ASSET PERFORMANCE | PRACTICAL DECISION TOOL

Lifecycle Decision Comparison

A practical worksheet for comparing asset options over time

Lifecycle economics brings cost, risk, performance, operating impact, organizational capacity, and remaining asset value into the same decision. Use this tool to compare credible options such as planned intervention, continued monitoring, operating changes, deferral, repair, mitigation, replacement, or additional evidence gathering.

DECISION CONTEXT

Asset / System	Decision Date	Decision Horizon	Decision Owner

THE ECONOMIC LENS

Immediate expenditure What must be spent or committed now?	**Ongoing OPEX** What recurring operating or maintenance cost follows?	**Planned labor & resources** Who is needed, for how long, and at what burden?	**Downtime / throughput** What operating capacity or production is affected?
Remaining life & value What useful service, flexibility, or future value is preserved?	**Cost of deferral** What becomes more expensive, constrained, or urgent if the decision waits?	**Emergency response exposure** What unplanned repair, mobilization, specialist, or response costs could arise?	**Organizational labor diversion** Who gets pulled away from normal work if the condition becomes an event?
Environmental / regulatory exposure What response, remediation, investigation, reporting, or enforcement exposure is credible?	**Other business consequences** What customer, supply, legal, contractual, reputation, or project effects matter?	**Uncertainty** Which assumptions or information gaps could materially change the economics?	**Reversibility** How easily can the organization change course later?

Basis & use: This SOUBEL tool is an independent practical synthesis of established asset-management, life-cycle-cost, integrity, reliability, and risk principles. It supports leadership comparison and documentation; it does not replace engineering analysis, formal life-cycle costing, risk assessment, applicable regulation, or company procedures.

Compare the available courses of action on the same economic basis.

Use each column for one possible course of action. Example: Repair now | Continue monitoring | Modify operations | Replace. Use estimates, ranges, or qualitative ratings where exact values are not yet available.

Option name / description	Option A Course of Action	Option B Course of Action	Option C Course of Action	Option D Course of Action
Immediate expenditure				
Ongoing OPEX				
Planned labor & resource demand				
Downtime / throughput / production impact				
Remaining life or value preserved				
Cost of deferral				
Emergency repair & response exposure				
Organizational labor diversion				
Environmental / regulatory exposure				
Other business consequences				
Key uncertainty / assumptions				
Reversibility / future flexibility				

DECISION CHECK

Which option produces the strongest balance of required performance, credible risk exposure, economic value, organizational capacity, and future flexibility over the decision horizon?

Document why the decision makes economic sense - and what would change it.

Preferred option and rationale *State the selected option and why its overall economic, operational, and risk profile is preferable now.*	**Evidence supporting the comparison** *Identify condition, operating, maintenance, integrity, financial, production, workforce, and other evidence used.*
Assumptions that matter *Record assumptions about condition progression, downtime, labor, costs, remaining life, response burden, or consequence.*	**What could change the economics?** *Define new evidence, cost changes, failure progression, operating changes, regulation, resource constraints, or thresholds that could change the decision.*
Review trigger and timing *State the trigger, threshold, event, or review date that requires the comparison to be revisited.*	**Outcome / effectiveness measure** *Define how the organization will know whether the decision preserved value, controlled exposure, and produced the intended outcome.*

ORGANIZATIONAL CAPACITY IF THE CONDITION BECOMES AN EVENT

A significant event can consume both direct response labor and the capacity of salaried employees who are diverted from their normal responsibilities. Capture the likely cross-functional burden rather than treating labor as invisible.

Function / role	People likely involved	Estimated duration / intensity	Normal work displaced	Incremental cost / exposure

Decision owner: _____ **Review date:** _____ **Record / reference:** _____

