Aegis Station Contingency Dossier

Asteroid-Based Water Supply & Strategic Adaptation

I. CONTINGENCY TRIGGER

This fallback planning track is activated if:

- Lunar water deposits prove insufficient, inaccessible, or economically nonviable
- Lunar ISRU systems fail to scale within the required timeframe
- Political, legal, or logistical conditions prevent effective lunar development
- Any critical dependency on the Moon becomes a programmatic bottleneck

Note: Earth-sourced water is not under consideration and is permanently excluded as a supply option. The mass, cost, and launch burden render it infeasible at any scale.

II. STRATEGIC RESPONSE FRAMEWORK

Rather than a single fallback plan, Aegis Station supports **three viable in-space water strategies**, all of which preserve the station's core mission and architecture.

III. COMPARISON TABLE – Water Source and Station Location

Category	1. Lunar Orbit / Lunar Water*(Baseline)*	2. Lunar Orbit / Asteroid Water *(Contingency)*	3. Asteroid Station / Asteroid Water *(Relocation Concept)*
Water Source	Lunar polar ice (in situ ISRU)	Ice-rich C-type asteroids (e.g., Themis)	Same (C-type/distant targets)
Station Location	Lunar orbit (ideal for assembly, access, expansion)	Same	Asteroid-based (co-located w/ mining ops)
Transport Complexity	Low (surface–orbit)	High (deep-space round trips)	Low or none (station sits at source)

Delivery Timeline	5–7 years (w/ 45×45t tankers)	7–15 years (slower ramp-up, multi-month transits)	Immediate post-extraction (if co-located)
Launch Requirements	Moderate (tankers, ISRU equipment)	High (miners, SEP tankers, depots)	High (station modules to deep space, autonomy)
Station Assembly & Spin	Proven orbital conditions	Same	Requires anchoring, attitude control, less studied
Crew Access & Rotation	Moderate (from Moon or Earth)	Same	Difficult (months of transit, deep-space risk)
ISRU Supportability	High (reusable surface infrastructure)	Medium (complex mining return chains)	High (proximity to ice), but no local industry yet
Expansion Potential	Lunar base synergy, hub for cislunar ops	Opens solar logistics network, Martian staging	Enables asteroid settlement, long-term industrial base
Risk Factors	Terrain + yield uncertainty	Anchoring, transit loss, thermal management	Isolation, redundancy gaps, tech readiness
CapEx Estimate (Relative)	Baseline	2–3× Baseline	4–5× Baseline
Strategic Upside	Builds Moon economy, fast shielding	Enables deep-space water supply lines	Breaks surface dependency entirely

IV. OPERATIONAL SHIFT: FROM BINARY TO FLEXIBLE PLANNING

The previous “Plan A vs. Plan B” structure is now replaced with a **tiered path system**:

1. **Path 1:** Lunar water remains the most efficient, scalable short-term plan.
2. **Path 2:** If lunar ISRU fails, asteroid-sourced water allows Aegis Station to remain in lunar orbit with a new supply chain.
3. **Path 3:** Full relocation to a large ice-rich asteroid may enable permanent off-Earth civilization, but introduces radical new risks.

This framework supports modular deployment and real-world contingency pacing.

V. EXISTING ANALYSIS RECLASSIFIED

The remainder of this dossier, including cost breakdowns, target selection, and deep-space miner architecture, now applies specifically to **Path 3: Asteroid Station / Asteroid Water**. These systems may also support **Path 2** via long-haul delivery to lunar orbit, with appropriate depot integration.

No revisions to Sections VI–IX are required other than context clarification.

Addendum

❌ Earth-Sourced Water: Excluded Permanently

Aegis Station will never rely on Earth-supplied water. Delivering 3.3 million tons from Earth orbit would require ~33,000 heavy-lift launches, cost over $1.5 trillion, and take decades even at unprecedented launch rates. This path is ruled out on cost, logistics, and environmental grounds.