

Compliance Workflow Spec (C9 Producer)

This spec translates jurisdiction rules cataloged in t7-jurisdiction-rule-map into a deterministic process model: the ordered steps, required documents, review and approval gates, and exception paths that a compliance agent must execute for a given permit or regulatory determination. It is built on the process-modeling patterns of e4-workflow-artifacts and serves as the C9 producer: for every compliance determination the agent makes, it emits a structured provenance record to s3-provenance-metadata-schema. When a determination crosses the expert-review boundary, the workflow blocks applicant-final output and raises a mandatory S1 HITL event — this is how the "not legal advice" boundary is enforced by mechanism, not by prose disclaimer alone.

1. Workflow Architecture

The compliance workflow has five ordered phases. Every phase produces one or more step-level outputs; phases 3 and 4 contain the HITL gates that enforce the expert-review boundary.

Phase 1: Intake & Completeness Check
Phase 2: Rule Identification
Phase 3: Per-Rule Determination ← C9 emission point; HITL gate if expert_review_required
Phase 4: Aggregated Disposition ← HITL gate if any determination is needs-review
Phase 5: Record & Notify ← Applicant-facing output released here ONLY after phase 4 clears

Phase 1 — Intake & Completeness Check

Inputs: Application payload (form, attachments, parcel data) from the district portal or intake system.

Steps:

1. Validate that all mandatory fields are present per the applicable intake form schema. Any missing field triggers a return-to-applicant sub-workflow with a checklist of deficiencies. Missing-field notices are not compliance determinations; they do not emit C9 records.
2. Confirm that the parcel GIS layer resolves the submitted parcel ID to a valid polygon within the agent's operating jurisdiction.
3. Log the accepted application with an intake timestamp. This event is logged to s2-audit-trail-schema but does not yet emit a C9 provenance record; no determination has been made.

Exception: If the parcel ID does not resolve, classify the application as incomplete and halt. Emit a C9 record with determination: not-applicable and evidence_pointer referencing the GIS lookup failure log.

Phase 2 — Rule Identification

Inputs: Validated application payload + t7-jurisdiction-rule-map (current version).

Steps:

1. For each row in t7-jurisdiction-rule-map with scope: universal, evaluate the agent_trigger condition against the application fields.
2. For local-scope rows matching the application's jurisdiction_id, evaluate triggers.
3. Produce an activated-rules list: an ordered set of rule_id values, each with the triggering field and value. This list drives Phase 3.
4. If no rules are activated (e.g., activity is genuinely below all thresholds), emit a single C9 record with determination: not-applicable and close. [ATTORNEY REVIEW] — confirm no silent exemption is being claimed.

Rule for ambiguous triggers. When a trigger condition is ambiguous — the measured value is near a threshold and the uncertainty band spans the threshold — classify the rule as activated and mark the resulting determination needs-review. Do not resolve ambiguity autonomously.

Phase 3 — Per-Rule Determination

This phase is the C9 emission point. One C9 record is emitted per activated rule per application. The determination logic for each rule must be strictly rule-based; the agent must not introduce judgment beyond what is encoded in the rule row.

Determination enum (C9 determination field):

Value	Meaning
compliant	Application meets the rule's requirements on its face
non-compliant	Application fails one or more explicit requirements of the rule
needs-review	Rule threshold is ambiguous, rule text is disputed, or the determination requires expert judgment
not-applicable	The rule's trigger conditions are not met by this application

Expert-review boundary rule. A determination MUST be set to needs-review and expert_review_required: true whenever any of the following hold:

- The rule requires interpretation of a statute or regulation beyond plain-text reading. [ATTORNEY REVIEW]
- The rule involves a threshold that requires an engineering calculation the agent cannot verify from the submitted data alone.
- The verify_flag on the rule row is true and last_confirmed is older than 12 months.
- The rule row carries attorney_review: true.
- The application involves a first-of-type fact pattern not covered by prior determinations in the evidence store.

When expert_review_required: true is set, the workflow MUST raise an S1 HITL event before proceeding to Phase 4. The HITL event uses the C2 six-field shape (event_id, timestamp, agent_id, decision_origin: escalation, evidence_pointer, rationale). Phase 4 does not execute — and applicant-facing output is blocked — until the HITL

event is resolved by a qualified reviewer.

Decision origin mapping:

Determination path	decision_origin value
Autonomous rules-based evaluation, no expert flag	compliance-determination
Routed to expert reviewer via HITL gate	escalation
Reviewer overrides agent determination	human-override

Phase 4 — Aggregated Disposition

Inputs: All per-rule C9 records from Phase 3.

Aggregation logic:

```
IF any rule determination == non-compliant → overall disposition = non-compliant
ELSE IF any rule determination == needs-review → overall disposition = needs-review (
BLOCKED until expert review clears)
ELSE IF all rule determinations == compliant → overall disposition = compliant
ELSE IF all rule determinations == not-applicable → overall disposition = not-applicable
```

An aggregated needs-review disposition blocks Phase 5. The blocking condition lifts only after every needs-review record has been resolved by a qualified reviewer and the record's determination updated to compliant, non-compliant, or not-applicable.

Phase 5 — Record & Notify

Condition to enter Phase 5: No unresolved needs-review records exist for this application. HITL gate signed off.

Steps:

1. Produce the applicant-facing determination summary. This document is a draft produced by the agent and reviewed by a clerk before transmission. It must carry the standard disclaimer: "This summary is prepared by an automated compliance screening tool. It is not legal advice and does not constitute a final agency determination. Please consult with a licensed attorney for legal guidance." [ATTORNEY REVIEW]
2. Log the finalized determination to s3-provenance-metadata-schema with retention_class: civic-7yr per s3-governance-retention-policy.
3. Emit the applicant notification draft to the clerk queue per the irreversible_impact_boundary rule from s1-hitl-review-policy — the agent does NOT send directly to the applicant.
4. Archive the application, all per-rule records, HITL event records, and evidence pointers in the provenance store.

2. Provenance Emission (C9)

This section is the contract C9 implementation. It is normative — a compliance determination that does not emit per this spec fails the integration check.

Trigger: One C9 record per activated rule per application, emitted at the close of Phase 3 step for that rule.

C9 payload schema:

```
{
  "rule_id": "string – resolves to t7-jurisdiction-rule-map row",
  "jurisdiction_id": "string – kebab-case, e.g. fl-walton-county",
  "determination": "compliant | non-compliant | needs-review | not-applicable",
  "evidence_pointer": "URI or storage key – points to the rule text cited and the
application fields evaluated",
  "decision_origin": "compliance-determination | escalation",
  "expert_review_required": "boolean"
}
```

Emission rules:

- Every C9 record is appended to s3-provenance-metadata-schema immediately on determination. Records are never held or batched.
- expert_review_required: true also raises a C2 S1 HITL event with decision_origin: escalation. The two records share a correlation_id field (consistent with C5 pattern).
- Heavy evidence payloads (rule text excerpts, application field copies) use hash-and-ref ({ref, hash, field}) rather than inline content, consistent with the C3 split-storage model.
- determination: needs-review with expert_review_required: true MUST NOT be advanced to Phase 5 output. The block is enforced by the workflow engine, not by a prose policy.

Example C9 record (illustrative):

```
{
  "rule_id": "fdep-stormwater-general",
  "jurisdiction_id": "fl-state",
  "determination": "needs-review",
  "evidence_pointer": "s3://prov/swcmcd/app-2026-0412/rules/fdep-erp-threshold-eval.json",
  "decision_origin": "escalation",
  "expert_review_required": true
}
```

The companion S1 HITL event:

```
{
  "event_id": "019123ab-...",
  "timestamp": "2026-05-29T10:14:02.440Z",
  "agent_id": "stormwater-permit-triage",
  "decision_origin": "escalation",
  "evidence_pointer": "s3://prov/swcmcd/app-2026-0412/rules/fdep-erp-threshold-eval.json",
  "rationale": "ERP threshold determination for 0.4-acre impervious increase requires
licensed engineer review; rule fdep-stormwater-general verify_flag=true and last_confirmed
> 12 months. Blocking applicant output."
}
```

3. Exception Handling

Exception	Agent behavior	HITL required
Rule row not found in jurisdiction map	Halt determination for that rule; emit needs-review C9 record with evidence_pointer referencing the lookup failure; raise HITL	Yes
Evidence pointer fails to resolve	Halt; do not emit a compliant determination without evidence; emit needs-review	Yes
Conflicting rule determinations (two rules produce contradictory requirements)	Classify entire application as needs-review; surface conflict description in rationale	Yes
Application scope crosses multiple jurisdictions	Activate rules from each jurisdiction independently; aggregate per Phase 4 logic	Only if any single rule triggers expert_review_required
Stale rule (last_confirmed > 12 months)	Set expert_review_required: true for affected rule regardless of other conditions	Yes

4. Worked Example — 30A Lot Clearing Application

Application: Parcel 09-3S-19-23000-000-0230 (illustrative parcel), 1.2 acres, Walton County. Activity: vegetation removal and 0.4-acre impervious surface addition. Submitted to SWCMCD portal.

Phase 1 result. Application complete; parcel resolves. Intake logged.

Phase 2 activated rules: walton-co-ldco, fdep-stormwater-general, swcmcd-permit-intake, fl-pub-records-access.

Phase 3 determinations:

rule_id	determination	decision_origin	expert_review_required	rationale
fl-pub-records-access	compliant	compliance-determination	false	Application submitted to district portal; public-record handling is the district's standard operating procedure
swcmcd-permit-intake	compliant	compliance-determination	false	All intake fields present; application complete per portal schema

rule_id	determination	decision_origin	expert_review_required	rationale
walton-co-ldco	needs-review	escalation	true	Impervious increase of 0.4 acres crosses County LDC Ch. 5 review threshold; engineering review required [VERIFY]
fdep-stormwater-general	needs-review	escalation	true	ERP applicability requires FDEP-threshold calculation; verify_flag: true and last_confirmed: unknown; [ATTORNEY REVIEW]

Phase 3 HITL events raised: 2 (one per expert_review_required: true rule). Workflow blocked at Phase 4 aggregation.

Phase 4 disposition: needs-review (blocked). Applicant output not produced. Clerk queue notified with the two open HITL tasks assigned to District Engineer (stormwater) and outside environmental counsel.

Phase 5 (after expert resolution): Engineer confirms LDC review required; counsel confirms ERP pre-application meeting required. Both records updated; disposition advances to non-compliant (application is not yet complete for regulatory purposes). Determination summary drafted for clerk review. Applicant notified by clerk: application requires LDC permit and ERP pre-application meeting before processing can continue.

5. Integration with e4-workflow-artifacts

This compliance workflow follows the e4-workflow-artifacts process-map pattern. Each phase maps to a workflow step (glossary term). The per-phase step IDs (intake-check, rule-identification, per-rule-determination, aggregated-disposition, record-notify) are the step_id values used when this workflow emits C5 records via any parent workflow orchestrator that wraps it. The compliance workflow itself is the C9 producer; the parent orchestrator, if any, is the C5 producer.