



A HOOSIER MODEL FOR REGIONAL WATER SECURITY

A Framework for Topographic Governance, Local Autonomy, and Sustainable Economic Growth

Presented to the Central Indiana Regional Development Authority – Water Infrastructure Taskforce

Executive Summary: The Water Governance Imperative

The Core Problem

- Rapid industrial expansion (advanced manufacturing, biotech, hyperscale data centers) introduces unprecedented volume demands on aquifers.
- Localized residential wells and agricultural operations face growing risks from uncoordinated regional drawdowns.
- Current single-county political boundaries are structurally incapable of managing macro-level hydrological resources.

The Proposed Solution

- Transition Indiana's water governance to a self-sustaining, hydrologically aligned watershed model.
- Create Regional Water Management Districts (RWMDs) mapped to USGS HUC-8 topographic sub-basins.
- Establish clear statutory appointment rules that resolve local deadlocks automatically.
- Provide transparent, science-driven certainty for economic development.

Strategic Outcomes

- Protects foundational utility investments and local rate structures.
- Preserves resource baselines and land values for agricultural communities.
- Self-funded via local user premiums without creating public debt or expanding general taxes.
- Leverages existing financial strength of the Indiana Finance Authority (IFA).

Introduction: The Imperative for Reform

3 Macro-Trends Fracturing Legacy Systems

High-Volume Industrial Demands

Shift from linear municipal utility growth to exponential, high-capacity extraction for manufacturing, biotech, and data centers.

Vulnerability of Shared Aquifers

Groundwater ignores political lines. Industrial drawdown creates cones of depression affecting wells multiple jurisdictions away.

Fragmented Administrative Authority

No single local entity possesses the geographic scope or technical data to manage shared aquifers, driving an uncoordinated 'race to the bottom'.

Guiding Reform Principles

Hydrological Alignment

Political boundaries must yield to natural topography and subterranean aquifer structures.

Data-Driven Proportionality

Allocations and funding governed by objective, real-time telemetry rather than political influence.

Automatic Conflict Resolution

Governance deadlocks trigger predictable, non-political statutory fallback mechanisms.

Preservation of Home Rule

Retail utility ownership, rate-setting, and daily operations remain strictly in local hands.

Section I: Organizational Structure & Watershed Alignment

The Regional Boundary Framework

Topographic Boundaries (USGS HUC-8)

Rather than county or municipal lines, boundaries follow the natural contours of Indiana's 39 distinct HUC-8 sub-basins. A single regional entity oversees the entire area impacting a shared aquifer or river system.

Averaging the Geographic Scale

An average Indiana sub-basin spans approximately 500,000 to 1,000,000 acres, intersects 5 to 8 counties, and encompasses 70,000 to 1,000,000+ residents depending on density.

Statutory Legislative Mandate

RWMDs are created via state legislative mandate, requiring all counties and municipalities within a designated sub-basin to participate in a unified resource-management framework.

39

HUC-8 Sub-Basins Across Indiana

500k–1M

Acres Per Sub-Basin Area

5 to 8

Counties Intersected Per District

Section II: RWMD Board & Appointment Architecture

7-MEMBER REGIONAL WATER MANAGEMENT DISTRICT BOARD

Strict statutory selection rules ensure balanced representation and resolve local political stalemates automatically.

Urban / Municipal (3 Seats)

- Capacity-Based Tiering Rule: Utilities ranked annually by aggregate average daily withdrawal within HUC-8 boundaries.
- Automatic Appointment: Lead executives of top 3 highest-capacity water systems inherit seats.
- Multi-Utility Provision: Remaining lower-volume utilities form Advisory Council with 1 non-voting liaison.

Rural / Agricultural (3 Seats)

- Ag-Density Rule: Seats assigned to top 3 counties holding highest agricultural land percentage in sub-basin.
- County Appointees: Commissioners of leading 3 counties each make 1 appointment.
- Statutory Fallback: If Commissioners deadlock >45 days, power defaults to Purdue Extension Agent to appoint local ag producer in 15 days.

Technical Expert (1 Seat)

- Hydrogeologist Seat: Licensed Professional Geologist (LPG) or PE specializing in hydrogeology.
- Conflict-of-Interest Safeguards: Must function as independent expert; cannot be employee or consultant for active utilities/ag lobbies.
- Fallback Selection: Jointly elected by 6 members. If split 3-3 after 30 days, power defaults to State Geologist.

Section III: Division of Responsibilities (Local vs. State)

Local RWMD Board (Field Stewardship)

- **Observation Grid Deployment:**

Maintains sub-basin monitoring grid integrating USGS gages, DNR wells, and weather stations.

- **High-Capacity Allocation Review:**

Reviews local development projects and utility expansions requiring high-capacity withdrawal.

- **Local Capital Allocation:**

Directs Watershed Protection Fee revenue into local infrastructure (leak repair, ag recycling, recharge easements).

- **Local Aquifer Defense:**

Acts as legal and administrative representative to defend local water table stability against external drawdowns.

Indiana Department of Water / IDW (Central Science)

- **Division of Aquifer Modeling:**

Maintains cloud-based 3D subterranean model aggregating real-time telemetry; runs 20-year stress-testing simulations.

- **Division of Compliance & Telemetry:**

Sets mandatory engineering standards for telemetry equipment across all reporting districts.

- **Appellate Arbitrator:**

Agency Head issues binding administrative rulings on inter-basin disputes and border drawdown conflicts.

- **Federal Funding Gatekeeper:**

Manages Project Priority List (PPL) certifying regional projects for EPA grants, SRF, and WIAF loans.

Section IV: Local Funding Architecture & User Fees

The 4-Tier Watershed Protection Fee

Tier 1: Agricultural Resource Fee

\$1.00 / active acre / year. Processed via Watershed Assessment Rider on semi-annual county tax bills (like 'ditch tax').

Tier 2: Base Residential Unit Fee

\$1.00 / household / year. Appended to parcel tax bills as non-tax user fee rider via county software.

Tier 3: Private Well User Premium

\$10.00 / active private well / year. Permit registry mapped to parcel numbers; earmarked for well defense.

Tier 4: Commercial & Industrial Capacity Fee

\$1.00 / EDU / year for utility connections. Off-grid private wells <100k GPD charged \$25 (small) or \$100 (large) flat rate.

STATUTORY EFFICIENCY MANDATE

Max 30%

Administrative & Overhead Capped (legal, consulting, salaries)

Min 70%

Direct Reinvestment into tangible local water security infrastructure and field capital.

Financial Illustration: Sugar Creek Sub-Basin

Revenue Tier	Sub-Basin Metric (Estimated)	Annual Fee	Projected Revenue
Tier 1: Agriculture	480,000 Cultivated Acres	\$1.00 / Acre	\$480,000
Tier 2: Residential	65,000 Household Units	\$1.00 / Unit	\$65,000
Tier 3: Private Residential Wells	~13,000 Estimated Active Wells	\$10.00 / Well	\$130,000
Tier 4a: Utility-Served Commercial	45,000 Active EDUs	\$1.00 / EDU	\$45,000
Tier 4b: Small Off-Grid Commercial	600 Small Businesses	\$25.00 Flat	\$15,000
Tier 4c: Large Off-Grid Commercial	150 Large Businesses	\$100.00 Flat	\$15,000
Total Estimated Revenue	Sugar Creek Sub-Basin Total	-	\$750,000 / year

- Sugar Creek Local Fund Allocation (30/70 Rule Applied):**
- Max \$225,000/year for regional engineering, legal, and operational overhead.
 - Min \$525,000/year directly injected into local water security infrastructure projects.

Section V: State-Level Funding Framework (IDW)

Cigarette Tax Realignment

- Base Operations: Core administrative and technical payroll funded via nominal 0.5% dedication of state cigarette tax revenue.
- Uses Clean Water Indiana precedent (IC § 6-7-1-29).
- Ensures long-term operational predictability without expanding state general tax footprint.

Industrial Oversight Fees

- SWWF Surcharges: Permitting and compliance fees levied exclusively on Significant Water Withdrawal Facilities (>100,000 GPD).
- Exemptions: Residential, small business, and standard ag use are statutorily exempt.
- Shifts engineering cost of heavy drawdown tracking entirely onto high-volume extractors.

Technical Modeling Fees

- Fee-for-Service: Advanced site-specific aquifer stress tests or regional simulations executed for developers/districts.
- Enterprise Fund: Revenues restricted solely to upgrading statewide hydrogeological sensors and computing infrastructure.
- Protects Utilities: Surcharges cannot be blended onto residential rate classes.

Section VI: Inter-Agency Financial Alignment & Governance

Retention of IFA Fiscal Trusteeship

The Indiana Finance Authority (IFA) retains exclusive statutory custody, management, and underwriting responsibility for State Revolving Fund (SRF) programs and the Water Infrastructure Assistance Fund (WIAF). This protects existing bond covenants and Indiana's AAA credit rating.

IDW as Technical Gatekeeper (PPL Integration)

IDW serves as sole technical authority for project validation on the Regional Water Security Project Priority List (PPL). No utility or RWMD may access SRF interest rate discounts or WIAF loans without a formal Certificate of Hydrological Compatibility issued by IDW.

Statutory Earmark for Local Organization (\$250,000 Seed Grant)

WIAF statute amended to create a Regional Management District Startup Account. Upon IDW certification of a new RWMD, IFA automatically disburses a one-time \$250,000 seed grant for initial engineering procurement and local data mapping.

Section VII: Inter-Basin Transfers & Appellate Protocols

Inter-Basin Transfer Rules

- **Dual-Basin Review:**

New/expanded transfers >500,000 GPD require Certificate of Environmental Compatibility from both originating and receiving RWMD boards.

- **Grandfathered Baselines:**

Existing interconnections and transfers grandfathered at historical maximum daily volumes.

- **Watershed Export Fee:**

Receiving entity pays mandatory \$0.05 per 1,000 gallons on net unreturned volume back to originating district for replenishment.

- **Exemptions:**

Emergency mutual aid, net-zero reciprocal interchanges, and grandfathered baseline volumes are exempt from export fees.

IDW Appellate Arbitrator Process

- **Administrative Petition:**

If an originating board denies a transfer, or a downstream board challenges border drawdown, an aggrieved board files a petition with IDW.

- **Mandatory 90-Day Stay:**

Filing triggers an automatic 90-day administrative stay on the proposed project.

- **Independent 3D Simulation:**

IDW hydrogeologists run localized 3D aquifer impact models across both districts.

- **Binding Ruling:**

IDW Agency Head issues a final, binding administrative ruling to approve, modify, or veto the transfer based strictly on sustainability metrics.

Geological Customization & Statutory Safeguards

Geologically Customized Mandates

- **Glaciated Northern Region:**

Deep sand-and-gravel aquifers. Priorities focused on Volumetric Quantity, drawdown limits, and tracking cumulative cones of depression.

- **Southern Karst Region:**

Unglaciated fractured limestone. Priorities focused on Groundwater Quality and Contamination Velocity due to rapid surface water entry via sinkholes.

- **Resource Availability:**

Both regions preserve statutory focus on long-term water availability, yield, and allocation security.

Home Rule & Zoning Protection

- **Retail & Operations Autonomy:**

RWMD boards are statutorily prohibited from setting retail utility rates, managing local distribution lines, or interfering in utility staffing.

- **Wholesale vs Retail Split:**

RWMD regulates wholesale aquifer capacity; local utility maintains 100% control over pricing, treatment plants, and retail service.

- **Land-Use Zoning Carve-Out:**

RWMD holds zero local zoning authority. Local Plan Commissions retain full zoning control.

- **SWWF Integration (IC § 14-25-7-15):**

High-capacity withdrawal projects (>100k GPD) must secure a Certificate of Hydrological Compatibility before local site plan execution.

Technical Infrastructure & Automated Observation Grid

Integrated Multi-Asset Grid

- **18-Month Deployment Mandate:**

Each RWMD must establish a standardized monitoring grid within 18 months of formation.

- **Asset Integration First:**

To maximize \$250k seed grant capital, districts must first integrate existing USGS stream gages, DNR observation wells, municipal sites, and weather stations.

- **Strategic Capital Placement:**

New telemetry observation wells constructed in unmonitored high-capacity industrial zones or sensitive ag borders.

- **Surface & Groundwater Tracking:**

Captures interactions, recharge rates, and seasonal baseflow depletion across sub-basin.

Automated Telemetry & Open Data

- **Continuous Fixed-Interval Logging:**

Digital loggers track groundwater levels, static head elevations, and discharge.

- **Scheduled Batch Transmissions:**

Data transmitted via scheduled automated intervals (daily/sub-daily) to preserve battery, telemetry costs, and bandwidth.

- **Open-Access Statewide Database:**

Streams directly to IDW's open-access 3D aquifer database.

- **Standardization & Transparency:**

Eliminates manual paper logging errors and self-reported industrial bias; public web portal access.

EXECUTIVE CONCLUSION: BALANCED WATER SECURITY

1. Replaces Gridlock

Offers a decisive structural solution replacing temporary local workarounds with predictable, science-driven topographic governance.

2. Reconciles Priorities

Safeguards municipal utility investments, protects agricultural land values, and establishes objective certainty required to attract major economic development.

3. Fiscal Responsibility

Achieves long-term operational sustainability through self-sustaining user fees and IFA financial strength without creating public debt or expanding general tax burdens.