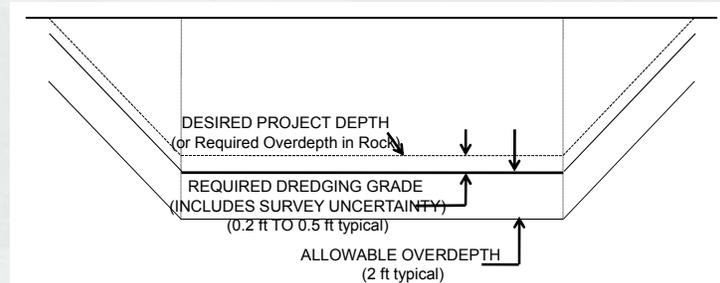
- Revised "New Work" Template ("Uncertainty")



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Changes from Original Draft to Managers Draft

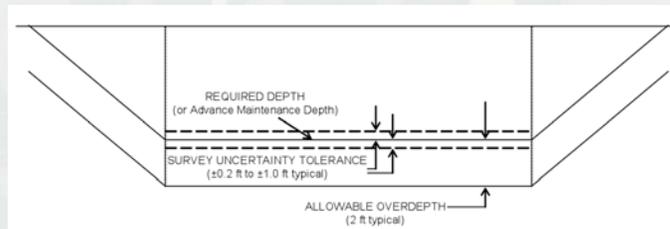
- Commented “New Work” Template
 - ▶ Contract provides one “required depth” that includes extra depth for uncertainty to ensure desired project depth is attained.
 - ▶ Needs examples for side-slope variations



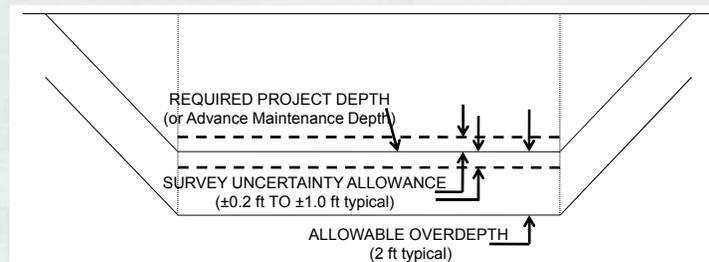
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Changes from Original Draft to Managers Draft

- Original “Maintenance” Template (“Uncertainty Tolerance”)



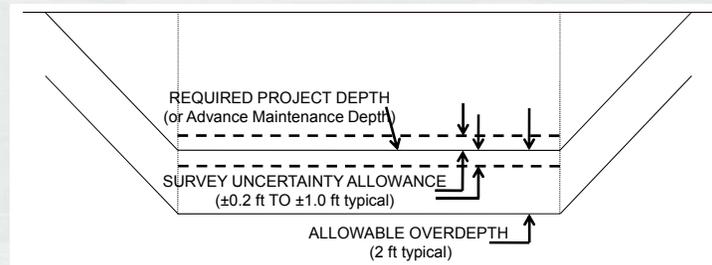
- Revised “Maintenance” Template (“Uncertainty Allowance”)



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Changes from Original Draft to Managers Draft

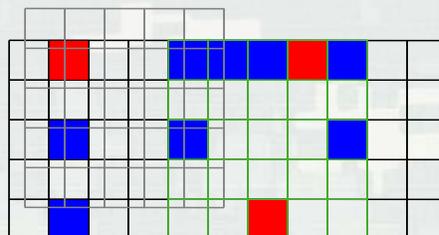
- Commented “Maintenance” Template
 - ▶ Contract provides one “required depth” that includes extra depth for uncertainty to ensure desired project depth is attained.



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Changes from Original Draft to Managers Draft

- Clearance
 - ▶ For new work or maintenance, multiple adjacent / contiguous cells containing data above required are subject to re-dredging
 - ▶ For new work or maintenance, isolated cells with data above required are subject to further investigation
- Grid creation
 - ▶ Added a 1x1 grid size for use in new-work hard bottom areas
 - ▶ Grids should be created to ‘snap’ to coordinates that are multiples of the cell size (i.e. a 5x5 grid should be created with cell origins at coordinates ending in 0.0 or 5.0, 3x3 at multiples of 3, etc.) – this eliminates gridding / binning induced differences.



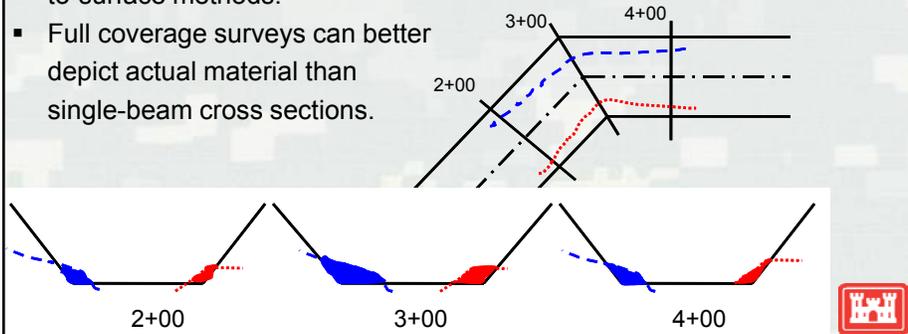
- > Uncertainty allowance above required
- < Uncertainty allowance above required



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Changes from Original Draft to Managers Draft

- Volume Computations
 - ▶ Surface-to-Surface is preferred
 - ▶ Average-End-Area has some inaccuracies due to station distances vs. actual length of material
- Though ¶ 16 says “Contour Dredging” the intent was to recommend surface-to-surface methods.
- Full coverage surveys can better depict actual material than single-beam cross sections.



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Changes from Original Draft to Managers Draft

- Revised recommendation to round survey results
 - ▶ Report depths in 0.1' with statement of uncertainty
 - ▶ Utilize depths to 0.1' for volume computations and clearance assessment
- RTK use
 - ▶ Use of RTK is recommended, but not required
- Providing survey data / results (no changes – pointing out comments)
 - ▶ 24 hrs for preliminary acceptance will be a challenge at times due to field processing capabilities, data x-fer from remote areas, etc.
 - ▶ 24 hr to provide raw data less of a problem



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Next Steps

- Additional discussions with Survey CoP and Managers
- Anticipate discussions with industry
- Revise based on discussions and comments
- Coordination with update of Hydrographic Survey Manual



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