

4. Metrics

Include metrics (i.e., measures of progress and success) in your Exit Strategy - like RAOs, metrics will reflect stakeholders' perspectives:

- Business metrics may include land use (e.g., parcel sales) and life-cycle costs.
- Regulatory metrics may include environmental indicators (RCRA), RI/FS completion (CERCLA), implementation of interim or final remedies, and issuance of a restrictive covenant.
- Technical metrics may include mass removed, contaminant concentration reduction over time, percent runtime for operating systems, and plume stability. Establish monitoring programs to measure progress toward achieving metrics.

5. Decision Logic

Decision logic establishes predefined decision points and metrics (if / then conditions) to determine when the facility can move from one phase of work to the next - such as progressing from active remediation to post-remediation monitoring when certain cleanup goals are achieved. This approach streamlines the decision-making process for site closure. Flow charts are particularly useful for documenting decision logic.

6. Gap Analysis

Data gaps are expected in long-term cleanups and plans for closing these gaps should be developed. For example, a facility may not have determined yet whether institutional controls or alternative cleanup goals (e.g., industrial) will be acceptable to the regulatory agency. Pilot testing may also be necessary to determine the feasibility of a particular remedial technology. Data gaps should not delay development of the Exit Strategy – rather, include plans to close them.

7. Schedule

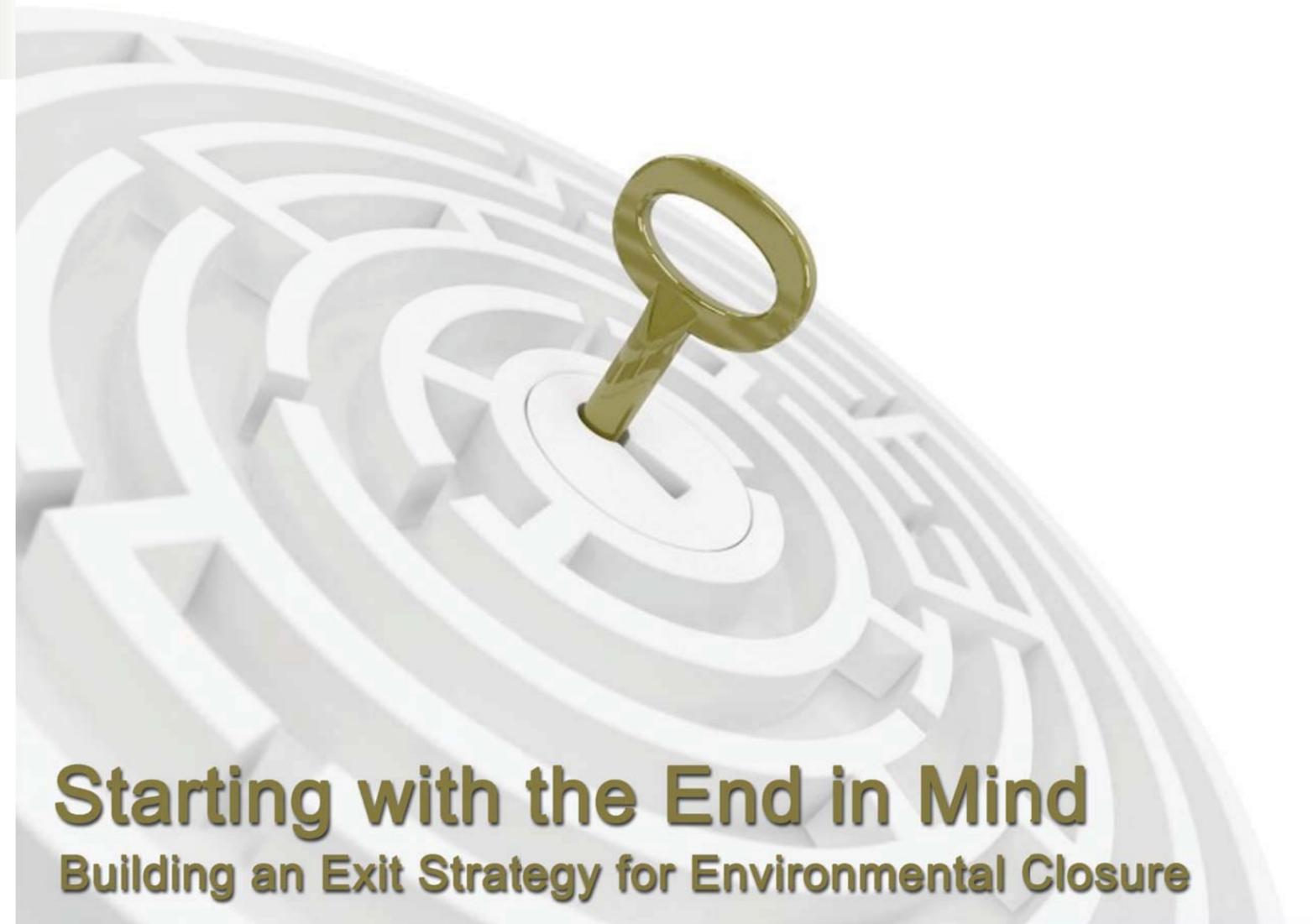
The Exit Strategy schedule will identify the tasks needed from today (the “day” you write the schedule) through environmental closure, regardless of the number of years it may take. Don't be intimidated by uncertainties or data gaps such as cleanup criteria, predicted time to reaching cleanup criteria, and other information that may not be available when the Exit Strategy is developed. Creating a schedule will help to guide your efforts to reduce uncertainties and close data gaps.

It's okay for an Exit Strategy schedule to span years and possibly even decades. Laying out the entire timeframe puts activities in perspective and may influence the path forward. Just be sure to include monitoring activities that measure progress toward meeting metrics and incorporate decision logic that allows you to move smoothly from one remediation stage to the next.

Achieving Environmental Closure: Implement Your Exit Strategy

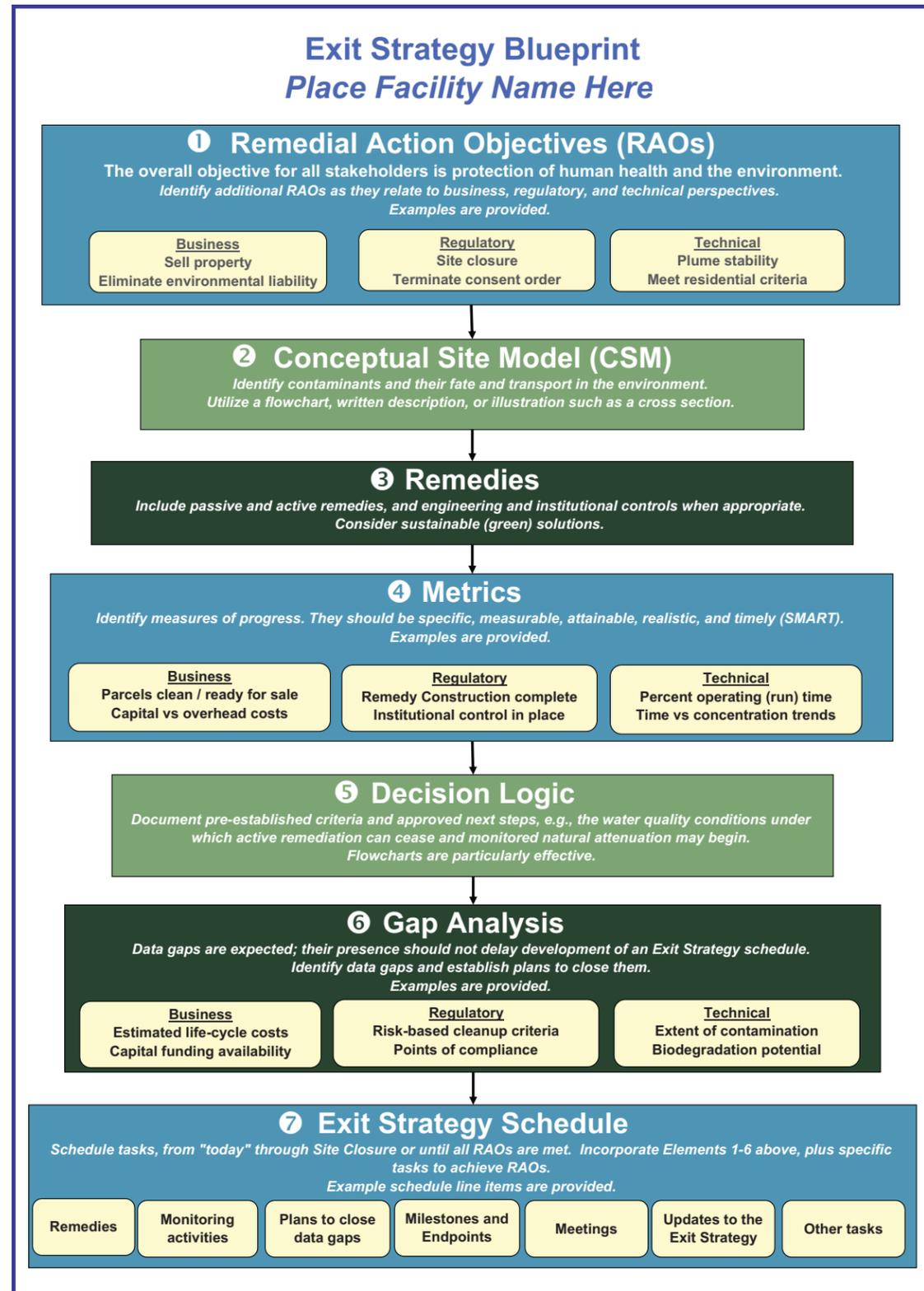
Properly implemented, an Exit Strategy will save you time and money by keeping your project on a focused path forward. You will efficiently close data gaps and collect only relevant data. You will measure progress and not delay reaching or implementing decisions, since stakeholders have established and agreed upon decision logic criteria. If you incorporate annual reviews of your RAOs, CSM, and Exit Strategy Schedule, you will maintain momentum and find yourself in the best possible position to achieve environmental closure according to the specific objectives you established.

Now, start with the End in Mind and build your Exit Strategy!



The Exit Strategy

Getting Started: Create Your Blueprint



An Exit Strategy is a valuable tool for keeping an environmental remediation project on schedule and within budget. Most importantly, it establishes common goals that embrace the facility, agency, and scientific perspectives relating to site closure. Together, stakeholders develop the essential elements of the Exit Strategy: remedial action objectives (RAOs), a conceptual site model, remedies, metrics, decision logic, gap analysis, and a schedule. Then they work toward common goals and measure progress against the pre-established metrics. The Exit Strategy is dynamic; stakeholders should design it to change as RAOs change or obstacles are encountered and overcome.

Moving Forward: Establish The 7 Elements of an Exit Strategy

1. Remedial Action Plan Objectives (RAOs)

What better place to start than with the end in mind? Establish your endpoints (RAOs) first!

Stakeholders should work together, as each of their perspectives will affect site remediation decisions and solutions.

- Business endpoints may include selling property, reducing liabilities, controlling or managing costs, or eliminating permits within a certain timeframe.
- Regulatory endpoints may include final determinations such as closure or termination of a permit or other regulatory mechanism.
- Technical endpoints may include plume stability or meeting final cleanup standards.

2. Conceptual Site Model (CSM)

Developing an Exit Strategy requires an understanding of the current site conditions, including contaminant sources, affected media (e.g., soil, groundwater), contaminant fate and transport, and potential exposure points and receptors. Summarize this information in a Conceptual Site Model (CSM) as a flow chart, text, hydrogeologic cross section, or other illustration – and this succinct document will become an indispensable tool for refining other elements of the Exit Strategy such as RAOs and remedies.

3. Remedies & Expected Performance

Remedies to achieve the RAOs range from no further action to a combination of engineering solutions and institutional controls. Remediation may include technologies such as permeable reactive barriers, pump and treat, air sparging, and electrical resistive heating. Innovative and green solutions are used where possible. Institutional controls may include restrictive covenants, water use restrictions, and other forms of land and resource use controls. Estimating the expected performance (e.g., time to achieve cleanup criteria) is important in selecting a remedy that will meet RAOs within the desired timeframe.