

IS YOUR REMEDY BASED ON INCOMPLETE DATA?

Tenth International Conference on Remediation
and Management of Contaminated Sediments

February 2019



Improving quality of life.

Presentation outline

CERCLA Remediation Timeline

Feasibility Study Cost Role & Expectations

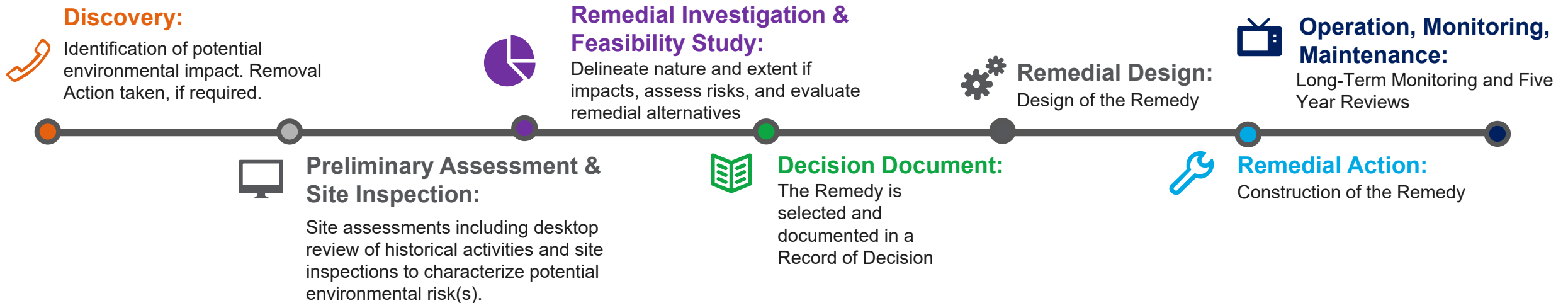
Change Mechanisms to Records of Decisions

Remedy Change Strategies

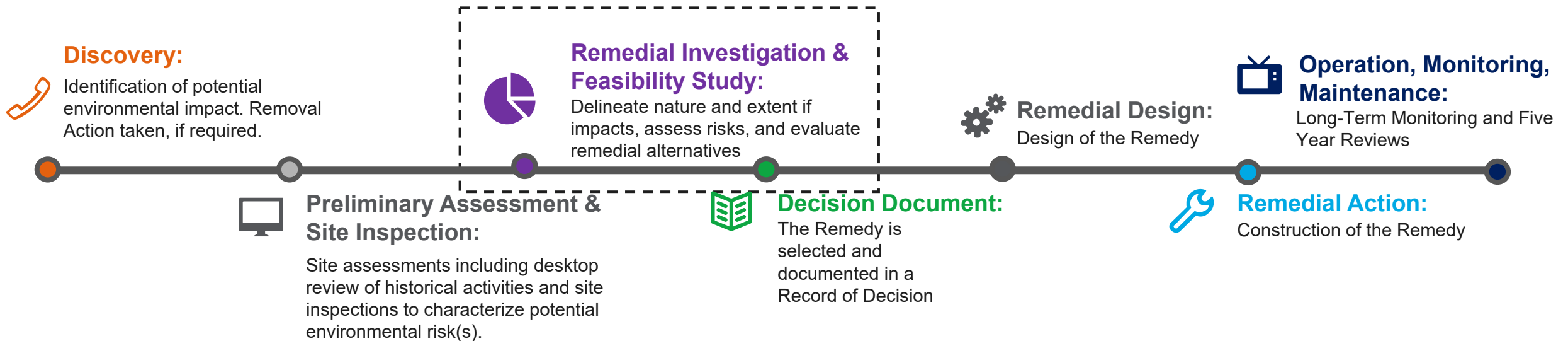
Case Study: Former Wood Treatment Facility

Conclusions

CERCLA remediation timeline



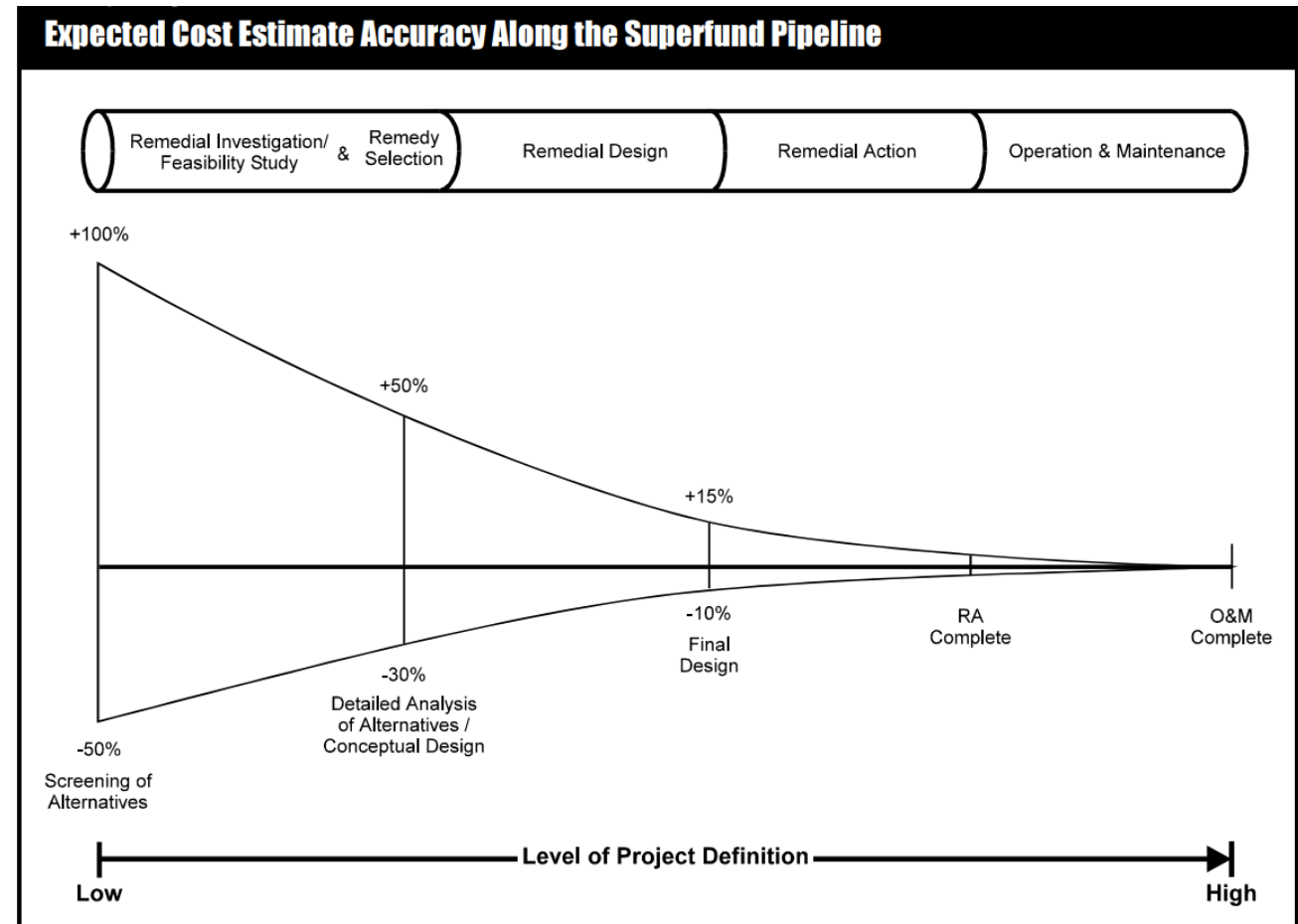
CERCLA remediation timeline



Feasibility study cost role and expectations

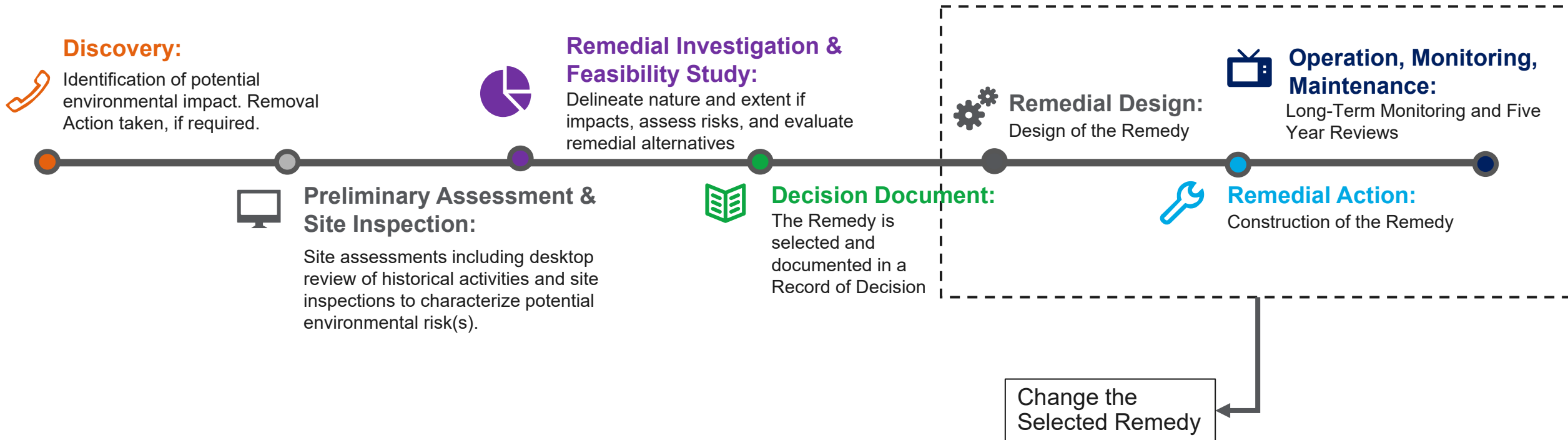
“Cost is a critical factor in the process of identifying a preferred remedy. In fact CERCLA and the NCP require that every remedy selected must be cost effective.”

USEPA. 1996. The Role of Cost in the Superfund Remedy Selection Process.



USEPA. 2000. A Guide to Developing and Documenting Cost Estimates During the Feasibility Study

CERCLA remediation timeline



Change mechanisms to Records of Decision

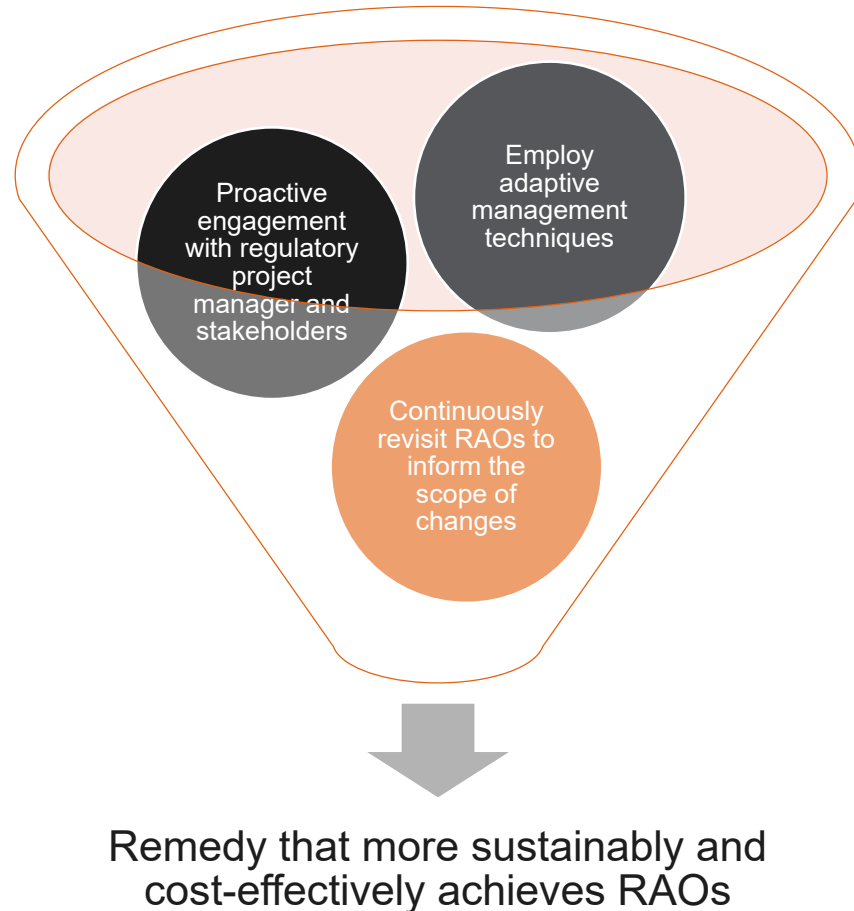


ROD Modification: Minor or “insignificant” changes. Does not require public comment prior to finalization.

Explanation of Significant Differences: “Significant” changes to scope, performance, and/or cost. Requires public comment prior to finalization.

ROD Amendments: Fundamental changes to or reconsideration of the selected remedy. Requires public comment prior to finalization.

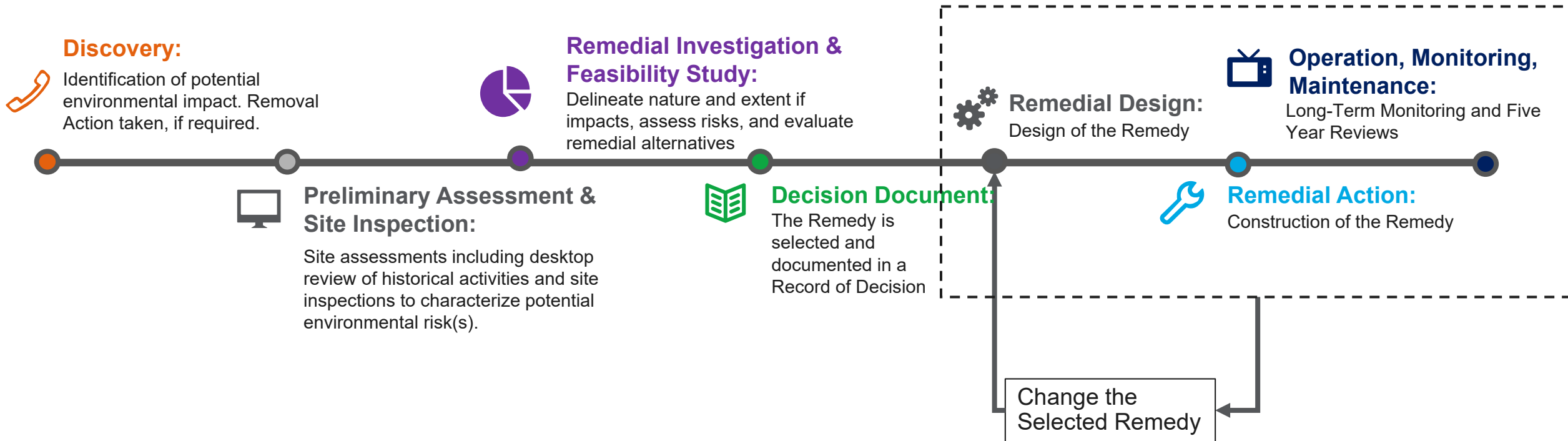
Remedy Change Strategies



“Evolving life cycle CSMs improve the efficiency of site characterization and cleanup and, ultimately, result in better, more defensible site decisions and improved remedy performance”

USEPA. 2018. Strategic Sampling Approaches Technical Guidance. November

CERCLA remediation timeline



Case Study

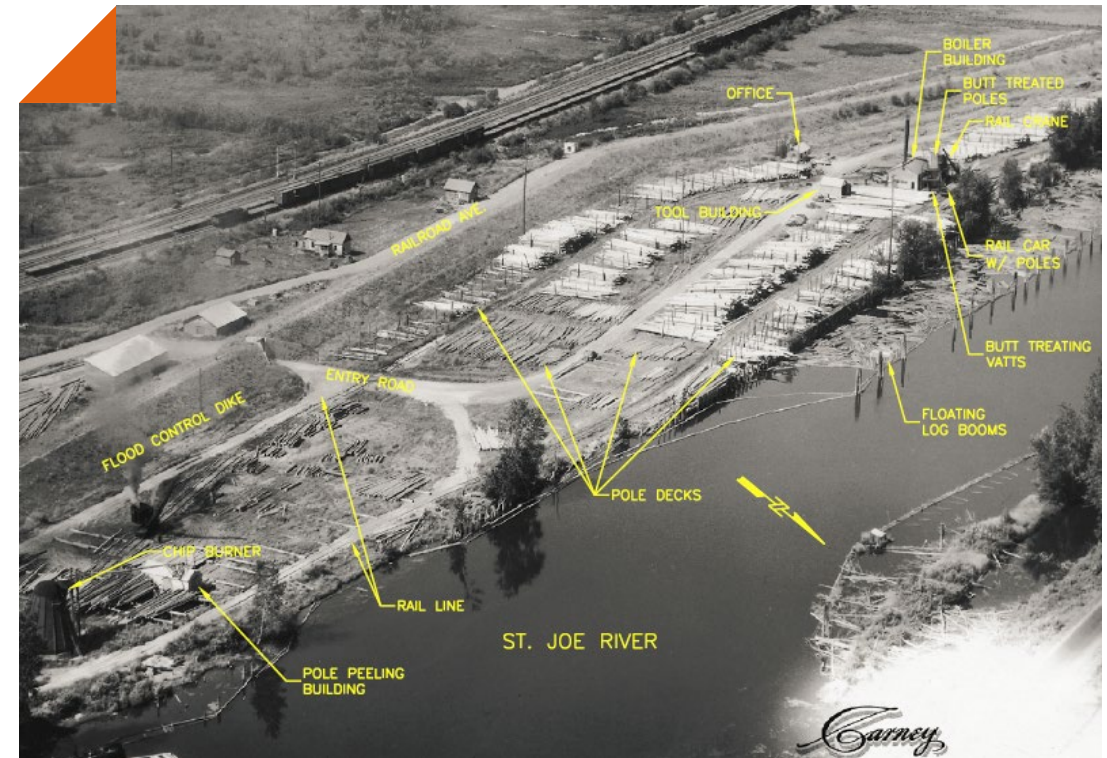
Former wood treatment facility in northern Idaho

Site overview

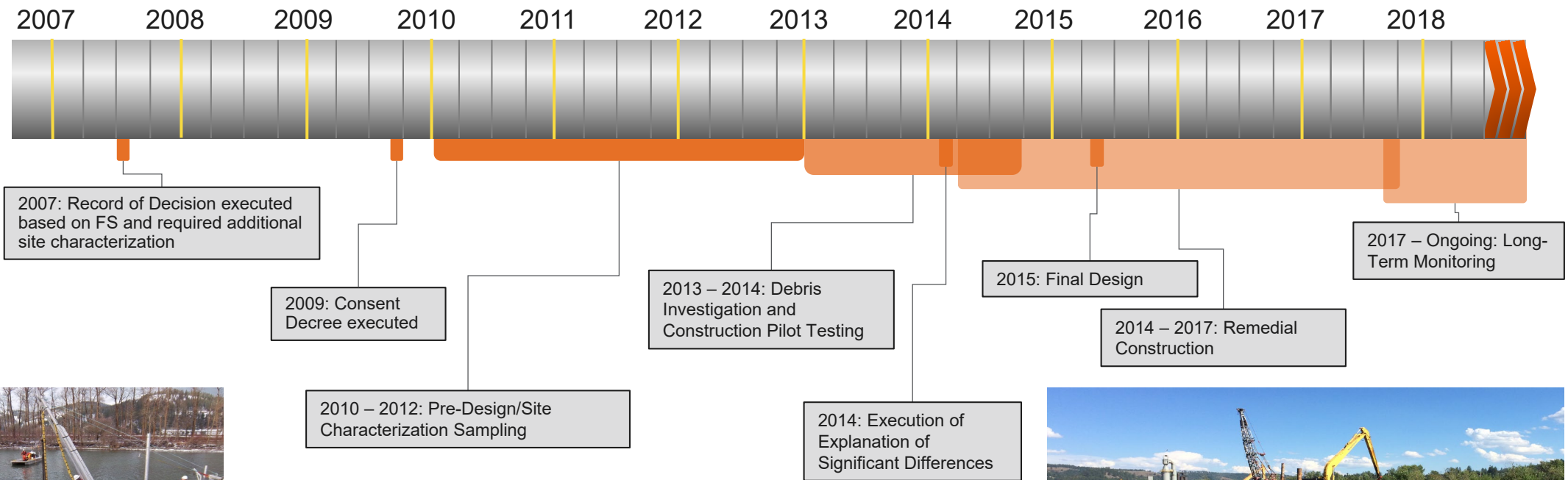
- Former wood treatment facility (1930s – 1960) in northern Idaho.
- EPA-led remediation under CERCLA (Region 10).

In-water remedy

- Removal and backfill of “source area” sediment to 12 ft bss behind a watertight steel enclosure
- Removal and backfill of downriver sediment to 4 ft bss
- Thermal desorption of sediment

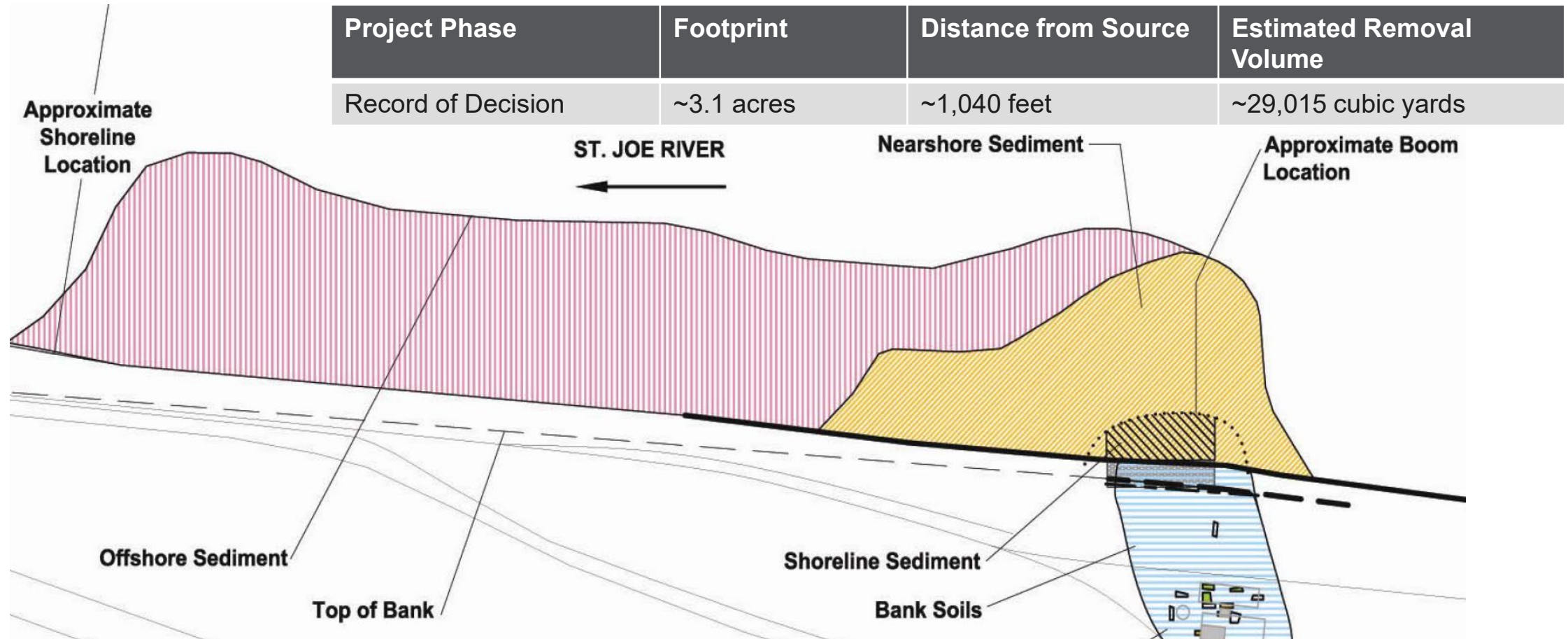


Remedial design/remedial action timeline



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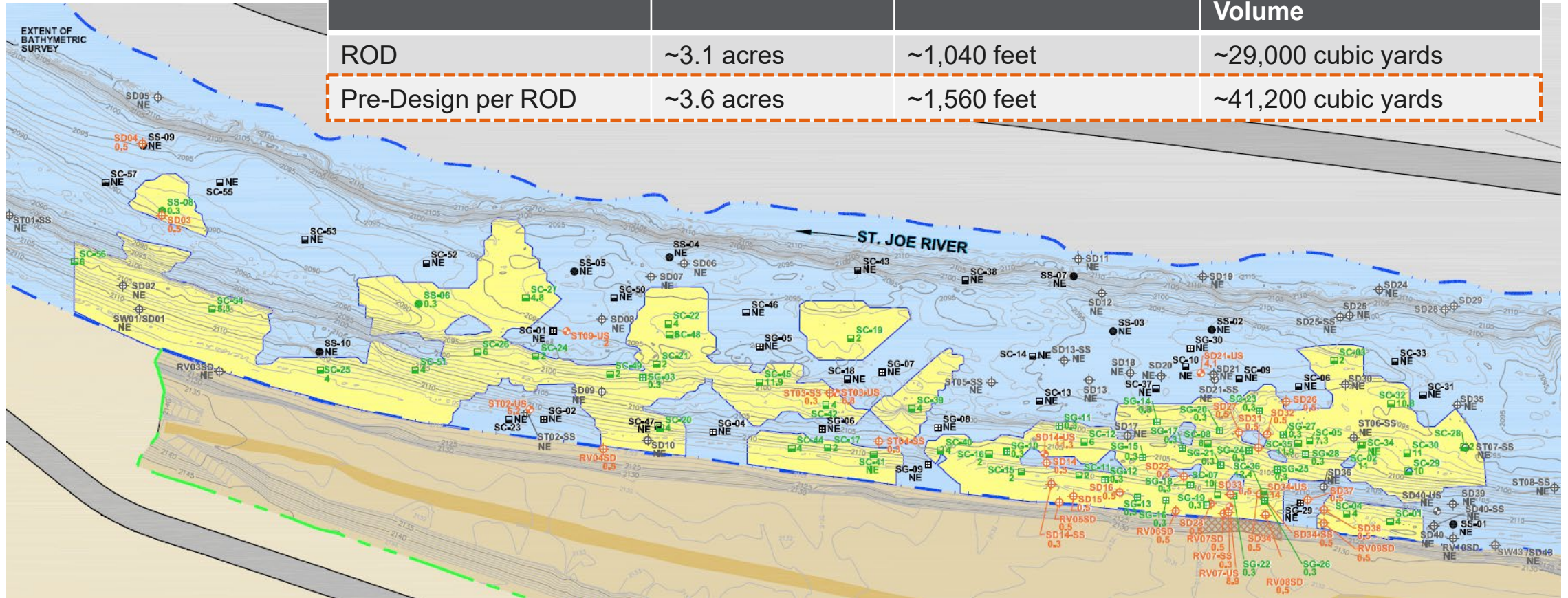
ROD description of remedy



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ROD sediment delineation after pre-design characterization

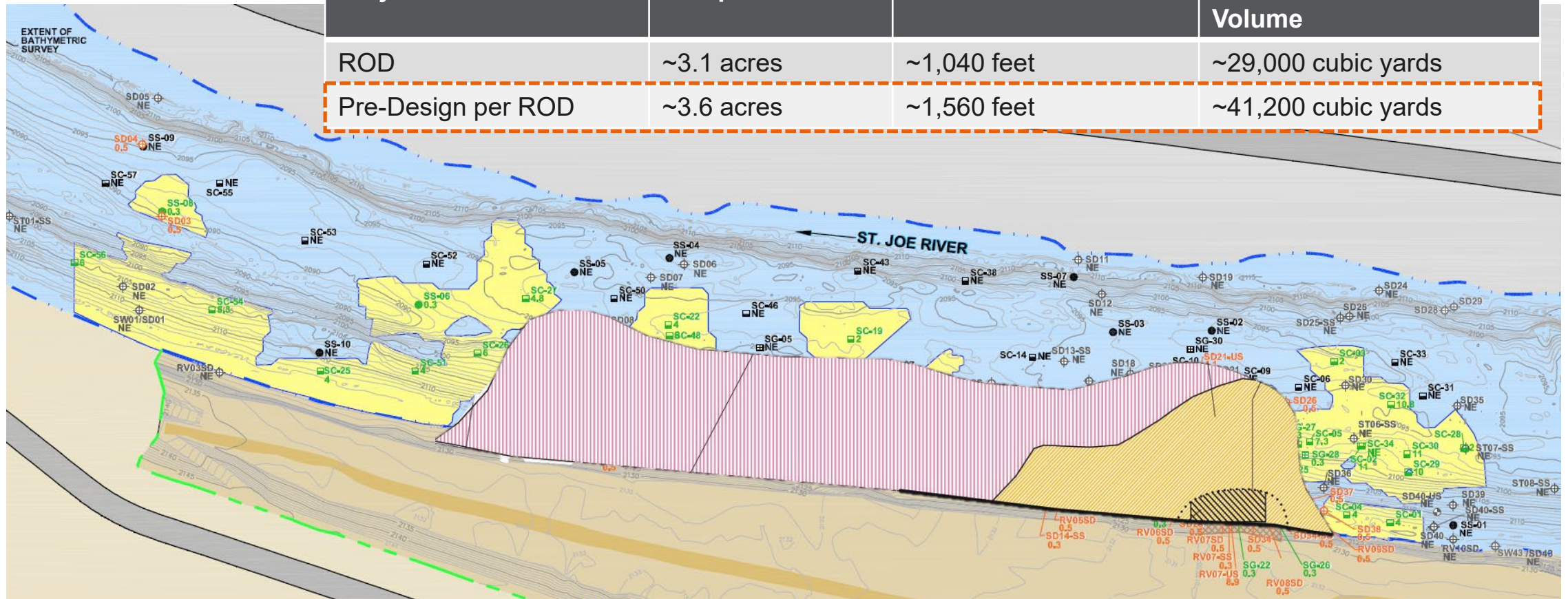
Project Phase	Footprint	Distance from Source	Estimated Removal Volume
ROD	~3.1 acres	~1,040 feet	~29,000 cubic yards
Pre-Design per ROD	~3.6 acres	~1,560 feet	~41,200 cubic yards



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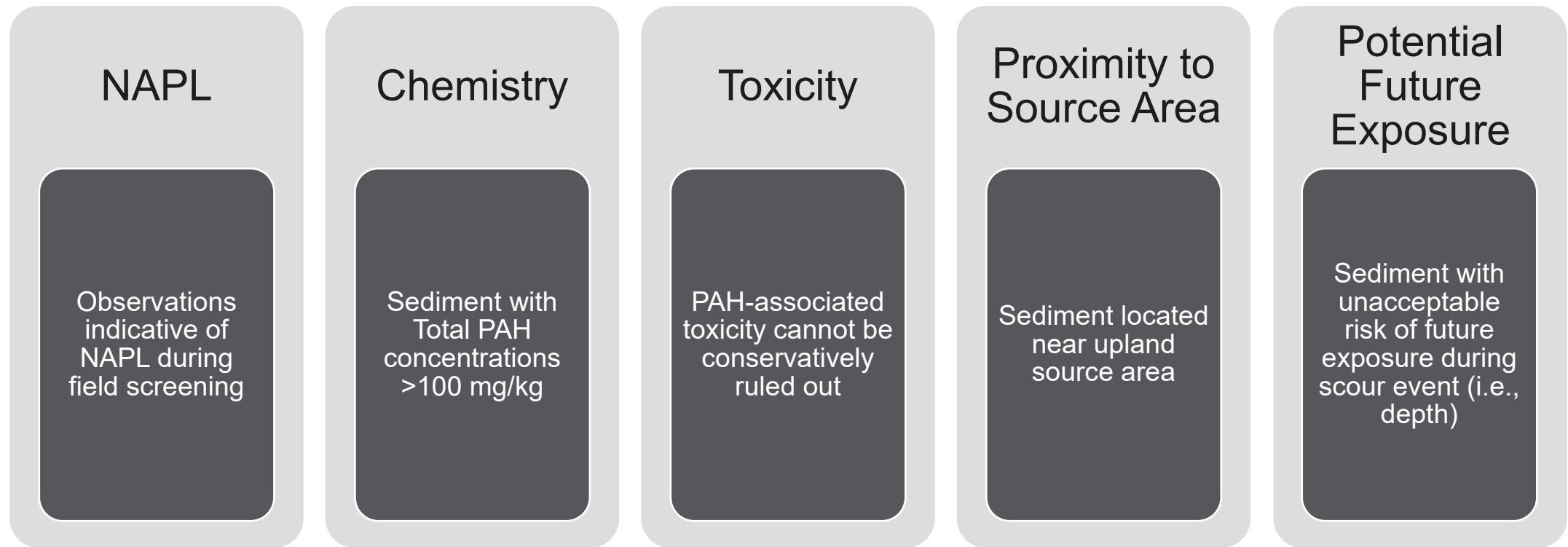
ROD sediment delineation after pre-design characterization

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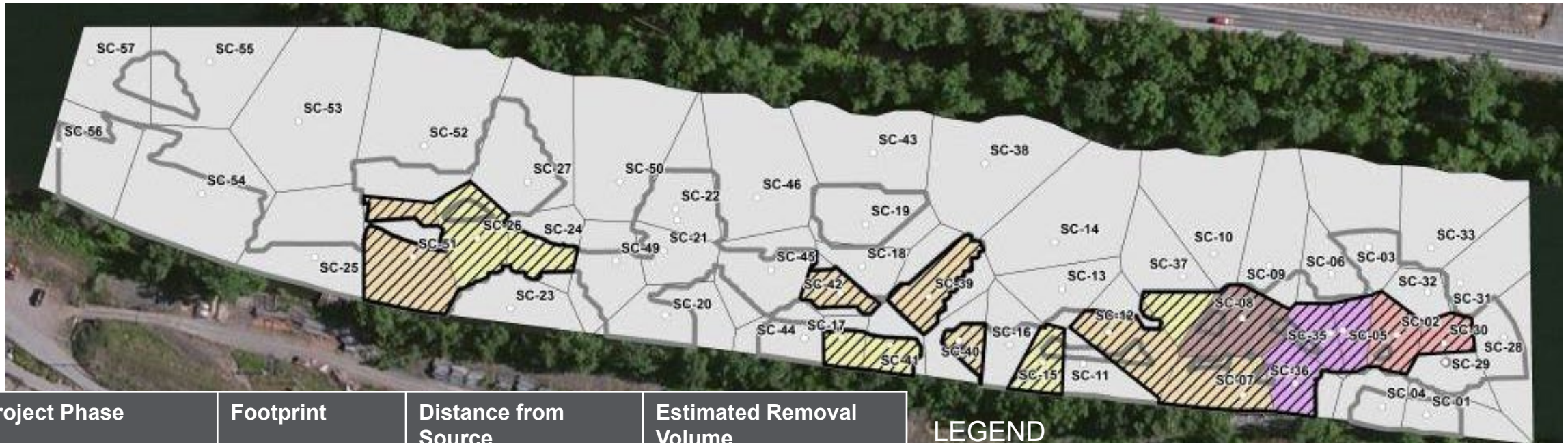


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Alternative empirically-based remedy delineation



Empirically-based alternative remedy



Project Phase	Footprint	Distance from Source	Estimated Removal Volume
ROD	~3.1 acres	~1,040 feet	~29,000 cubic yards
Pre-Design per ROD	~3.6 acres	~1,560 feet	~41,200 cubic yards
ESD	~1.9 acres	~1,200 feet	~25,000 cubic yards

LEGEND

- 2 FT PROPOSED REMOVAL DEPTH
- 4 FT PROPOSED REMOVAL DEPTH
- 6 FT PROPOSED REMOVAL DEPTH
- 8 FT PROPOSED REMOVAL DEPTH
- 12 FT PROPOSED REMOVAL DEPTH
- ROD-BASED DELINEATION
- EMPIRICAL DELINEATION
- OUTSIDE OF DELINEATION

Changes resulted in 50% dredge volume reduction and major cost savings and achieves protectiveness

Conclusions

Conclusions

Challenges:

- Reliance on pre-design to complete site characterization
- RODs informed by incomplete data lead to less sustainable and more costly remedies and longer implementation timelines.

Successful strategies:

- Incorporate adaptive management and EPA streamlined cleanup guidance early
- Relate data and remedy scope/delineation to RAOs
- Proactive engagement with regulatory project manager and stakeholders allow for more timely and successful changes

Better Data = More Sustainable and Cost Effective Remedy

Presenter



WESLEY THOMAS

Senior Civil Engineer, Portland, Oregon

- o** 503 785 9466
 - e** Wesley.Thomas@arcadis.com
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Arcadis.

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