

Performance Based Fixed Price Contracting: Supporting Innovation in Site Remediation

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Presentation Outline

- **Case Study**
- **Historical Site Work**
- **The “Eureka” Moment**
- **Performance Based Contracting**
- **Conclusion**
- **Epilogue**
- **Resources**

The Site - Location

West Source Area, OMC Canada, Peterborough, ON.



Source Area

Site Boundary

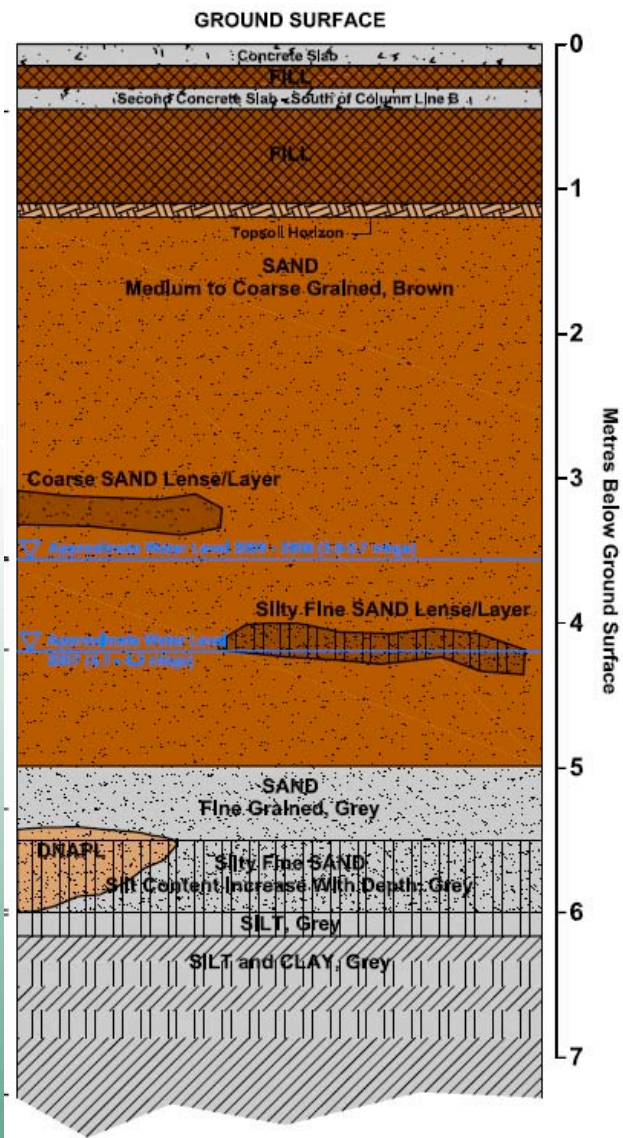
The Site - COCs

Trichloroethene and degradation products



**5,000 kg of TCE
(25 drums)**

The Site – Geology



- Concrete Surface Treatment
- Granular fill and sand overburden 0-6 mbgs. With thin lenses and layers of finer grained materials.
- Water table at 3-4 mbgs.
- DNAPL at 5-6 mbgs.
- Silt & clay aquitard at 6 mbgs.

The Site – Ownership

- **Site ownership was transferred to a local museum in the mid-1990's. OMC retained responsibility for clean up of environmental liabilities. OMC initiated bankruptcy proceedings in 2000.**
- **Remediation is being completed under a Court-supervised receivership with financing from financial assurance funds retained by MOE.**
- **Funding is limited**

Historical Site Work

- **Source Identified (Late 1990s)**
- **Remedial Action Plan (2001)**
- **Source Delineation (2001-2008)**
- **Risk Assessment and Remediation Target Setting (Due for completion in 2010)**
- **Interim Source Control (2001-2010)**
 - Groundwater flow barrier 2001-2002
 - DNAPL recovery 2003-2008
 - ISCO treatments/trials 2000 and 2008
- **Feasibility Study (2007-2008)**

The “Eureka” Moment

- No single prominent remediation solution identified in feasibility study.
- Did not have the expertise to design and implement some of the innovative options identified in feasibility study.
- Needed to move forward with remediation.

We understood the Site

We wanted options

We needed high degree of certainty for success

We had contract expertise

We needed value

WHAT NOW ??

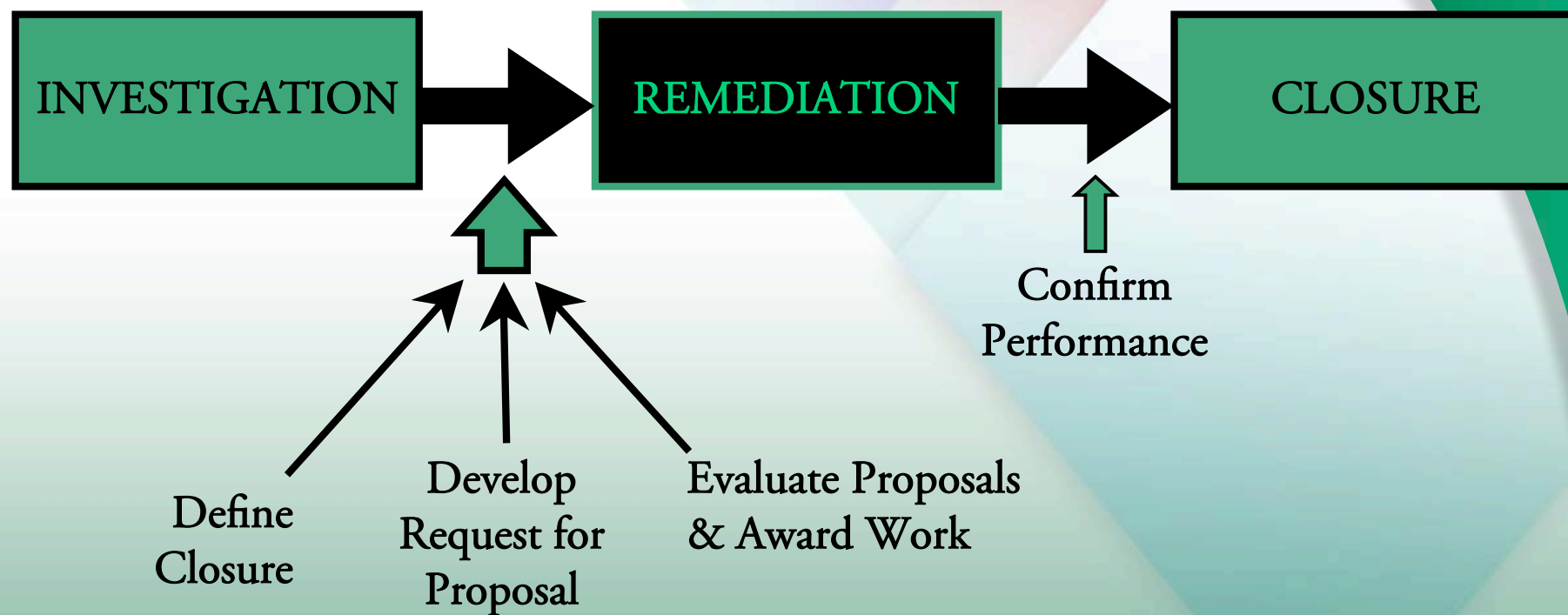
**PERFORMANCE BASED
CONTRACTING**

Definition Performance Based Contracts

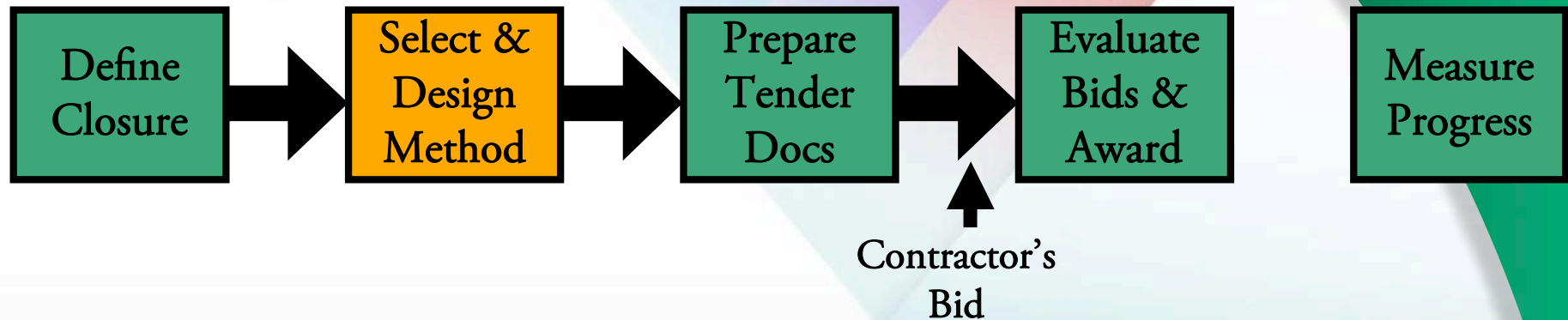
Performance based contracts are a mechanism that solicits bids on the basis of desired results to be achieved rather than the activities to be conducted.

The characteristics of a performance based contract include clearly defined performance expectations (preferably with a defined exit strategy), clearly defined milestones, use of incentives for performance, and flexibility in exchange for accountability for results (ITRC, 2006).

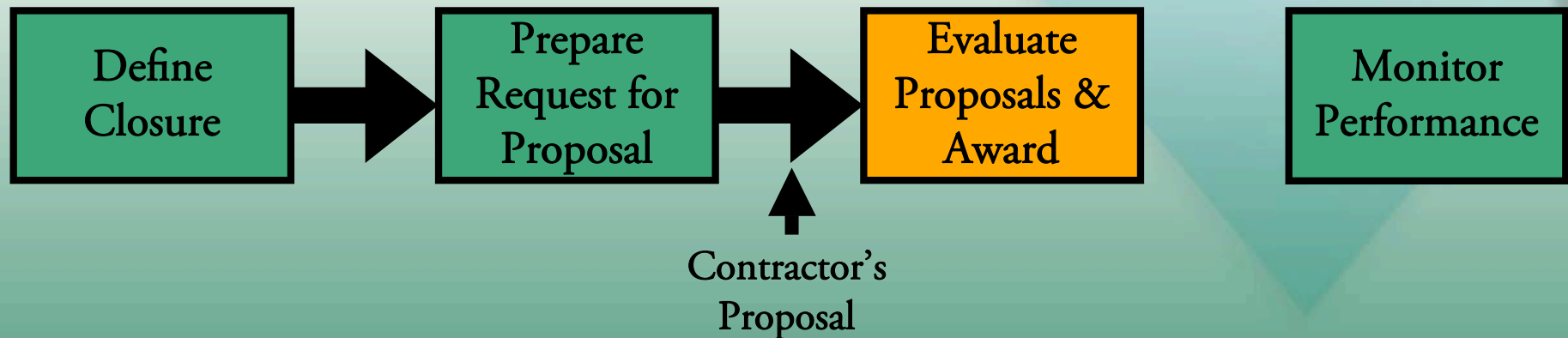
Performance Based Contracting



Traditional Approach

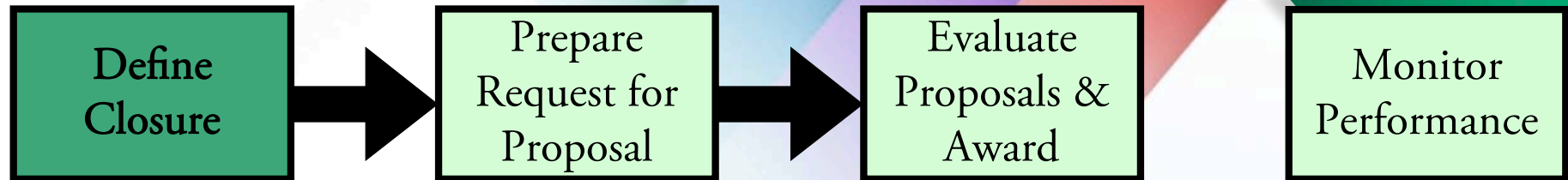


Performance Based Contracting Approach



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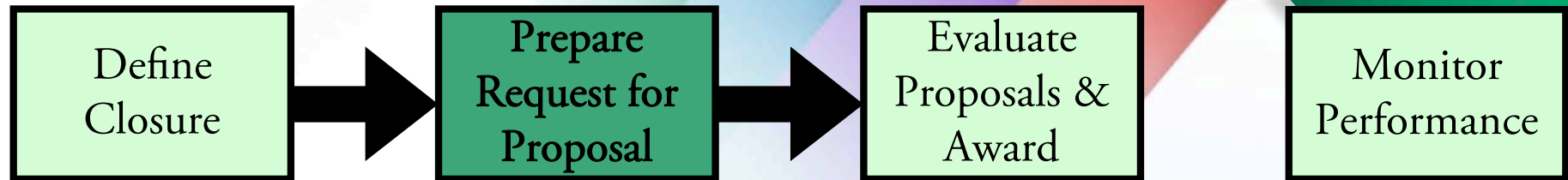
Define Closure

Must know the end goal to be able to map out implementation of a remedial project.

- **Physical limits of the site and source**
- **Risk based or generic standards**
- **Remediation of which contaminant phases**
- **Concentration reduction or flux reduction**

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Information Available to Bidders

- Design Inputs

Statement of Objectives

- Definition of Closure
- Performance Monitoring/Measurement

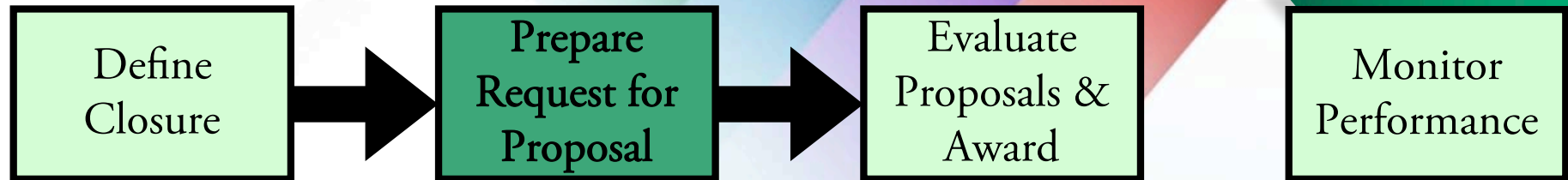
Minimum Specifications

- H&S, housekeeping, submittals, etc...

Payment, Terms and Conditions

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Goals of RFP

- Did not want to limit options.
- Needed competitive prices, with certainty of success.

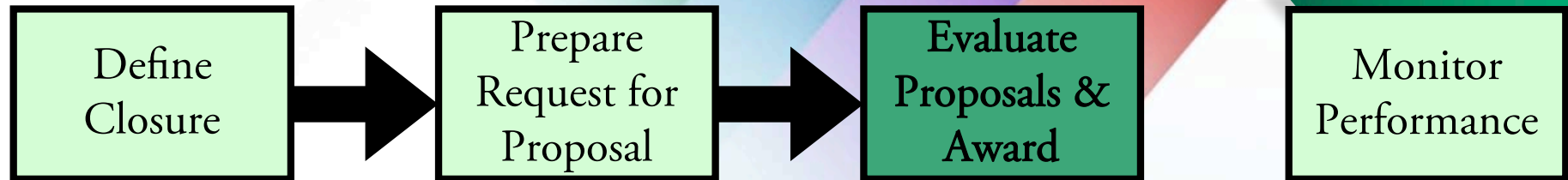
Nine firms invited to achieve these goals

- 3 with environmental general contracting experience.
- 3 with bioremediation and/or chemical oxidation experience.
- 3 with *in situ* soil heating experience.

Firms could also be invited through a public tender process; however, a pre-qualification is recommended.

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Overall Proposal Evaluation

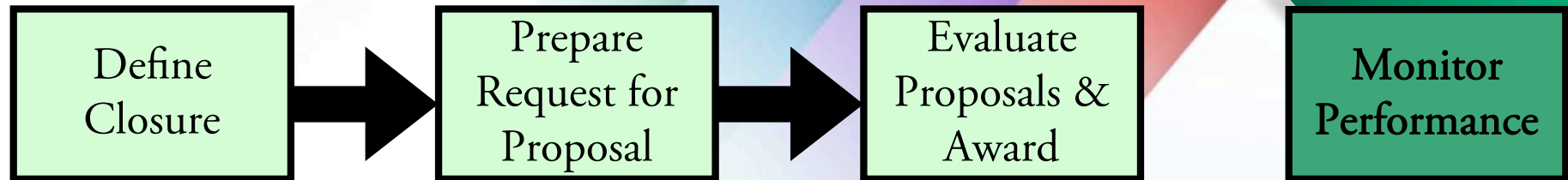
- **Assesses value not price.**
- **Have minimum requirements been met.**

Technical Evaluation

- **Replaces feasibility study and design components of traditional approaches.**
- **Must ensure that proposed technical approach is applicable to the site.**

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Performance Measurement and Monitoring

- **Basis for milestone payments**
- **Measures progress toward closure in terms of concentration or flux reduction**
- **Determine if performance has been achieved over the long term**

Performance Based Contracts

- **Case Study - Five Proposals Submitted**
 - MPE with *in situ* anaerobic bioremediation polishing.
 - Excavation with on-site *ex situ* treatment by chemox.
 - Excavation with on-site *ex situ* treatment by bioremediation.
 - Excavation, partial disposal and on-site in-excavation treatment by chemox.*
 - *In situ* electrical resistive heating (ERH) combined with MPE.*

Conclusion

- Yes** ➤ Was pricing competitive?
- Yes** ➤ Pricing fixed and guaranteed?
- Yes** ➤ Was scheduling competitive?
- No** ➤ Were options restricted?
- Yes** ➤ Fair and transparent process?
- Yes** ➤ Was innovation supported?
- Yes** ➤ Was innovation rewarded?

Diligently implemented, performance based fixed price contracting can support innovation in the remediation of contaminated sites.

Epilogue

- **Comments & Observations**
 - Know your final objective and how to measure it.
 - Cost premium – is it real?
 - PBC not appropriate for all projects.
 - Consider PBC early to avoid duplication of efforts.
 - Be realistic in milestone payment allocations.
 - Contractor's reactions to the.

- **Role Change**
 - Owner
 - Consultant
 - Contractor

Resources & References

***ITRC, 2006 - ITRC (Interstate Technology & Regulatory Council).
2006. Performance-based Management. RPO-6. Washington
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Thank You

Questions