

FLOOD EMERGENCY WARNING SYSTEM (FEWS) FOR MONTGOMERY COUNTY

An introductory briefing prepared for Montgomery County stakeholders under Texas DIR Contract DIR-CPO-6230: connecting rural upstream watersheds to downstream communities through Corvalent's CorGrid platform for earlier awareness, coordinated response, and a resilient single pane of glass.

Joe Trujillo

Chief Executive Officer, Projexel LLC

2026

Dear

Montgomery County Leadership

Dear Montgomery County Leadership,

My name is Joe Trujillo, and I serve as Chief Executive Officer of Projexel LLC, where we lead Enterprise IT Strategy & Lifecycle Governance for public-sector technology programs, including the Flood Emergency Warning System (FEWS) initiative for Texas. We are preparing to introduce this program to Montgomery County and would welcome the opportunity to connect with the appropriate County stakeholders.

Flood events rarely respect jurisdictional boundaries. Conditions developing in Montgomery County's rural watersheds, tributaries, creeks, and upstream drainage areas can quickly affect downstream roads, neighborhoods, public facilities, critical infrastructure, and the County's growing communities. The central challenge is not simply collecting more data. It is transforming distributed information into early, reliable, and coordinated action.

The D.H. Collective LLC is the prime contract holder for Texas DIR Contract DIR-CPO-6230, Flood Early Warning Systems Technology Solution Products and Related Services (related RFO DIR-CPO-TMP-608). The contract is active for a term running from June 4, 2026 through June 4, 2031, and allows eligible public entities to purchase directly from The D.H. Collective under this cooperative vehicle, covering implementation, installation, SaaS, monitoring, reporting, software configuration, and testing.

Delivering on this contract is a coordinated Flood Emergency Warning System (FEWS) Team bringing together The D.H. Collective LLC as Prime Contractor and contract holder, Projexel LLC leading labor, systems integration, and program governance, Corvalent's CorGrid platform as the sensing and intelligence layer, TALON Technical Sales as sensor partner, and BLCCS as software and dashboard partner. This integrated approach connects sensing, field deployment, telemetry, analytics, visualization, alerting, technical services, and program support through a single coordinated Flood Emergency Warning System.

Our objective is to help communities move from fragmented flood monitoring toward a connected flood-intelligence environment, one that provides earlier visibility into developing conditions, improves situational awareness, supports coordinated emergency response, and presents decision-makers with a unified single pane of glass.

We would welcome the opportunity to meet with Montgomery County's emergency management, public works, precinct, and information technology teams to identify priority watersheds and develop an implementation roadmap aligned with the County's operational requirements.

Sincerely,

Joe Trujillo

Chief Executive Officer

PROJEXEL LLC

PROJEXEL

Understanding the Texas Flood Emergency Warning System Solutions

03

Flood risk is a regional and interconnected challenge. Rainfall and water-level changes may first occur in sparsely populated upstream locations before affecting downstream communities, transportation corridors, low-water crossings, drainage systems, schools, hospitals, public buildings, utilities, and emergency-response routes. When rural and urban monitoring systems operate independently, agencies may receive incomplete or delayed information about how an event is developing across the watershed.

An effective Flood Emergency Warning System should therefore connect upstream rainfall, creek, river, reservoir, drainage, and low-water-crossing data with downstream urban monitoring and emergency operations. Instead of viewing each sensor as an isolated device, public agencies need a common operational picture showing current conditions, historical trends, thresholds, asset health, geographic relationships, and potential downstream consequences.

The D.H. Collective LLC is the prime contract holder for Texas DIR Contract DIR-CPO-6230, Flood Early Warning Systems Technology Solution Products and Related Services (related RFO DIR-CPO-TMP-608). The contract is active with a term from June 4, 2026 through June 4, 2031, and establishes a cooperative procurement path open to eligible public entities, which may purchase directly from The D.H. Collective. The contract covers products and related services including implementation, installation, SaaS, monitoring, reporting, software configuration, and testing. The official contract page is dir.texas.gov/contracts/dir-cpo-6230.

The FEWS partner ecosystem brings together The D.H. Collective LLC as prime and contract holder, Projexel LLC for labor and systems integration, Corvalent's CorGrid platform for sensing, telemetry, and analytics, TALON Technical Sales as sensor partner, and BLCCS as software and dashboard partner.

5

Integrated Ecosystem Partners (D.H. Collective, Projexel, Corvalent, TALON & BLCCS)

DIR-CPO-6230

Active Texas DIR Contract, June 4, 2026 – June 4, 2031

1

Single Pane of Glass for Flood Intelligence

SOURCES: Texas Department of Information Resources: DIR Contract DIR-CPO-6230 / RFO DIR-CPO-TMP-608 (dir.texas.gov/contracts/dir-cpo-6230); Deloitte Smart Cities & Urban Transformation; McKinsey & Company: Smarter Cities Are Resilient Cities.

Corvalent is an American technology company with 32 years of experience and an international presence, specializing in the development and integration of advanced IoT and AIoT (Artificial Intelligence of Things) solutions.

Corvalent's key differentiator is its ability to combine industrial-grade hardware, communications, software, analytics, and technical services into integrated Technology-as-a-Service ecosystems designed to address complex challenges involving automation, distributed asset monitoring, operational visibility, and real-time data management.

CorGrid is Corvalent's modular, scalable, and data-driven IoT platform. It functions as the central intelligence layer of Corvalent's Smart Solutions,

connecting sensors, gateways, assets, systems, users, and operational workflows within a unified environment. For Flood Emergency Warning Systems, CorGrid can provide a unified view of rainfall intensity, accumulated precipitation, creek and river levels, rate of rise, reservoir conditions, low-water crossings, drainage assets, field equipment, device connectivity, battery health, and communications status.

CorGrid supports flexible SaaS, TaaS, on-premises, and hybrid architectures. Its agnostic design allows it to integrate with existing sensors, telemetry platforms, GIS environments, third-party systems, communication networks, emergency-management tools, and legacy infrastructure, reducing the need to replace investments that remain operationally valuable.



Corvalent headquarters: engineering and technology development facility

How the Smart IoT Solution Strengthens Flood Preparedness

05

01 INTEGRATED RURAL UPSTREAM AND URBAN DOWNSTREAM MONITORING

Rain gauges, weather stations, creek-level sensors, reservoir instrumentation, and watershed monitoring devices are correlated with downstream urban channels, stormwater systems, low-water crossings, roads, bridges, and critical facilities, creating a connected watershed perspective rather than isolated monitoring points.

02 A SINGLE PANE OF GLASS FOR FLOOD INTELLIGENCE

CorGrid consolidates telemetry from multiple sensor brands, communication technologies, departments, and jurisdictions into a unified operational environment covering current conditions, sensor locations, active warnings, trends, device status, and geographic risk areas. All you need is a modern browser, whether on PCs, tablets, and/or mobile devices.

03 AUTOMATED THRESHOLDS, ESCALATIONS & RESPONSE WORKFLOWS

Configurable rules continuously evaluate rainfall, water levels, rates of change, and equipment status, triggering advisory, watch, warning, and critical alerts directed to the right personnel based on location, severity, and jurisdiction.

04 LOW-WATER CROSSING, ROAD & CRITICAL-INFRASTRUCTURE PROTECTION

Water-level sensors, cameras, warning beacons, and gate status connect to CorGrid to trigger alerts, update dashboards, create incident tickets, and activate compatible warning equipment for roads, bridges, drainage structures, and pump stations.

05 PREDICTIVE ASSET MAINTENANCE & SYSTEM READINESS

Continuous monitoring of sensor connectivity, battery level, signal strength, telemetry gaps, and device health helps maintenance teams act before a degraded sensor becomes unavailable, prioritizing field visits by risk and importance.

06 HISTORICAL ANALYSIS & CONTINUOUS IMPROVEMENT

Historical rainfall, water-level, alert, incident, and response information supports post-event analysis, infrastructure planning, grant applications, after-action reviews, and future system expansion.



Water-Level and Flow Monitoring:

Radar, ultrasonic, pressure, and other hydrological sensors continuously measure water levels in creeks, rivers, channels, reservoirs, drainage structures, and low-water crossings, with rate-of-rise analysis beyond a simple high-water threshold.



Rainfall and Weather Monitoring:

Rain gauges and compact weather stations provide localized precipitation and atmospheric information, combined with water-level measurements to understand evolving watershed conditions.



Multi-Network Telemetry:

Cellular, radio, LoRaWAN, satellite, Ethernet, Wi-Fi, and other communication technologies are selected according to coverage, bandwidth, power, terrain, and resilience requirements.



GIS Mapping and Geospatial Intelligence:

Sensors, watersheds, roads, bridges, facilities, drainage assets, and risk areas are represented geographically, showing not only what is happening but where and which downstream locations may be affected.



Artificial Intelligence and Advanced Analytics:

Analytics identify abnormal patterns, correlate rainfall with water-level response, estimate propagation between locations, and prioritize alerts, augmenting rather than replacing the judgment of hydrologists and emergency managers.



Integrated Public Warning and Operational Communications:

CorGrid supports integration with approved notification, dispatch, incident-management, signage, beacon, messaging, and public-information systems, from field detection to coordinated communication.



Cybersecurity and Data Governance:

Role-based access, secure device communication, auditability, data ownership, integration governance, and system monitoring are essential components of a public-sector IoT environment.

TECHNOLOGIES: LoRaWAN, Cellular, Satellite, Radar/Ultrasonic Sensors, GIS, AI/ML Analytics, Multi-Network Telemetry

Operational Efficiency

A unified platform reduces fragmented monitoring and gives emergency management, public works, transportation, and public-safety teams a consistent view of developing conditions.

Earlier Flood Awareness

Upstream monitoring can provide additional context and potential lead time before downstream roads, neighborhoods, and critical infrastructure are affected.

Predictive Maintenance

Continuous device-health monitoring helps identify weak batteries, communication failures, and degraded sensors before severe-weather events.

Infrastructure Management

Flood information connects to roads, bridges, drainage systems, utilities, public buildings, schools, hospitals, and emergency facilities.

Resource Optimization

Geographic risk information helps agencies prioritize field inspections, barricades, road closures, equipment deployment, and emergency personnel.

Sustainability & Resilience

Historical and real-time data supports informed infrastructure investments, watershed planning, and long-term community resilience.

Safety & Compliance

Automated alerts, auditable event histories, and structured escalation processes support consistent emergency procedures and accountable decision-making.

Interagency Coordination

Shared dashboards and standardized information enable multiple departments and jurisdictions to collaborate from the same operational picture.

Scalable Smart-City Foundation

The same CorGrid environment can later incorporate additional Smart City capabilities, including public safety, environmental monitoring, and mobility.

This initiative aligns with broader smart-city and resilience strategies. Modern urban transformation is a convergence of sustainability, infrastructure, digital modernization, artificial intelligence, cybersecurity, and advanced connectivity, with cities investing in real-time monitoring and advanced warning capabilities to reduce the effects of extreme weather.

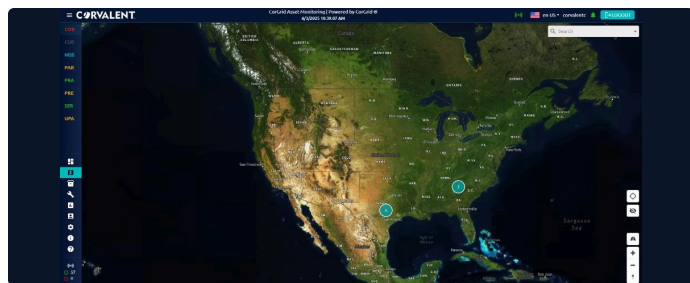
Cities should similarly develop a clear understanding of climate risk, incorporate those risks into planning, and implement early-warning systems, highlighting the role

of technology and data in preventive action, emergency response, infrastructure reliability, and long-term resilience.

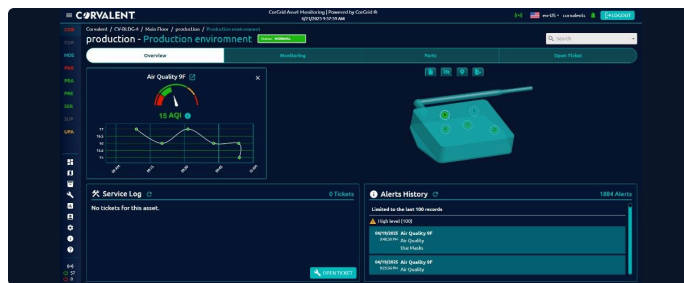
The convergence of watershed monitoring, industrial IoT, geospatial intelligence, real-time analytics, and coordinated emergency management creates an important opportunity for Texas communities to modernize their flood-preparedness capabilities, establishing a scalable flood-intelligence foundation that connects rural upstream conditions with downstream urban consequences.

APPLICABLE INSIGHT: Communities can begin with a Discovery & Technical Alignment Workshop focused on priority watersheds and flood-prone corridors, validating an initial proof of concept before expanding across the full jurisdiction.

SOURCES: Texas DIR: Contract DIR-CPO-6230 / RFO DIR-CPO-TMP-608; The D.H. Collective: Texas FEWS Contract; Deloitte: Smart Cities & Urban Transformation; Deloitte Insights: Five Approaches for Climate-Resilient Cities; McKinsey: Smarter Cities Are Resilient Cities; McKinsey: Ensuring Adaptation and Resilience to Climate Change; NOAA / Natural Hazards Review: Economic Value of Flood Forecasts and Early Warning Systems.



CorGrid® asset monitoring map view across multiple regions



CorGrid® real-time flood-intelligence dashboard

Montgomery County is the next prospect we are preparing to assess for the Flood Emergency Warning System program, following our active engagement with Zavala County as the first prospect. Our preparation is using the precinct information already provided, and we are working to validate the appropriate County contact before advancing county-specific outreach.

Montgomery County's growth, its position along the San Jacinto River watershed, and its mix of rural and rapidly developing suburban areas make it a strong candidate for a connected flood-intelligence approach that bridges upstream rural monitoring with downstream community and infrastructure protection.

ENGAGEMENT STATUS

Montgomery County is currently in the **pre-outreach preparation stage**. Precinct-level information has been gathered to guide our approach, but the appropriate County point of contact (emergency management, precinct, or administrative) still needs to be validated before any county-specific materials name a contact or commit to meeting details.

DISCUSSION FOCUS AREAS FOR MONTGOMERY COUNTY

Priority watersheds and flood-prone corridors across County precincts; existing monitoring and warning infrastructure; low-water crossings and critical facilities most exposed to flood risk; available funding sources; and a sustainable, long-term maintenance model appropriate to the County's scale.

BASIN SENSE IQ: *Basin Sense IQ can later support discussions with Montgomery County as a demonstration dashboard for reviewing public basin, gauge, and crossing information and identifying questions to validate with County staff, once outreach is underway. It should be presented strictly as a discovery tool, not as an operational Montgomery County system of record.*

REFERENCE: Montgomery County is a prospect in preparation; no County contact has yet been confirmed. Basin Sense IQ is a discovery/demonstration dashboard used to support discussion, not an operational system of record.

The Flood Emergency Warning System program is delivered by a coordinated ecosystem of specialized partners, each contributing a distinct capability to the overall solution.

THE D.H. COLLECTIVE LLC — PRIME & CONTRACT HOLDER

Prime contract holder for Texas DIR Contract DIR-CPO-6230. Website: dh-collective.com

PROJEXEL LLC — LABOR & SYSTEMS INTEGRATION

Provides labor and systems integration services for FEWS deployments. Website: projexel.org



CORVALENT — CORGRID PLATFORM

Delivers the CorGrid platform powering sensing, telemetry, analytics, and the single pane of glass. Website: corvalent.com



TALON TECHNICAL SALES — SENSOR PARTNER

Supplies sensor hardware and technical sales support for field deployments. Website: talontechsales.com



BLCCS — SOFTWARE & DASHBOARD PARTNER

Supports software configuration and dashboard capabilities for the FEWS program. Website: blccs.com

PARTNER LINEUP: The D.H. Collective LLC (dh-collective.com), Projexel LLC (projexel.org), Corvalent (corvalent.com), TALON Technical Sales (talontechsales.com), BLCCS (blccs.com).

We recommend a phased approach that allows validation of results, investment management, and continuous learning before expanding across an entire jurisdiction or watershed region.

PHASE 1: DISCOVERY & TECHNICAL ALIGNMENT WORKSHOP

Representatives from emergency management, public works, stormwater, transportation, IT, GIS, public safety, engineering, and procurement identify priority watersheds, flood-prone corridors, low-water crossings, and critical facilities; review existing sensors, telemetry, GIS, and communications infrastructure.

PHASE 2: THRESHOLDS, KPIs & PROOF OF CONCEPT DESIGN

Definition of operational thresholds, users, notification paths, and escalation procedures; establishment of measurable KPIs including warning lead time, data availability, and network readiness.

PHASE 3: PILOT PROOF OF CONCEPT

Design and deployment of an initial proof of concept connecting selected upstream and downstream monitoring locations, validating CorGrid configuration, integrations, alerting, and dashboards under real conditions.

PHASE 4: PHASED ROADMAP & PROCUREMENT UNDER DIR-CPO-6230

Development of a phased implementation roadmap and procurement strategy under Texas DIR Contract DIR-CPO-6230, scaling the validated model across additional watersheds, corridors, and jurisdictions.

Rather than implementing another isolated monitoring system, Montgomery County can establish a scalable flood-intelligence foundation that connects rural upstream conditions across its precincts with downstream community and infrastructure consequences. The immediate objective is to identify the right County stakeholders and begin an informed conversation.

The long-term opportunity is a resilient flood-intelligence environment where flood data becomes part of a wider system for infrastructure management, public safety, and community protection. Projexel, alongside The D.H. Collective, Corvalent, and the full FEWS partner ecosystem, is ready to build this journey in partnership with Montgomery County once outreach is underway.

Who is the appropriate Montgomery County emergency management, precinct, or administrative contact to begin an introductory conversation about flood-warning needs and priority watersheds?

Joe Trujillo

Chief Executive Officer

PROJEXEL LLC

Enterprise IT Strategy & Lifecycle Governance

 projexel.vet