DENSITY

NVM → good density
→ Less static energy loss → Pros
→ Fast reads
→ Slow writes → Cons
→ Damages cells

Write bypass
↓
Reduces hitrate
↓
Solution

DENSITY → Intelligent bypass → WCAB
→ VHC

WCAB → congestion detection → LLC request queue is full + % Writes > threshold

→ Liveness score → Observation sets
↓
Count access after first write
↓
4 buckets

→ Bypass → If congestion → Bypass writes in queue with low liveness

score

VHC → Frequent dirty fill → Wait longer in L2 → Merge changes

↳ Frequent clean fill → Have duplicates in L2 & LLC.