Janus Protocol Pilot Design & ROI Model: The Solvency Bridge (Jefferson County Demo)

Target Profile: Hypothetical "Jefferson County, MO" (Mid-sized U.S. County, 250,000 population) **The Problem:** $350 million in unfunded pension liabilities; critical bridge/highway segment failure risks. **The Proposal:** A 35-year **Structural Dependency Contract (SDC)** to resolve immediate liabilities in exchange for operational control over a revenue-generating asset.

1. Executive Summary: The Structural Arbitrage

The Janus Protocol offers to immediately underwrite a critical portion of the County's unfunded pension liability, eliminating immediate fiscal risk, in exchange for a concession to manage a specific, revenue-generating infrastructure asset (Highway X and the Bridge).
This is not privatization; it is **Structural Arbitrage.** The County transfers **inefficient, politically governed liabilities** to the **Code Fiat** system, which uses immutable Smart Contracts (**UPCC Waterfall**) and real-time usage data (**Code-Tolls**) to guarantee maintenance and solvency, something the Fiat budget system cannot do.

Metric	Fiat System (Current State)	Janus Protocol (SDC)	Result
Pension Liability Coverage	68% (Increasing risk)	Immediate bump to 85%+	Solvency achieved
Maintenance Funding	Budget-dependent; Backlogged ($120M)	Code-guaranteed (UPCC)	Guaranteed stability
Operational Risk	County retains all liability	Transferred to DRT	Risk mitigation
Financing Mechanism	Tax levy / Bonds (Interest risk)	Code-Tolls (Usage-based)	Efficient, fair funding

2. SDC Asset & Liability Term Sheet

SDC Component	Description	Financial/Structural Detail
Asset Under Concession	10-mile segment of State Highway X (including the major, failing "Unity Bridge").	**Grant Type:** 35-year Operational Concession (not fee-simple title). DRT gains exclusive right to toll and maintain.
Liability Underwritten	Funding for a critical tranche of the County's unfunded pension obligations.	**Amount:** $150 Million (Upfront Payment from Janus Treasury).
Revenue Stream	Implementation of Code-Tolls (micro-fees per mile) on the highway segment.	**Projection:** $12M/year average (growing with traffic).
Enforcement Mechanism	The **SDC Smart Contract** is the legal appendix.	**Waterfall:** Enforces UPCC: Maintenance Reserve \rightarrow Janus Debt

SDC Component	Description	Financial/Structural Detail
		Repayment \rightarrow SMT Holder Profit.
Legal Guardrails	International arbitration and community protection.	**Arbitration Seat:** London (to guarantee neutrality). **Reversion Clause:** County can buy back if PCI drops below MSG for >36 months.

3. Financial Model Sketch (5-Year Cash Flow Projection)

This model illustrates the internal UPCC waterfall for the DRT, prioritizing maintenance and debt service over profit.

Year	Code-Toll Revenue (Projected)	Maintenance & Operating Costs (PMMS/WAFI)	Maintenance Reserve Status	Janus Debt Service/Capital Repayment	SMT Holder Profit Distribution
Y1	$10.0M	$4.0M	**Initial Gap Funded**	$3.0M	$3.0M
Y2	$11.5M	$3.5M	**Target Maintained**	$4.5M	$3.5M
Y3	$12.5M	$5.0M	**Bridge Rebuild Start**	$4.5M	$3.0M
Y4	$13.0M	$5.5M	**Reserve Full**	$4.5M	$3.0M
Y5	$13.5M	$4.0M	**Target Maintained**	$5.5M	$4.0M
Note: Costs include an annual average $4.5M (average 33% of revenue) to ensure the Pavement Condition Index (PCI) remains high.					

4. Key Performance Indicators (KPIs) & Governance Guardrails

The success of the pilot is defined by measurable, third-party verifiable metrics, ensuring accountability to the community and the State.

KPI Category	Metric	Target	Measurement Method
Fiscal Health	Pension Solvency Ratio (County)	Increase by >15 percentage points within 12 months.	County Actuarial Report
Infrastructure	Pavement Condition Index (PCI)	Maintain or exceed average of 90 (on 100	SDAM Oracle (Satellite + Local Inspector Data)

KPI Category	Metric	Target	Measurement Method
		scale).	
Community	Public Satisfaction Score (PSS)	>80\% approval of road quality.	Quarterly Third-Party Survey
SMT Risk	SMT Concentration Ratio	No single entity to hold $ > 15%$ of tradable SMTs.	IAL Ledger Audit
Reliability	Unscheduled Maintenance Delays	< 3 Incidents per year (per 10 miles).	IAL Sensor Data