



Building Community Resilience

The future is coming faster than you think. Halff is ready. Are you?

Halff is recognized as one of the nation’s leading infrastructure consulting firms, distinguished by our comprehensive approach to planning, design, engineering and implementation of innovative solutions. At the core of Halff’s mission and technical excellence is a steadfast commitment to fostering resilience — empowering communities to meet current and future challenges and emerge stronger over time.

Halff has been continuously recognized by *Engineering News Record (ENR)* as a Top 100 Design Firm in the U.S., providing nationally recognized services in floodplain management, climate resilience planning, civil engineering and landscape architecture. Halff helps communities adapt to changing conditions and manage risk by providing clients with the best available data and design solutions.

NO. 91 | ENR TOP 500 RANKING

Halff’s Resilience Market

Halff’s Resilience market serves as a focal point for interdisciplinary collaboration and innovation within the firm. The market integrates expertise from all solutions groups, including Infrastructure, Water, Mobility and Placemaking, to address the growing complexities of changing conditions.

Halff’s commitment to resilience extends throughout the entire lifecycle of community investments and decision-making. From initial planning and design phases through implementation and ongoing monitoring, we are committed to developing solutions that are responsive, adaptive and capable of enduring long-term impacts.



Integrated Approach to Resilience Services

Resilience is intricately woven into every facet of Halff’s services. Halff applies a holistic approach that spans from initial modeling and vulnerability assessments to the development of adaptation strategies and the design of resilient infrastructure. This comprehensive strategy ensures that solutions are not only effective but also adaptive and flexible in the face of evolving environmental and societal challenges.

Planning for Climate-Related Hazards

Halff recognizes the urgency of mitigating and adapting to climate-related hazards, from flooding and drought to extreme heat and wildfires. Our solutions encompass advanced modeling techniques and adaptive strategies tailored to local conditions, ranging from current condition assessments to future scenario-based planning.

Designing in Harmony with Nature

Halff embraces innovation in resilience by promoting green infrastructure and Nature-based Solutions (NbS), from the design of living shorelines to protect coastal resources to stormwater mitigation techniques focused on preserving natural resources. We are committed to harmonizing built and natural environments.

Building Community Resilience

Halff serves as a trusted advisor to public and private sector clients by integrating resilience into community infrastructure priorities. Our commitment is focused on developing integrated frameworks which leverage robust public and stakeholder engagement methods to turn ideas into reality. Halff is deeply committed to integrating social vulnerability into our resilience services by ensuring that identified solutions meet the needs of all populations.

Trusted Advisors in Navigating Uncertainty

Halff has served as a nationally recognized trusted advisor to municipalities, counties, regional organizations and state agencies across a broad geographic footprint covering both coastal and inland areas. Halff has played a pivotal role in helping communities of all sizes respond to climate-related shocks and stressors, offering tailored solutions that enhance resilience and promote sustainable development.

FEMA Risk Map Program

Halff has held a pivotal leadership role in FEMA’s mapping programs for decades, starting before the Map Modernization (MapMOD) Program and continuing since. During MapMOD, Halff conducted Hydrology & Hydraulics (H&H) studies and created Flood Insurance Rate Maps (FIRMs) for 54 counties in Texas, leveraging our local presence, community relationships and extensive floodplain management expertise. Since 2014, Halff has partnered with Compass Production and Technical Services (PTS) to support FEMA’s Risk MAP Program, enhancing its role as a Cooperating Technical Partner (CTP). This collaboration extends to 11 CTPs across Texas and Louisiana, where Halff provides crucial expertise in floodplain management and resilience planning.

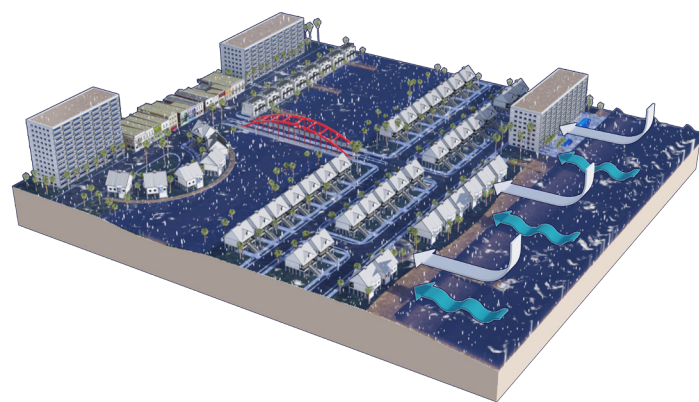
State of Texas Regional Flood Plans

Halff has played a significant role in the Texas Water Development Board’s (TWDB) regional flood planning efforts, serving as either prime consultant or

subconsultant in nine of the 15 established Regional Flood Planning Groups (RFPGs). Halff’s responsibilities have varied by region but encompass leadership in essential tasks such as assessing flood risks, developing goals, recommending feasible solutions and ensuring no adverse impacts.

Resilient Florida Program

Halff has played a leading role in developing statutorily compliant flood vulnerability assessments and adaptation plans for more than 16 counties and 51 municipalities across the state of Florida. The Resilient Florida Program, established in 2021, has yielded the most significant investment in the state’s history to assist communities in adapting to the threats of coastal and inland flooding. Halff has led resilience planning efforts across expansive areas of Florida, including the Northeast, East Central, Central, Tampa Bay, Apalachee and Emerald Coast regions.



Halff is driving **transformational resilience** by helping communities transition from **vulnerability to strength** in the face of natural hazards. Halff’s approach focuses on proactive planning and mitigation strategies that protect homes, businesses and infrastructure. By designing resilient systems and promoting sustainable water management practices, Halff enables communities to move from a state of exposure and disruption to one of **security and vitality**.

Capable and Award-winning Teams

474

Civil Engineers

51

Landscape Architects

47

GIS Staff

70

Water Resource Engineers

34

Urban/Regional Planners

7

WEDG Professionals



2024 Special Achievement in GIS (SAG) Award

Environmental Systems Research Institute (Esri)

Halff was recognized nationally by Esri in 2024 with a Special Achievement in GIS Award. The Tampa Bay Regional Inundation Coordination (TBRIC) project developed a configurable analytics tool to generate flood inundation data for the seven-county area of the Tampa Bay Regional Planning Council (TBRPC). This data was essential for identifying risks to support implementation objectives of the Resilient Florida Program.

Bastrop State Park Dam

American Council of Engineering Companies (ACEC) National Recognition Award

American Public Works Association (APWA) Texas Chapter Project of the Year – Historical Restoration/Preservation

Brazos Bend State Park Drainage Improvement

ACEC Texas Engineering Excellence – Special Project – Gold

City of Buda Comprehensive Plan

American Planning Association (APA) Central Texas Section – Comprehensive Plan Award

Lewisville Healthy Infrastructure Project

Cross Timbers Urban Forestry Council Bronze Leaf Award

Texas Recreation and Park Society (TRAPS) Planning Excellence Award

Resilient Jacksonville

American Planning Association (APA) National Planning Award for Resilience and Sustainability

San Marcos Natural Areas Land Management Plan

American Planning Association (APA) Texas Section – Environmental Planning (Silver)

Statewide Base Level Engineering

ACEC Texas Engineering Excellence – Water Resources – Gold

Twin Lakes Master Plan

American Planning Association (APA) Oklahoma Outstanding Plan

Infrastructure Resilience Services

Halff’s Infrastructure solutions group delivers robust, future-ready systems designed to withstand and quickly recover from disruptions. We specialize in enhancing the reliability and adaptability of critical networks that support community lifelines. Our resilience-focused offerings within the Infrastructure solutions group encompass:

Broadband Connectivity and Network Redundancy

Deploying high-capacity broadband infrastructure with multilayered redundancy to ensure uninterrupted access for critical services and communities.

Intelligent Infrastructure

Integrating real-time monitoring, data analytics and automation to improve infrastructure performance, reduce downtime and enhance disaster responsiveness.

Renewable Energy and Grid Integration

Helping renewable energy developers meet schedules and integrate projects into the grid while staying aligned with regulatory, technical and constructability requirements, increasing system resilience.

Federal Agency Support Services

Providing technical, logistical and resilience-focused services to federal agencies to reinforce infrastructure security and mission-critical functions.

Infrastructure Cybersecurity

Protecting critical infrastructure systems by embedding cybersecurity protocols, real-time threat detection and incident response capabilities.

Border Infrastructure

Designing resilient, high-efficiency ports of entry and transportation systems to bolster national security and streamline cross-border operations.

Water and Wastewater Infrastructure Design

Developing climate-resilient water and wastewater systems that protect public health, ensure service continuity and support environmental goals.

Military Installation Readiness

Conducting infrastructure audits, risk analyses and future-proof planning to support military mission assurance and base operational resilience.

“Infrastructure forms the backbone of our communities and it needs to be adaptive to handle evolving pressures. At Halff, we design infrastructure that is robust and capable of managing new and emerging challenges, ensuring long-term functionality and stability.”

Shaun Cranston, P.Eng.
Infrastructure Solutions Leader



Dallas White Rock Spillway Improvements | Texas

Halff managed a high-impact resilience upgrade for the City of Dallas by reconstructing training walls and concrete slope protection at the White Rock Lake Spillway after a 2006 storm exposed critical vulnerabilities. The design integrated erosion control, stormwater upgrades and phased demolition, ensuring continuity of access and operations. By enhancing flood conveyance and structural integrity, the project now protects downstream neighborhoods and parkland from repeat storm damage, strengthening the City’s stormwater infrastructure and ensuring climate-resilient performance.



Hidalgo County Delta Reclamation Project | Texas

Halff led a transformative resilience effort with the Hidalgo County Drainage District, turning oversized drainage ditches into strategic water assets. The Delta Reclamation Project, winner of the 2023 Texas Rain Catcher Award, captures and stores rainwater to reduce pressure on the Rio Grande. This system not only mitigates flood risk by regulating flows but also secures a decentralized water supply. It showcases how water reclamation can enhance regional drought resilience, increase self-sufficiency and create dual-purpose infrastructure that works harder for the community.



Mill Creek Drainage Relief Tunnel | Texas

Halff is spearheading the \$320 million Mill Creek/Peaks Branch/State-Thomas Drainage Relief Tunnel — America’s largest tunnel project under construction — delivering innovative, large-scale flood resilience for Dallas. Designed to handle 100-year storms, the 5-mile tunnel protects more than 2,200 properties and critical institutions such as Baylor Medical Center and Fair Park. This underground stormwater bypass system exemplifies forward-thinking infrastructure that absorbs climate shocks while preserving surface development, ensuring that urban growth and public safety go hand in hand.



TPWD Bastrop Lake Dam Rehabilitation | Texas

Halff’s dam rehabilitation work at Buescher State Park after its 2015 failure wasn’t just a repair — it was a resilience overhaul. By raising the embankment, replacing the spillway and adding a toe buttress and seepage control, the design now withstands more intense rainfall and runoff events. The project also stabilized slopes near historic park structures, preserving cultural assets. This proactive approach demonstrates how dam upgrades can safeguard ecological, recreational and structural systems in tandem — ensuring their long-term resilience and service reliability.



Florida ITS Operations Network | Florida

Halff helped future-proof Florida’s transportation resilience by designing a next-generation fiber optic backbone connecting more than 2,000 miles of roadway to FDOT’s statewide control centers. The Florida ITS Operations Network (FION) now enables real-time data and video transfer between Regional Transportation Management Centers, the Traffic Engineering Research Lab and headquarters, enhancing decision-making during hurricanes, evacuations and major incidents. This digital infrastructure lays the groundwork for adaptive traffic management and emergency response, forming the nervous system of a smarter, safer and more connected Florida.

Water Resilience Services

Halff’s Water solutions group protects vital water supplies and ecosystems through sustainable, adaptive water management strategies. We advance resilience by managing water resources and mitigating flood risks in the face of climate variability. Our resilience-focused offerings within the Water solutions group include:

H&H Flood Risk Modeling

Applying cutting-edge hydrologic and hydraulic models to simulate flood scenarios, evaluate impacts and inform mitigation strategies.

Coastal Engineering and Adaptation Planning

Designing durable coastal protection systems and long-range adaptation plans to address erosion, surge and sea level rise challenges.

Watershed Plans and Studies

Conducting integrated planning and technical studies to improve watershed health, reduce runoff and support sustainable water use.

Vulnerability Assessments

Identifying infrastructure, population and ecosystem vulnerabilities to flooding and drought and recommending resilience-building actions.

Flood Infrastructure Design

Planning and engineering flood mitigation systems — levees, detention and diversion — to safeguard people, property and infrastructure.

GIS Services and Asset Management

Using spatial data tools to inventory assets, assess risk and support infrastructure maintenance, capital planning and system optimization.

Nature-based Solutions

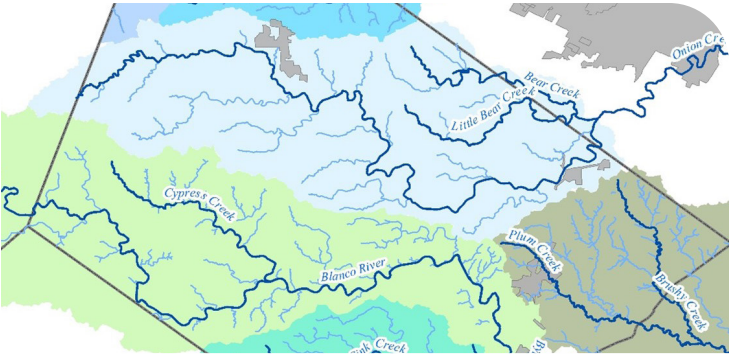
Restoring floodplains, wetlands and green infrastructure to manage stormwater, buffer hazards and enhance ecological resilience.

Integrated Water Resource Management

Creating coordinated management frameworks that align water supply, quality and ecosystem needs under changing climate conditions.

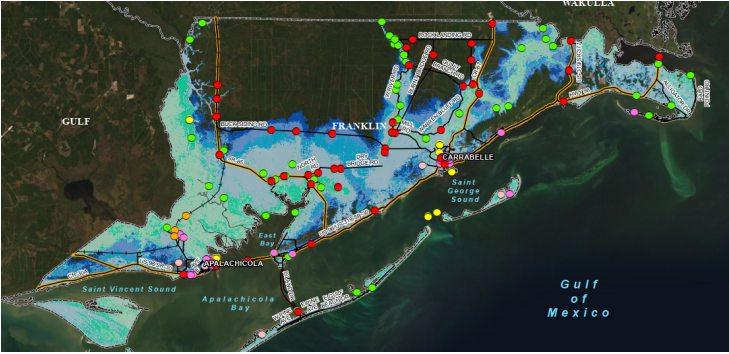
Coastal Stormwater Protection

Designing stormwater systems and natural buffers that reduce coastal flooding risks, improve water quality and protect urban shorelines.



Hays County Flood Inundation Mapping | Texas

Halff helped Hays County turn data into action by advancing a dynamic Flood Monitoring System built on more than 700 miles of newly studied streams. By integrating real-time stream and rain gauges, intelligent flood flashers and a responsive web-based alerting platform, the system now delivers actionable flood intelligence directly to emergency managers and the public. This tech-forward approach empowers local leaders to anticipate and respond to flash floods faster, protecting lives, roadways and critical services — and making the entire county more adaptive to future extreme weather events.



Apalachee Regional Flood Vulnerability Assessment | Florida

Halff led one of the largest Resilient Florida-funded vulnerability assessments, evaluating over 17,000 critical facilities across nine counties and 28 cities in the Apalachee Region. By mapping regional flood hazards — such as tidal flooding, storm surge and compound flooding — against public infrastructure and utilities, Halff created a strategic, science-based road map for resilience investments. The result equips local governments with the insights needed to prioritize adaptation across 10.8% of the state’s land mass, creating a coordinated defense against accelerating climate risks in one of Florida’s most exposed regions.



Little Rock Drainage Manual Update | Arkansas

Halff supported the City of Little Rock by developing the updated Drainage Manual to enhance the City’s stormwater management program. This manual provides engineers, developers and contractors with clear criteria for designing and constructing stormwater infrastructure — such as storm drains, detention ponds and rain gardens — that meet current state and federal regulations. Incorporating the latest stormwater management practices including low impact development (LID) and water quality best management practices (BMPs), the manual addresses pollution control and flood risk reduction.



Panama City SLR Vulnerability Assessment | Florida

In the wake of Hurricane Michael’s devastation, Halff empowered Panama City with a forward-looking sea level rise (SLR) vulnerability assessment and adaptation plan tailored to its long-term recovery. By mapping exposures, assessing risks to key assets and identifying adaptation and funding priorities, the plan gives the City a clear, actionable path to manage chronic flooding threats. Combined with robust public engagement, the process fostered local buy-in and built political momentum — turning lessons from disaster recovery into a blueprint for future resilience grounded in local values.



Shoal Creek Watershed Modeling Study | Texas

Halff delivered a watershed-scale flood resilience upgrade for Austin’s Shoal Creek through advanced modeling and FEMA-compliant mapping. By integrating 2D analysis in flood-prone areas and leveraging InfoWorks RS for greater precision, the study uncovered previously underestimated flow dynamics that threatened neighborhoods and infrastructure. The resulting floodplain revisions ensure more accurate risk communication, better-informed development decisions and stronger regulatory tools — giving the City of Austin and its residents a sharper defense against future stormwater threats.

“Effective water management requires proactive risk planning and the seamless integration of natural systems. At Halff, we are committed to crafting innovative water solutions that not only anticipate future challenges but also harness natural processes. Our goal is to ensure the creation of sustainable and resilient water systems for generations to come.”

Cindy Engelhardt, PE, CFM
Water Solutions Leader



Mobility Resilience Services

Halff’s Mobility solutions group creates innovative transportation networks that maintain connectivity during emergencies and evolving conditions. We combine cutting-edge technology and risk-informed planning to support safe, efficient mobility. Our resilience-focused services within the Mobility solutions group include:

Intelligent Transportation Systems

Deploying smart traffic technologies and data-driven solutions to optimize flow and increase transportation network resilience.

Mobile Lidar and Imaging

Using high-resolution mobile lidar and imaging tools to support accurate mapping, infrastructure assessment and planning decisions.

Local and Regional Transportation Planning

Collaborating with communities and stakeholders to create adaptive transportation plans that promote resilience and connectivity.

Evacuation Planning and Disaster Preparedness

Leading coordinated workshops and scenario planning to develop effective evacuation strategies and enhance disaster readiness.

Roadway and Drainage Design

Engineering resilient roadways and drainage systems that withstand flooding and minimize environmental impacts on coastal zones.

Surveying Services

Conducting precise land and infrastructure surveys to inform sustainable design and implement green stormwater management solutions.

Utility Mapping

Creating comprehensive utility maps to identify vulnerabilities and develop hazard mitigation strategies for critical infrastructure.

Multimodal Integration

Planning flexible transportation networks that support diverse modes and maintain functionality during flood and extreme weather events.

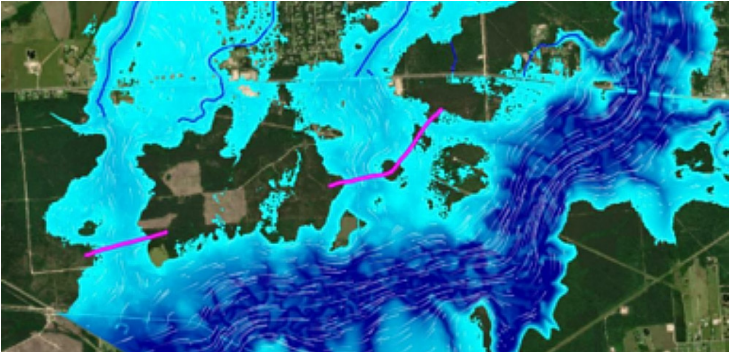
“Designing mobility systems is about more than just connectivity — it’s about ensuring safety and resilience in the face of hazards. At Halff, we focus on creating mobility solutions that are safe, well-connected and prepared to handle various risks effectively.”

James Arbuckle Sr., PE
Mobility Solutions Leader



Bulverde Road Flood Mitigation Project | Texas

Halff supported Bexar County in transforming Bulverde Road by delivering a dual-purpose flood mitigation and transportation solution. Frequent roadway flooding from Elm Waterhole Creek was resolved with a bypass drainage channel and bridge that lifted the corridor out of the 100-year floodplain. The design included stormwater controls, water quality features and wetland-sensitive construction that enhanced downstream habitat. This cost-effective project increased driver safety and connectivity while integrating long-term flood resilience with ecological stewardship.



TxDOT SH 105 | Texas

Halff helped TxDOT proactively design for flood resilience on SH 105 by integrating advanced hydrology and 2D flood modeling before official Atlas 14 guidance was finalized. The redesigned four-lane divided roadway avoided creating upstream impacts by aligning elevation changes with hydrologic behavior. All crossings were sized for the 25-year storm and refined modeling revealed Pine Island Bayou’s overflow risk — prompting drainage design adjustments that protected the corridor from future inundation, ensuring safe and reliable transportation during heavy rainfall events



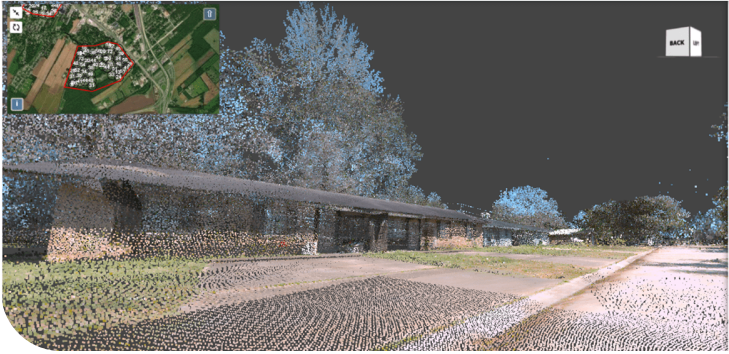
TxDOT Ocelot Crossing Designs | Texas

For the IH 69E corridor upgrade, Halff balanced infrastructure modernization with ecological and flood resilience. Working with the TxDOT Pharr District, Halff designed PS&E improvements over four miles, including wildlife crossings to support the endangered ocelot. The project incorporated future expansion capacity and grade separations that reduce flood risks while preserving critical habitat connectivity. The design enhances safety and mobility while preparing the highway for both increasing development and environmental stressors across South Texas.



Pasco County Living Shorelines Survey | Florida

Halff advanced coastal resilience in Pasco County by conducting upland and aquatic vegetation surveys that laid the groundwork for nature-based shoreline protection. By identifying zones for marsh and transition plantings and analyzing tidal and surge dynamics, the project supported sustainable design of living shorelines in three parks. The work helped integrate recreational infrastructure and ecological restoration, equipping the County with plans that mitigate erosion, adapt to sea level rise and enhance community access to resilient waterfronts.



Alexandria DOTD Finished Floor Elevations | Louisiana

Halff collaborated with the Louisiana Department of Transportation and Development on the NFIP Substantial Damage Estimator Pilot Project to enhance community resilience by prioritizing flood damage assessments after disasters. Using Finished Floor Elevations and Base Flood Elevations the project developed flood risk models to accelerate response and recovery efforts. Integrating AI technology, the team predicted flood risks across less densely populated areas by analyzing flooding data infrastructure and socio-economic metrics. Mobile lidar technology enabled faster, safer data collection for nearly 4,700 structures.

Placemaking Resilience Services

Halff’s Placemaking solutions group fosters vibrant, sustainable communities through strategic urban design and development. We design spaces that enhance social cohesion, economic opportunity and environmental stewardship while adapting to future risks. Our resilience-focused services within the Placemaking solutions group include:

Parks and Trails Planning and Design

Creating thoughtfully designed recreational spaces and trail networks that enhance community connectivity, health and climate resilience.

Comprehensive Planning

Crafting holistic plans integrating land use, transportation and economic growth to build long-term, climate-adaptive community resilience.

Community and Stakeholder Engagement

Fostering meaningful collaboration with residents and stakeholders to incorporate diverse perspectives into resilient development planning.

Charette Planning

Leading interactive design workshops that bring communities together to co-create innovative, context-sensitive resilience strategies.

Living Shorelines and Coastal Habitat Protection

Engineering natural shoreline buffers and habitat restorations that reduce erosion and support biodiversity in vulnerable coastal areas.

Low Impact Development

Applying green infrastructure and sustainable land use techniques to reduce runoff, improve water quality and increase ecosystem resilience.

Hazard Mitigation Planning

Formulating proactive risk reduction plans that address flood, hurricane and other natural hazard vulnerabilities to safeguard communities.

Floodable Developments

Designing adaptable built environments that accommodate periodic flooding while protecting property and enhancing public safety.

“ Placemaking involves engaging with the community and strategic planning to create spaces that work for everyone. We emphasize identifying potential hazards and incorporating community feedback to design vibrant and resilient spaces that address local needs and challenges. ”

Matt Bucchin, AICP, LEED Green Associate
Placemaking Solutions Leader



Cascades Park | Florida

Halff led the planning and design of Cascades Park and the Capital Cascades Trail, turning a former EPA Superfund site into a vibrant, flood-resilient public space in Tallahassee. Centered on a 5.2-mile green corridor, the 25-acre park functions as a floodable landscape that captures and conveys stormwater, alleviating chronic flooding in the city’s southeast quadrant. This project blends stream restoration with passive recreation and environmental remediation, transforming a once-blighted area into a cornerstone of urban resilience and community revitalization.



Hogans Creek | Florida

Halff supported Groundwork Jacksonville’s vision for a resilient urban greenway by completing 30% preliminary design for the Hogans Creek restoration and trail. Stretching 2.6 miles through historic Jacksonville neighborhoods, the project aims to reduce flood risk, restore natural flow and support water quality improvements. With future integration into the 30-mile Emerald Trail network, the design incorporates community feedback and wildlife habitat enhancements while addressing stormwater challenges, making the creek a safer, healthier corridor for people and nature.



Jacksonville Resilience Strategy | Florida

Halff supported the City of Jacksonville in developing its 50-Year Resilience Strategy, following the appointment of its inaugural Chief Resilience Officer (CRO). Over an 18-month period, Halff supported a team that led the development of flood hazard layers, conducted climate vulnerability analyses and facilitated a citywide inventory of resilience activities using a Structured Decision Making Framework. The final strategy provides an actionable road map to guide policy, infrastructure and community investments in response to climate risks, positioning Jacksonville to make informed, equitable decisions that enhance long-term resilience and adaptive capacity.



Cherokee Nation Park Master Plan | Oklahoma

Halff partnered with Cherokee Nation Businesses to develop a master plan for a 100-acre park on Robert S. Kerr Reservoir’s north shore aimed at fostering economic resilience through tourism diversification and job creation. The plan envisions a self-contained regional destination offering lodging, dining, cultural and recreational amenities that attract visitors year-round. This integrated approach strengthens community revenue streams, promotes sustainable tourism and enhances long-term economic stability for the region.



Texas GLO Pedestrian Egress Evacuation Study | Texas

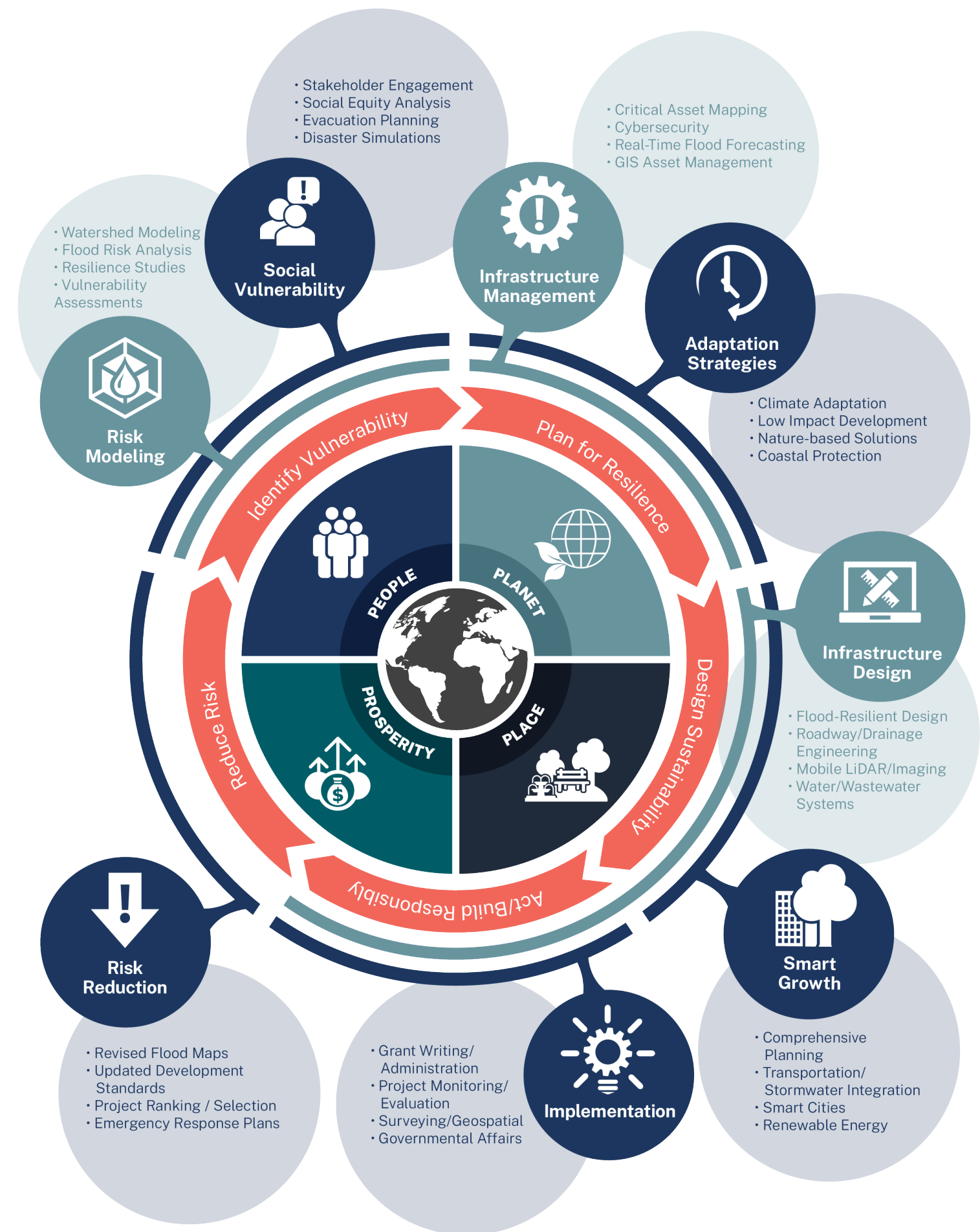
Halff helped the Texas General Land Office evaluate how flood-prone neighborhoods in the Lower Rio Grande Valley can safely evacuate by foot during extreme rainfall and tidal flooding. The study combined community input, field data and oversight committee guidance to identify gaps in the pedestrian evacuation network. Final recommendations include flood-resilient trail upgrades, site designs and costed strategies for improving access to shelters — protecting vulnerable populations with equitable, low-cost evacuation options during climate-driven flood events.

At Halff, we help communities strengthen their resilience by starting with a clear understanding of local risks — to people, places and the environment. Our assessments identify what’s most vulnerable and where there are opportunities to act.

Our work is grounded in four priorities: *people, planet, prosperity* and *place*. These guide practical strategies that are fair, forward-looking and built to adapt.

From early planning to final construction, we deliver innovative, real-world solutions that protect infrastructure and natural resources alike. We use the latest technology and proven methods to translate insights into action.

Resilience isn’t one-and-done. That’s why we stick with communities to track progress, refine plans and respond to new challenges — helping them stay strong no matter what the future brings.



We improve lives and communities
by turning ideas into reality.



Contact

Sean Lahav, MPA, WEDG

Resilience Market Leader

904.720.2611 | slahav@halff.com